

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

In the Matter of)	
)	
Implementation of Section 255 of the)	
Telecommunications Act of 1996)	
)	WT Docket No. 96-198
Access to Telecommunications Services,)	
Telecommunications Equipment, and)	
Customer Premises Equipment)	
By Persons with Disabilities)	

**COMMENTS OF THE TELECOMMUNICATIONS
INDUSTRY ASSOCIATION**

Grant Seiffert
Vice President, Government Relations
TELECOMMUNICATIONS INDUSTRY
ASSOCIATION
1300 Pennsylvania Avenue, N.W.
Suite 350
Washington, D.C. 20004

Dated: June 30 , 1998

EXECUTIVE SUMMARY

The purpose of Section 255 is to provide increased access to telecommunications and to encourage ease of use of telecommunications products and services by persons with disabilities, to the extent “readily achievable.” TIA supports this goal. TIA believes the goals of Section 255 can be best accomplished in a competitive market rather than through intensive government regulation. The telecommunications market has been in fact a source of benefits for persons with disabilities. The telecommunications equipment and CPE markets are highly competitive which has caused TIA's members to manufacture an array of sophisticated telecommunications devices with increasing capabilities. The competitive telecommunications equipment and CPE markets also have had the effect of making telecommunications devices more accessible to and usable by persons with disabilities. In addition to features such as vibrating pagers; alphanumeric display pagers; speakerphone functionality; screens on cellular and PCS phones which allow an entity to receive text messages; and many other features which make telecommunications equipment and CPE more accessible to persons with disabilities, TIA members have reduced the size and cost of devices which has made such products more accessible to people with disabilities.

TIA believes that in adopting a structure for implementation of Section 255 the FCC should not impose unnecessary and unrealistic burdens upon the manufacturing community which will serve only to have a detrimental impact on the overall ability of manufacturers to continue to provide more features, functionality and capacity at lower prices. Excessive regulation which requires manufacturers to expend resources documenting decisions on why it was not possible to

incorporate accessibility features into devices covered by Section 255 will reduce the resources that can be devoted to developing new and innovative products, including products with more accessibility features than exist today. A framework for Section 255 implementation should encourage members of the disability community and the manufacturing community to work together to identify specific barriers to accessibility and, thereby accomplish the laudable goals of Section 255.

The FCC should adopt rules which allow manufacturers to use a product line approach to Section 255 rather than a product by product approach. In this regard, the Commission should allow manufacturers to apply the Access Board's 18 point "accessibility checklist" across product lines. Virtually all parties that have participated in the proceedings at the Access Board and in the NOI portion of this proceeding, agree that as a practical matter it is not "readily achievable" to make a universally accessible product since features that enhance accessibility for one disability, may decrease accessibility for other disabilities. A regulatory regime that allows manufacturers to devote resources to developing accessibility solutions to families of products with similar features, functionality and price, will ultimately result in greater accessibility being provided to a greater number of people with a wider variety of disabilities.

With respect to the statutory definitions, the FCC should adapt the definitions of "disability" and "readily achievable" taken from the ADA, to the telecommunications context. For example, the definition of "disability" should be interpreted to include only those persons with functional limitations that affect their ability to use telecommunications. Thus, while approximately 50 million people in the U.S. may have some type of disability, not all 50 million

people are precluded from accessing the full panoply of telecommunications services available today.

Similarly, the FCC should revise the Access Board's definitions of “accessibility,” “compatibility,” and “manufacturer” to avoid undesirable consequences and negative incentives that may not be apparent at first glance. For example, because it is not “readily achievable” to manufacture a product which meets all 18 points of the Access Board's accessibility checklist, "accessible" should be defined as telecommunications equipment and CPE which enhances the ability of a person with a disability to use telecommunications equipment or CPE by incorporating one or more of the factors enumerated in the Access Board's 18 point checklist.

Section 255 should be applied only to telecommunications services, as opposed to information services and only to telecommunications equipment and CPE to the extent the telecommunications equipment and CPE is being used in connection with a telecommunications service.

The FCC should adopt TIA’s dispute resolution process instead of the FCC’s proposed fast track process. The proposed fast track deadlines (FCC transmitting complaints within 1 day and manufacturers responding thereto within 5 days of the date the complaint was forwarded), are too short to lead to meaningful resolution of perceived accessibility problems. As a result, the fast track process is not conducive to resolution of complaints and will serve only to put parties in a defensive posture. More importantly, the fast track process will not result in increased accessibility. The FCC should require persons with disabilities who are directly aggrieved by the perceived lack of accessibility of a product to discuss the issue with the appropriate manufacturer

before involving the FCC. Under TIA's proposal the parties would have 60 days within which to resolve the issue or the matter can be taken up in a more traditional complaint process.

TIA agrees with the FCC that a contact point for Section 255 matters is necessary but asserts that the Commission should permit manufacturers flexibility in designating a contact point. TIA urges the FCC to adopt a standing requirement to ensure that frivolous complaints are not submitted. To ensure that the Commission's resources are not burdened and manufacturers do not have to respond to "stale" complaints, the FCC should impose a 6 month statute of limitations on the filing of complaints against manufacturers. To enable manufacturers to provide detailed and substantive responses to complaints, complainants should be required to provide detailed information about his or her disability as well as steps taken to obtain an accessible product.

In the context of defending against complaints, confidentiality is a critical concern to manufacturers since much of the information that might have to be submitted in a complaint proceeding would include highly proprietary and sensitive cost and financial information regarding a product or product pricing strategies. For example, when raising a "readily achievable" defense, information which would have to be submitted to prove a case might include product costs, electrical current requirements for certain features, ROM space required for certain features, licensing fees paid to others, technical details of operation and similar matters which, if put in the public domain would have devastating impact on a manufacturer's competitive position in the marketplace.

The FCC's current "complaint process" which permits a fast track complaint, informal dispute resolution, and formal dispute resolution is unjustifiably burdensome to manufacturers.

The FCC's proposal could result in manufacturers being required to defend themselves in three separate actions. TIA proposes instead that the FCC adopt TIA's proposed dispute resolution process, and allow complainants to use a modified formal complaint process in which no discovery is allowed.

The FCC's proposal to rely on outside information in rendering decisions on fast track (and other) complaints is not presently viable. While there are persons who have many good ideas on how accessibility can be increased in the telecommunications context, there is virtually no expertise on whether it is "readily achievable" to incorporate such ideas into any individual manufacturer's product. The design and development process for telecommunications equipment and CPE is highly complex and results in numerous experts collaborating on the best manner to incorporate numerous features in a given product.

The FCC should not serve as a clearinghouse for accessibility information nor require manufacturers to submit general accessibility information for redistribution to the public and the FCC should not or give manufacturers a "seal or other imprimatur" on Section 255 compliance. Due to the large number of products introduced on a monthly basis, the FCC does not have the resources to keep such information up to date. The public might believe the act of distributing information is an acknowledgement that a manufacturer's product complies in all respects with Section 255 when that might not be the case. Since the marketplace will ensure that accessibility information will be distributed, the FCC should not devote its limited resources to such a project.

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	i
I. INTRODUCTION.....	9
II. THE FCC SHOULD PERMIT MANUFACTURERS TO EXERCISE DISCRETION IN INCORPORATING ACCESSIBILITY FEATURES ACROSS PRODUCTS WITHIN A PRODUCT LINE.....	17
A. A Product Line Approach Is The Key To Enhanced Accessibility.	17
B. The FCC’s Proposal To Require A Product-By-Product Assessment Is Inconsistent With The Practical Reality That No Single Piece Of CPE Can Be Accessible To Everyone.	21
C. The FCC’s Proposal Requires Manufacturers To Defend, Through A Series Of Piecemeal Complaints, Their Inability To Achieve The Impossible – A Universally Accessible Product.	22
D. The ADA Not Only Supports, But Compels The FCC To Adopt The Product Line Approach To Compliance Advocated By TIA And Other Manufacturers.....	24
III. DEFINITIONS.....	26
A. The Definition Of "Disability," Incorporated By Reference From The ADA Should Be Interpreted To Include Only Those Persons With Functional Limitations That Affect Their Ability To Utilize Telecommunications.	27
1. By analogy, the ADA supports an interpretation of “disability” in the telecommunications context to include only those persons with functional limitations that affect their ability to use telecommunications.....	28
2. The legislative history supports an interpretation of “disability” that includes only those functional limitations that “substantially limit” a person’s ability to use telecommunications.....	30
3. In order to be “useful” to manufacturers, service providers, consumers, and the FCC, the definition of “disability” must be focused on the functional limitations that “substantially limit” a person’s ability to use telecommunications.	30
B. The FCC Should Adopt A Definition Of “Accessible” That Minimizes The Amount Of Resources Diverted To Documentation And Maximizes The Accessibility Information Made Available To Consumers.....	32

1.	The FCC’s proposed definition of “accessible” requires manufacturers to waste resources defending their inability to achieve the impossible: a universally accessible product.	33
2.	The FCC’s proposed definition of “accessible” ignores ADA precedent and incorrectly refuses to consider the cumulative cost of providing access to different disabilities in determining what is “readily achievable.”	35
3.	The FCC’s proposed definition of “accessible” creates disincentives for manufacturers to provide accessibility information - information which would be helpful to consumers with disabilities.	37
4.	TIA proposes an alternative definition of “accessible” that creates incentives for manufacturers to provide information about accessibility features to consumers, and recognizes that such features will be incorporated, to the extent “readily achievable,” across product lines and families.	37
C.	TIA Supports the FCC’s Approach to The Definition Of “Compatibility” Yet Is Concerned that the Definition Will Not Promote Innovation and Places Too Great a Burden on Manufacturers to Achieve Compatibility.	43
D.	The FCC Should Adapt The Definition Of “Readily Achievable” To The Telecommunications Context.	47
1.	Technical feasibility should be considered as part of the “readily achievable” analysis.	48
2.	The consideration of “expense” as part of the “readily achievable” analysis should include cumulative costs of features that enhance accessibility, as well as opportunity costs.	50
3.	TIA supports consideration of “practicality” in the “readily achievable” analysis.	51
4.	The concept of “fundamental alteration,” used in the ADA, should be modified to the telecommunications context and considered to insure that equipment and CPE remain consistent with the fundamental characteristics of functionality and price required by the market segment that the products are designed to serve.	51
E.	Manufacturer.	55
1.	Responsible Entity.	55
2.	“Final Assembler.”	56

IV.	THE FCC SHOULD INTERPRET SECTION 255 IN A MANNER THAT IS CONSISTENT WITH THE LIMITATIONS ON THE FCC’S AUTHORITY REFLECTED IN THE COMMUNICATIONS ACT.	57
A.	Section 255 Applies Only to Providers of Telecommunications Services and Not Information Services.	58
B.	Equipment Must Comply With Section 255 Only to the Extent It is Being Used In Connection with Telecommunications Services.....	61
C.	The Intent of the Manufacturer Must Be Considered in Determining Whether to Apply Section 255(c) to “Multi-Use” Equipment or Equipment That is Used Incidentally for a Telecommunications Service.	63
V.	IMPLEMENTATION PROCESS.	66
A.	Fast Track Process.	67
1.	Encouragement of Informal Dialogue Between Interested Parties.....	69
2.	Contact Point.	73
3.	Fast Track Deadlines are Too Short.....	76
4.	Standing.	80
5.	Complaint Format.....	81
6.	FCC Decisionmaking Process.	82
7.	Ability to Switch Out of the Fast Track Process.....	85
B.	TIA’s Proposed Dispute Resolution Process.....	85
C.	Use of Traditional Dispute Resolution Processes.	88
1.	Statute of Limitations for Bringing Complaints.	89
2.	Response Time for Informal and Formal Complaints.	90
3.	Confidentiality.	92
4.	Formal Dispute Resolution.	93
5.	Alternative Dispute Resolution Process.....	95
6.	Defenses to Section 255 Complaints.	97
7.	Penalties for Non-Compliance.....	98
8.	Additional Implementation Issues.	100
VI.	INTERIM TREATMENT OF COMPLAINTS.....	101
VII.	CONCLUSION.....	102

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.**

In the Matter of)	
)	
Implementation of Section 255 of the)	
Telecommunications Act of 1996)	
)	WT Docket No. 96-198
Access to Telecommunications Services,)	
Telecommunications Equipment, and)	
Customer Premises Equipment)	
By Persons with Disabilities)	

**COMMENTS OF THE TELECOMMUNICATIONS
INDUSTRY ASSOCIATION**

I. INTRODUCTION.

Pursuant to the provisions of Section 1.415 of the Commission’s Rules, the Telecommunications Industry Association (“TIA”) respectfully submits its comments in the above-captioned proceeding.¹ In support of its comments, TIA states as follows:

¹ *Implementation of Section 255 of the Telecommunications Act of 1996: Access to Telecommunications Services, Telecommunications Equipment and Customer Premises*
(Continued ...)

TIA is a national trade organization with membership of 900 large and small companies that provide communications and information technology products, materials, systems, distribution services and professional services in the United States and around the world. The association's member companies manufacture or supply virtually all of the products used in the global communications networks. TIA member companies have been in the forefront of the development of telecommunications equipment and CPE and have, thus, been an integral part of the telecommunications revolution that has had a dramatic and positive effect on the manner in which citizens conduct their lives.

As vigorous competitors in the hotly contested marketplace for telecommunications equipment and CPE fostered by the Commission's pro-competition policies, TIA members have engaged in substantial research and development to provide consumers with products with increasing capabilities at ever lower prices. The dramatic increase in use of communications devices of all types for a variety of voice and data services, for example, is the result of the efforts of TIA members. The technological developments resulting from TIA members' research and development efforts have served to benefit individuals with disabilities as well as the broader marketplace.

Advances in micro-technology components have permitted manufacturers to provide an increasing array of features for mass market products which serve to make such communications devices more accessible to and useable by individuals with disabilities. Vibrating pagers make it possible for persons with hearing disabilities to be alerted to incoming paging messages; display pagers make it possible for persons with hearing disabilities to receive

Equipment by Persons with Disabilities, Notice of Proposed Rule Making, WT Docket No. 96-198, FCC 98-55 (rel. April 20, 1998) (hereinafter "NPRM").

messages; alphanumeric pagers make it possible for persons with hearing disabilities to read text messages rather than to receive only numeric messages; voice pagers make it easier for persons with vision impairments to hear messages; cellular, PCS, enhanced SMR and cordless phones allow persons with mobility disabilities to be able to utilize the telecommunications network without having to use public phones or phones which may otherwise be located in inconvenient places; cellular, PCS and cordless phones often have visual displays and thus serve as devices which can receive short data messages; in the not too distant future, cellular and PCS telecommunications equipment and other CPE will be used to provide information about the user's location to emergency service providers, assisting individuals with functional limitations that make it difficult to access emergency services; wireless modems made specifically for use with computers and similar devices allow persons with hearing disabilities to use PCs to receive e-mails and faxes; voice recognition features permit calls to be initiated hands-free; speaker phone and other hands-free features incorporated into a wide variety of wireline and wireless CPE make it easier for persons with motor impairments to access telecommunications networks. Advances in technology also have allowed manufacturers to reduce the size and weight of CPE and at the same time lengthen the battery life of portable CPE, thus making it easier and more convenient for all persons, including persons with disabilities, to carry and use portable CPE in their everyday activities.

Perhaps most importantly, advances and innovation in technology, combined with a competitive marketplace, have caused the prices of communications devices, including CPE, to be driven dramatically downward towards cost. This has made a wide variety of devices manufactured by TIA members available to all segments of the public, including those persons

whose disabilities may have otherwise resulted in lower earning power relative to society as a whole.

Features which enhance the accessibility of devices manufactured by TIA members did not commence with Section 255. As they have competed with each other for customers, manufacturers have developed new product features and, through the use of new technology, reduced the cost of providing older, more limited product features. In pursuing a strategy of differentiating their products – both from their competitors’ offerings and their own prior offerings – manufacturers have created products with unique features and combinations of features. In the course of pursuing a marketing strategy of product differentiation, manufacturers have introduced products with a variety of features which make them both more attractive in the marketplace and more accessible to individuals with disabilities. The following examples illustrate TIA members’ long history in providing products with features which make them more accessible. Voice pagers were first introduced in the late 1950’s; the speakerphone was introduced in the early 1960’s; the vibrating pager was first introduced in the mid-1970’s; visual displays on CPE were first used in the early 1980’s. Although some apparently believe that these accessibility-enhancing features were initially developed for people with disabilities and later made their way into the general marketplace, this is not the case. Rather, these features, initially developed for other market segments, proved to be useful for individuals with disabilities. For example, the vibrating pager, useful to people with impaired hearing, was initially developed so that factory workers in a noisy environment could be alerted to a page. Similarly, the speakerphone, useful to persons with motor impairments, generally was used in its early years by only a minority of executives to conduct group telephone calls in their offices. In both cases, TIA members, competing in the marketplace, invested in developing technology that enables them to provide

these features—initially high added-price options—in a wide variety of products at small or no price premiums. These examples demonstrate how manufacturers, when granted discretion as to how best to incorporate new features across their product lines, can achieve gains in technology that will benefit all consumers, both disabled and non-disabled alike.

The foregoing examples of some features of products now offered by TIA members which enhance the accessibility of their products to individuals with disabilities illustrates how manufacturers' investments in research and development have benefited all consumers, including those with disabilities—even without the obligations imposed on manufacturers by Section 255. It also demonstrates how allowing the highly competitive marketplace to operate freely has operated to enhance the accessibility of telecommunications equipment and CPE—a process that the Commission's implementation of Section 255 should encourage.

Moreover, the foregoing examples of product features to enhance accessibility is inconsistent with the notion that there has been a significant failure of the marketplace to make telecommunications equipment and CPE accessible, to the extent that it is “readily achievable” to do so. Two of the examples often cited as evidence of such marketplace failures—the interference of digital wireless telephones with some hearing aids and the incompatibility of digital wireless services and CPE with TTY/TDD devices—are rather the inevitable result of old technologies being exposed to radically new and advanced technologies. Some compatibility issues present very challenging technical problems which may not be amenable to solution, no matter what the regulatory incentives or what time, effort, and resources are expended to solve them based, in part on the continued use of old technology.

Intrusive government regulations which impose unnecessary and unrealistic burdens upon the manufacturing community will serve only to have a detrimental impact on the

overall ability of manufacturers to continue to provide more features, functionality and capacity at lower prices.² Excessive regulation which requires manufacturers to expend substantial resources documenting decisions on why it was not possible to incorporate accessibility features into devices covered by Section 255 does not serve the public interest since that will reduce the resources that can be devoted to developing new and innovative products, including products with more accessibility features than exist today.

In making a decision on a framework for Section 255 implementation, it is also incumbent on regulators to carefully study the factual premises on which many arguments are based. TIA does not dispute the fact that approximately 50 million people or 25% of the population of the United States has some type of disability. It does dispute the implication that all Americans with disabilities are unable to use telecommunications equipment and CPE. In fact, there are a great many persons with disabilities who are not only fully able to use all telecommunications equipment and CPE manufactured today, but who can more easily use telecommunications networks as a direct result of the innovation that has been accomplished by TIA members. For example, a person whose legs are paralyzed and may be confined to a wheelchair can carry a cellular or PCS phone with them and have total access to the full panoply of telecommunications services without having to be concerned about the height of a payphone or winding his or her way through narrow hallways or corridors to gain access to a telephone instrument. In fact, the demonstrations at the Commission's April 2, 1998 Open Meeting at which the instant NPRM was voted, clearly demonstrated that even in the absence of Section 255 and

² See generally Charles L. Jackson, Ross M. Richardson & John Haring, Strategic Policy Research Inc., *An Evaluation of the Access Board's Accessibility Guidelines*, attached as Appendix A (hereinafter "SPRI Study").

implementing regulations being in place, the marketplace is working to meet the needs of persons with disabilities. Some needs were met by low-cost, mass market products like speakerphones. Other needs were met by highly specialized products like the Liberator and the TTY produced by small innovative manufacturers with specialized expertise.

Careful examination of the conclusions of the Access Board are in order inasmuch as accessibility for the rapidly changing and evolving telecommunications arena is substantially different than for architectural barriers with which the Access Board had prior experience. Congress clearly recognized this by requiring the Access Board to develop guidelines for telecommunications equipment and CPE "in conjunction" with the FCC. Thus, the Commission's tentative conclusion that it must give "substantial weight" to the conclusion of the Access Board³ is not only unsupported by Section 255 itself, but is contradicted by the express language of the statute which gives the FCC co-equal responsibility in developing guidelines. The FCC should not automatically defer to the Access Board in all matters relative to accessibility.

TIA members take seriously their public responsibility to make telecommunications equipment and CPE accessible to the extent it is "readily achievable" to do so. TIA has been an active participant in the collaborative process in which representatives of industry, the disabled community, and government agencies have explored how best to implement Section 255. An executive with TIA served as Co-Chair of the Telecommunications Access Advisory Committee ("TAAC") formed by the Architectural and Transportation Barriers Compliance Board ("Access Board"). A number of TIA's members actively participated in and were members of the TAAC.

³ *NPRM* ¶ 30.

TIA and numerous members submitted comments in the Commission's Notice of Inquiry⁴ ("NOI") on Section 255 implementation as well as the Access Board's NPRM.⁵ TIA and its members have had meetings with the staff of the Wireless Bureau and the Commission's Disabilities Task Force in an effort to communicate the views of its members. The staff of former Chairman Hundt specifically requested that TIA develop a proposed regulatory framework which might be used as a starting point for the development of a consensus agreement between manufacturers and the disability community on the best manner to implement Section 255.⁶ Despite legitimate differences in opinion TIA may have with others who have interests in Section 255, TIA does not doubt the sincerity of those with different views on the subject, including members of the Commission and its staff. Neither should the Commission or persons with disabilities doubt the sincerity of the manufacturing community to comply with the spirit and the letter of the law.

In these comments, TIA hopes to demonstrate to the Commission and members of the disability community that a regulatory framework designed to encourage members of the disability community and the manufacturing community to work together is likely to result in more accessibility features being made available in a wider variety of products than would be the case if an unrealistic regulatory framework is implemented as a result of misperceptions of the state of the market and unrealistic views of the ability of manufacturers to make every product accessible to every disability.

⁴ *In the Matter of Implementation of Section 255 of the Telecommunications Act of 1996, Access to Telecommunications Services, Telecommunications Equipment, and Customer Premises Equipment by Persons With Disabilities, Notice of Inquiry*, WT Docket No. 96-198, FCC 96-382 (rel. Sept. 19, 1996).

⁵ *Architectural and Transportation Barriers Compliance Board Telecommunications Act Accessibility Guidelines Notice of Proposed Rulemaking*, 62 Fed. Reg. 19178 (April 18, 1997).

⁶ TIA's proposal, dated December 1997, is attached as Appendix B.

II. THE FCC SHOULD PERMIT MANUFACTURERS TO EXERCISE DISCRETION IN INCORPORATING ACCESSIBILITY FEATURES ACROSS PRODUCTS WITHIN A PRODUCT LINE.

TIA believes the most important decision the FCC will make in response to this *NPRM* is whether Section 255 applies on a product-by-product basis to each piece of telecommunications equipment and CPE, or whether it applies instead to lines or families of products with similar features, functions, and price. The FCC's *NPRM* provides no clear guidance as to how this issue will be resolved.

A.

A Product Line Approach Is The Key To Enhanced Accessibility.

In the *NPRM*, the FCC proposes to require manufacturers to conduct an assessment of whether it is “readily achievable” to incorporate accessibility (defined by the Access Board to include each item on an 18 point “checklist”) into each and every product.⁷ At the same time, the FCC recognizes that “the ideal of full accessibility is generally limited by feasibility, expense, or practicality,” in other words, by what is “readily achievable.”⁸ The “full accessibility” “ideal” that the FCC recognizes cannot be achieved within the parameters of the “readily achievable” standard is a piece of telecommunications equipment or CPE that is accessible to all persons with all disabilities.

Based on this implicit recognition of the practical reality that no product can be accessible to everyone, the FCC acknowledges in the *NPRM* that:

In the marketplace, providers must decide what features to include and what features to omit. We believe it is reasonable for an informed product development decision to take into

⁷ *NPRM* ¶¶ 168-69. The FCC quotes the Access Board for the proposition that: “the assessment as to whether it is or is not readily achievable [to provide accessibility in every product] cannot be bypassed simply because another product is already accessible.” *NPRM* at ¶ 169 (quoting Access Board Order, 63 Fed. Reg. at 5611). The FCC proposes to adopt the Access Board’s definition of “accessibility,” which comprises an 18 point checklist of accessible product functions which must be assessed independently. The independent assessment is whether each of the 18 criteria is readily achievable and therefore required under Section 255. In reality, the Access Board’s checklist contains more than 18 criteria: for example, in addition to the 18 criteria listed, the Access Board included a requirement that “[t]elecommunications equipment and customer premises equipment . . . pass through cross manufacturer, non-proprietary, industry-standard codes, translation protocols, formats or other information necessary to provide telecommunications in an accessible format.” *See NPRM* ¶ 75; *NPRM* App. C at C5. Thus, the 18 point checklist could actually be considered “18 point-plus.” For purposes of this document, reference to the “18 point checklist” includes the 18 points adopted by the Access Board plus the others described above.

⁸ Feasibility, expense, and practicality are the three components of the “readily achievable” definition proposed by the FCC. *NPRM* ¶ 100.

account the accessibility features of other functionally similar products the provider offers, provided it can be demonstrated that such a “product line” analysis increases the overall accessibility of the provider’s offerings.⁹

This statement by the FCC highlights the importance of granting manufacturers discretion to determine how to incorporate accessibility features into their products.

TIA agrees that discretion on the part of manufacturers is essential to gaining overall increased accessibility. However, TIA believes that the FCC’s proposal to require manufacturers to consider the Access Board’s 18 point checklist on a product-by-product basis does not leave manufacturers sufficient discretion to achieve meaningful gains in accessibility. TIA therefore strongly supports consideration of the 18 point checklist across an entire product line, as opposed to each and every product. In practice, this would mean manufacturers would attempt to provide, for example, at least one product in a product line that incorporated accessibility features for individuals with hearing impairments, at least one product that incorporated accessibility features for individuals with vision impairments, at least one product for individuals with mobility impairments, and so on.

A product line approach is based on the practical reality that no one product can be accessible to everyone; it will, in TIA’s view, maximize the resources that are dedicated to accessible product design and development, as opposed to documentation and defending complaints.

TIA commends the FCC for recognizing that, in some circumstances, a manufacturer should be deemed in compliance with Section 255 if it makes a “similar product”

⁹ *NPRM* ¶ 170 (emphasis added).

that is accessible.¹⁰ Rather than placing primary emphasis on a *defense*, which will come into play only after a complaint is filed, the FCC should recognize the legitimacy of a product line approach to compliance “up front” in defining the scope of manufacturers’ obligations under Section 255. Manufacturers will be reluctant to rely upon an uncertain similar product defense and therefore are unlikely to adopt flexible approaches to increasing accessibility. Instead, manufacturers will take the more certain product-by-product approach and argue that it was not “readily achievable” for at least some functional limitations in virtually every case.

If the FCC were to adopt an “up front” approach to Section 255 that permitted each manufacturer to provide a range of functionally equivalent, comparably priced products that are accessible to those with different disabling conditions, the FCC would create incentives for product differentiation, which is critical to increased accessibility. A product line approach to compliance, which recognizes and endorses the need for manufacturers to exercise discretion to increase accessibility, permits greater flexibility for a manufacturer to work within the limits of what is “readily achievable.” A product line approach would permit a manufacturer to include more accessibility features to accommodate a particular type of disability into selected products. For example, a manufacturer seeking to provide access to persons with partial hearing loss could include enhanced audio, a speaker jack, and a vibrating feature in a few cellular phones, rather than provide enhanced audio only in every phone. Such an approach might be preferable to consumers – both consumers with disabilities *and* non-disabled consumers who need similar features, because, for example, they work in a noisy environment.

¹⁰ *See id.*

In this way, a product line approach to compliance could result in the provision of more meaningful levels of access for particular functional limitations in a targeted group of products, rather than a very superficial level of access in virtually all products. This example demonstrates why the FCC should avoid adopting the excessively inflexible approach to accessibility contained in the *NPRM*.

B. The FCC’s Proposal To Require A Product-By-Product Assessment Is Inconsistent With The Practical Reality That No Single Piece Of CPE Can Be Accessible To Everyone.

Throughout the Section 255 implementation process, manufacturers, persons with disabilities, the Access Board, and the FCC have acknowledged that it is not possible now, and probably not ever, to manufacture a piece of CPE that is accessible to every person with a disability. Different functional limitations generate different, potentially conflicting accessibility needs, and even within a single disability, access needs can vary widely. Moreover, as a practical matter, universal access cannot be accomplished “without much difficulty or expense,” and therefore, is neither “readily achievable” nor required by Section 255.¹¹ Consequently, as the TAAC recognized, “because no single interface design will accommodate all disabilities, companies **must use discretion in choosing** among accessibility features.”¹²

While recognizing that universal access is practically impossible, the FCC has essentially defined the accessible telecommunications equipment and CPE as a universally accessible product. The FCC proposes to adopt the definition of accessible developed by the

¹¹ 42 U.S.C. § 12181(9) (definition of “readily achievable”).

¹² *NPRM* ¶ 15 (citing TAAC Final Report § 5.2.1 at 20) (emphasis added).

Access Board.¹³ The Access Board’s 18 point checklist definition relates to the accessibility of product inputs, outputs, displays, mechanical and control functions for a variety of functional limitations and combinations of functional limitations.¹⁴ Under the Access Board’s definition of accessible each of the 18 items on the checklist is mandatory, requiring a manufacturer to perform an independent “readily achievable” calculus for each item.¹⁵

The FCC proposes to adopt this definition and to apply it to each and every product, even though it is not “readily achievable” now, and probably not ever, for a manufacturer to make a single piece of telecommunications equipment or CPE that satisfies this definition of accessible.¹⁶ TIA supports use of the 18 point checklist; however, it believes the application of the checklist over an entire product line is the only realistic approach to achieving overall accessibility.

C. The FCC’s Proposal Requires Manufacturers To Defend, Through A Series Of Piecemeal Complaints, Their Inability To Achieve The Impossible – A Universally Accessible Product.

¹³ *NPRM* ¶¶ 74-75; Access Board Guidelines §§ 1193.41, 1193.43.

¹⁴ Access Board Guidelines §§ 1193.41, 1193.43.

¹⁵ *See NPRM* ¶ 75 (requesting comment on this proposal). TIA proposes an alternative definition of accessible in Section III.B.4. *infra*. TIA’s alternative definition, though preferable to that proposed by the FCC, alone does not remedy the problem of forcing manufacturers to defend their inability to achieve the impossible. Taken together, TIA’s proposed definition of accessible and a product line approach to compliance could remedy this problem.

¹⁶ For wireless CPE, such as cellular phones and pagers, for example, universal access would be extremely difficult, if not impossible. The popularity of these products depends upon portability and compactness. Even if it were technologically possible to design a universally accessible wireless product, it is virtually certain that incorporating accessibility features into that product to accommodate all disabilities would fundamentally alter the nature of that product by fundamentally increasing its size. Such a fundamental alteration would not be required by Section 255. *See* Section III.D.4., *infra*.

In spite of the unanimous recognition that, as a practical matter no product can be accessible to everyone, and that manufacturers will need to exercise discretion in choosing (a) among features to enhance access; and (b) the products into which they are incorporated, under the FCC’s proposal, manufacturers remain vulnerable to complaints about the accessibility of every product to every person with every disability. While recognizing that manufacturers cannot produce universally accessible products, the FCC’s proposal would permit a series of piecemeal complaints based on different functional limitations and needs that would effectively require manufacturers to defend their inability to achieve the impossible – a universally accessible product – not only once, but over and over again.

Under this regime, manufacturers, even those who attempt to comply with Section 255 in good faith, are constantly on the defensive. A manufacturer receives no safe harbor from complaints for doing what needs to be done to increase access – exercise discretion to include features that enhance access into different products where “readily achievable.”

By making manufacturers vulnerable to complaints about the alleged inaccessibility of every product to every functional limitation, the FCC’s proposal maximizes the number of complaints that can potentially be filed. Since a manufacturer will need to defend its product design decisions concerning what is “readily achievable” for all functional limitations for every product, the FCC’s proposal similarly maximizes the amount of documentation that a conscientious manufacturer will, as a practical matter, be required to keep to defend itself.¹⁷

¹⁷ Without question, the five day “fast-track” complaint procedure proposed by the FCC, *see NPRM* ¶ 126, will dictate that a manufacturer maintain files of documentation in order to respond to any complaints forwarded by the FCC in a timely manner. The fast-track process, discussed in Section V.A. *infra*, highlights the inaccuracy of the FCC’s tentative conclusion that the proposed rules impose no information collection requirements other than designation of a point of contact. *See NPRM*, App. E (Initial Regulatory Analysis); *see also* SPRI Study. As TIA argued in its comments on the Access Board’s *NPRM*, each of the 18 accessibility criteria on the

(Continued ...)

Consequently, the FCC's proposed approach, which requires manufacturers to assess whether each of the 18 accessibility criteria are "readily achievable" for each product, is excessively burdensome.

In contrast, the product line approach to compliance, advocated by TIA and other manufacturers, recognizes the practical reality that no product can be accessible to all functional limitations, and permits more resources to be devoted to accessibility rather than to documentation of compliance.

D. The ADA Not Only Supports, But Compels The FCC To Adopt The Product Line Approach To Compliance Advocated By TIA And Other Manufacturers.

As TIA has argued throughout these proceedings, the ADA – which is referred to in both the text and the legislative history of Section 255 – provides strong support for the FCC to interpret Section 255 up front to require each manufacturer to provide a range of functionally equivalent, comparably priced products that are accessible – in other words, to produce a representative sample of accessible products – rather than to require that every product be "accessible," if "readily achievable." Under this regime, compliance would be assessed based upon the accessibility of product lines or families.

checklist will surface at each decision-making crossroads in the product design, development and fabrication processes. A prudent manufacturer will want to document the reasons why any action that had an impact on accessibility was taken to show that it had done what was readily achievable to promote access or that access could not readily be achieved. The FCC's tentative refusal to recognize these significant documentation costs, implicitly required by the *NPRM*, permits the FCC to avoid asking the question whether such documentation costs should be considered in determining what is readily achievable, and to ignore the practical reality that the diversion of limited resources to documentation and defense will inevitably reduce the resources available to provide access.

The FCC has the authority to interpret Section 255 to require accessibility across product lines rather than for each product. The telecommunications and CPE “equipment” referred to in Section 255(b) can be interpreted as either singular or plural. If “equipment” is interpreted as being singular, this would suggest that each telecommunications product would need to be accessible; whereas an interpretation of the equipment as plural would suggest that Section 255 should apply to groups or families of products.

To resolve this textual ambiguity, the FCC should look to the ADA, which strongly supports defining the scope of Section 255 to apply to families or groups of products. Both the courts and the government agencies responsible for implementing the ADA have recognized that proper application of the “readily achievable” definition, will, in some circumstances, result in disabled consumers having accessibility but fewer choices than the general public.

As TIA has repeatedly pointed out, the ADA regulations related to fixed seating in public theaters and stadiums, and to hotel rooms, demonstrate the reality that providing access is not inexpensive, and that the “readily achievable” definition does not require that every seat or room be accessible.¹⁸ These regulations demonstrate that *access to facilities and services* is the

¹⁸ Under the guidelines promulgated by the Access Board, and adopted by the Department of Justice (“DOJ”), theater and stadium owners are not required to make every single seat wheelchair accessible. Department of Justice Standards for Accessible Design (“JDSAD”), 28 C.F.R., Part 36, App. A, § 4.33.3; 28 C.F.R. § 36.308, DOJ Preamble to Regulation on Non-Discrimination on the Basis of Disability (“DOJ Preamble”), 28 C.F.R. Part 36, App. B (commenting on § 36.308). Instead, the ADA has been interpreted to require that: (1) a certain percentage of accessible seats be provided; (2) the accessible seats must be integrated into the seats available to the general public; and (3) the accessible seating must be dispersed throughout the stadium or arena so that disabled patrons are offered the same general range of choices, including sight lines and price, that are available to the general public. *Id.*; *Paralyzed Veterans of America v. Ellerbe Beckett Architects & Engineers, P.C.*, 950 F. Supp. 393, 398-405 (D. D.C. 1996) (discussing these requirements and applying them to the MCI arena in the District of Columbia), *aff’d*, 117 F.3d 579 (D. C. Cir. 1997), *cert. denied*, 118 S. Ct. 1184 (1998).

ultimate goal, rather than access to a particular seat or hotel room. Similarly, TIA believes that *access to telecommunications service* is the goal of Section 255, rather than access to any particular model of pager or telephone.

Therefore, the ADA compels an interpretation of Section 255 that would permit manufacturers to provide a representative sample of accessible products, to the extent “readily achievable,” that would provide disabled consumers with the same general range of choices as non-disabled consumers, such as telecommunications functions, features, quality and cost. And, this interpretation of Section 255 will increase the quality of accessible products available in the marketplace over what would be achieved under a product-by-product approach.

III. DEFINITIONS.

In the *NPRM*, the FCC requested comment on its proposed definitions of a number of terms contained in Section 255.¹⁹ TIA comments on a number of definitions. First, for certain statutory terms, the FCC has relied upon definitions taken from the ADA.²⁰ TIA urges the FCC to adapt certain ADA definitions to the telecommunications context. This is necessary to address the differences between the ADA and Section 255. Unlike the ADA, which applies in a broad range of contexts, including employment and access to public accommodations, the disability access provisions of Section 255 apply to a very narrow range of activities by equipment manufacturers: the manufacture, production and design of telecommunications equipment and CPE.²¹ The definitions of certain terms used in the ADA are applied in a specific context –

¹⁹ See generally *NPRM* ¶¶ 35 - 123.

²⁰ See e.g. ¶¶ 70 (definition of disability), 97 (definition of readily achievable).

²¹ 47 U.S.C. § 255(a)(1).

generally the obligations of employers, government entities, and operators of public accommodations. TIA provides comment on how the principles embodied in these ADA definitions should be applied in the context of telecommunications services.

Second, for other statutory terms, the FCC has relied upon definitions provided by the Access Board.²² TIA believes these definitions are helpful; however, TIA provides comment on how these definitions might be revised to avoid certain undesirable consequences and negative incentives that may not be apparent to the Access Board or the FCC, and will not promote the primary goal of increasing accessibility.

A. The Definition Of "Disability," Incorporated By Reference From The ADA Should Be Interpreted To Include Only Those Persons With Functional Limitations That Affect Their Ability To Utilize Telecommunications.

In the *NPRM*, the FCC requested comment on its tentative conclusion that the definition of disability be adopted, without modification, from the ADA, as well as “additional ways of making the definition of ‘disability’ useful to consumers.”²³ In TIA’s view, the definition of disability must be interpreted to include only those persons with functional limitations that affect their ability to utilize telecommunications equipment and CPE. Such a definition would be more consistent with the ADA and the legislative history of Section 255. Moreover, unless the definition of disability is interpreted in this way, it will not be “useful” to industry, consumers, or the FCC in implementing Section 255.

²² See *NPRM* ¶ 75 (definition of accessible); 92 (definition of compatibility); 58-61 (definition of manufacturer).

²³ See *NPRM* ¶ 70.

1. By analogy, the ADA supports an interpretation of “disability” in the telecommunications context to include only those persons with functional limitations that affect their ability to use telecommunications.

The ADA defines the term disability to include those individuals with "a physical or mental impairment that substantially limits one or more . . . major life activities"; persons with "a record of such an impairment"; and persons "being regarded as having such an impairment."²⁴

The relevant major life activity for the purposes of Section 255 is the ability to utilize telecommunications equipment and services. Certainly, many disabilities, such as sight and hearing impairments, can substantially limit an individual's ability to access telecommunications equipment.²⁵ Other disabilities, however, may or may not limit an individual's ability to access telecommunications equipment.²⁶

Although it is estimated that approximately 50 million persons in the United States have some form or degree of disability, not all of these individuals are limited in their ability to use

²⁴ 42 U.S.C. § 12102(a)(2).

²⁵ *Cf.* 42 U.S.C. § 12102(a).

²⁶ For example, some wheelchair users, though “disabled” with respect to certain major life activities, probably do not have a functional limitation that impairs their ability to use telecommunications within the meaning of Section 255. And, if they are impaired in their ability to use telecommunications equipment, Section 255 may not be the remedy. As the FCC tentatively concludes in its *NPRM*, manufacturers and service providers cannot be accountable, for example, for the height of pay telephones, because they do not control placement of the phones. *See NPRM* ¶ 79. The absence of a remedy under Section 255, however, does not mean that a person in a wheelchair is without recourse for inaccessible phone placement. The ADA requires that pay phones in public accommodations be placed in positions that are accessible to persons in wheelchairs. *See* 28 C.F.R. Pt. 36, App. A; 49 C.F.R. Pt. 37, App. A. This example shows that the definition of disability can and should be narrowly interpreted in the Section 255 context to draw attention to the functional limitations on the ability to use telecommunications that are relevant to Section 255’s goals of accessible equipment and service, because the ADA provides protections for limitations on other “major life activit[ies].”

the telephone. Survey data compiled by the United States Census Bureau indicates that 3.1 million persons aged 15 years and older, representing approximately 1.6% of all individuals in that age range, either are unable to use the telephone or have difficulty doing so. Approximately one third of these 3.1 million persons are unable to use the telephone, while two-thirds have difficulty doing so. According to the Census Bureau, the remaining approximately 98.4 per cent of the population over the age of 15 years and 94 per cent of individuals with disabilities report having no difficulty using the telephone.²⁷

Unlike the ADA, which applies in a broad range of contexts, including employment and access to public accommodations, Section 255 applies only to a very narrow range of life activities – the use of telecommunications equipment and services. To the extent that people are substantially limited with respect to other major life activities, they are protected against discrimination by the ADA, not by Section 255.

TIA believes Section 255 should be interpreted to require manufacturers to provide equipment, to the extent “readily achievable,” that is accessible to individuals whose disabilities substantially limit their ability to use telecommunications. Thus, certain categories of disabilities that do not impact an individual’s ability to use telecommunications, as well as persons

²⁷ See U.S. Census Bureau Official Statistics Regarding the Disability Status of Persons <<http://www.census.gov/hhes/www/disable/sipp/disstat.html>>. TIA includes these statistics not to minimize the need to provide accessibility to individuals with disabilities that prevent them from access to telecommunications services, regardless of their number. TIA merely suggests that the number 50 million is overly broad. TIA further points out that the individuals with disabilities that prevent them from gaining access to telecommunications equipment have a wide variety of functional limitations. A product line approach to Section 255 will provide more meaningful access to this diverse group of individuals.

who have "a record of . . . an impairment" or who are "regarded as having . . . an impairment" which could be relevant in the ADA context, need not be considered for Section 255 purposes.²⁸

2. The legislative history supports an interpretation of “disability” that includes only those functional limitations that “substantially limit” a person’s ability to use telecommunications.

Similarly, the legislative history of Section 255 supports an interpretation of disability in the Section 255 context as applying only to functional limitations that affect a person’s ability to use telecommunications. The Senate Report, which borrowed from the ADA in the most detail, states that the Committee “intends the definition of disability to principally cover individuals with functional limitations of hearing, vision, manipulation, speech, or interpretation of information.” S. Rep. No. 104-23 at 52 (1995).²⁹ This list of functional limitations, though not exhaustive, is clear evidence of Congress’ functional approach to the definition of disability in the Section 255 context. Under this functional approach, the definition of disability should appropriately be focused upon and limited to those functional limitations that substantially limit a person’s ability to use telecommunications, the limitations that Section 255 requires manufacturers and service providers to consider and to the extent “readily achievable,” to overcome by providing access.

3. In order to be “useful” to manufacturers, service providers, consumers, and the FCC, the definition of “disability” must be focused on the functional limitations that “substantially limit” a person’s ability to use telecommunications.

²⁸ See 42 U.S.C. § 12102(a)(2).

²⁹ See also H. Rep. No. 104-204 at 14 (1995) (defining disability as “including individuals with functional limitations of hearing, vision, movement, manipulation, speech, and interpretation of information”); TAAC Final Report at 11-12 (quoting language from Senate Report).

A definition of disability is only useful to the extent that it clarifies manufacturers' obligations under Section 255. Accessibility and compatibility are an issue only for those persons who, because of functional limitations, face barriers in accessing telecommunications equipment and services. Section 255 requires manufacturers and service providers to remove those barriers, to the extent "readily achievable." A useful definition of disability would focus attention on the functional limitations that create those barriers to telecommunications. A definition of disability that includes a record or perception of an impairment, for example, provides no meaningful guidance to manufacturers and service providers. There is nothing that a manufacturer can do in the design, development or fabrication of telecommunications equipment to improve its accessibility to individuals with a record or perception of an impairment. Consequently, these components of the ADA definition are not useful in implementing Section 255.

The FCC's definition of disability also is overbroad in that it overstates the number of people with disabilities who face barriers in accessing telecommunications equipment and CPE. Manufacturers have already developed many products that have made telecommunications services more accessible, and thereby improved the quality of life, for many persons with disabilities. Some barriers remain. TIA's 900 member companies embrace their obligation under Section 255 to remove those barriers, to the extent "readily achievable," and expect that many of those barriers will fall as a result of the heightened efforts by individual member companies and collectively by industry, as well as technological developments that provide, for example, greater microprocessor processing power at decreasing costs. TIA also discourages the FCC from adopting an overbroad definition of disability, suggesting that there is a large, untapped market of people with disabilities for accessible equipment, because an overbroad definition lends itself to

concepts such as “cost recovery” which should not be considered in an FCC enforcement process.³⁰

B. The FCC Should Adopt A Definition Of “Accessible” That Minimizes The Amount Of Resources Diverted To Documentation And Maximizes The Accessibility Information Made Available To Consumers.

In the *NPRM*, the FCC proposes to adopt the definition of accessible adopted by the Access Board.³¹ The definition, an 18 point checklist, relates to the accessibility of product inputs, outputs, displays, mechanical and control functions for a variety of functional limitations.³² Under the Access Board’s definition of accessible, each of the 18 items on the checklist is mandatory, so that a manufacturer must perform an independent “readily achievable” calculus for each item on the checklist.³³ The FCC has requested comment on this proposal.³⁴

³⁰ See *NPRM* ¶ 115 (requesting comment on whether and how to consider cost recovery). The FCC has proposed the “expense” factor be evaluated in terms of a “net” figure, comparing the cost of a feature (including research and development, production and marketing costs) with the additional income the feature will provide. TIA disagrees with such an approach. First, the calculation of the net cost of a feature is highly speculative. The costs are concrete; they are paid by manufacturers upfront. By contrast, the additional income recovered is merely a projection. TIA disagrees with the consideration of cost recovery in a more fundamental way. If the market demands a certain feature, manufacturers respond by providing such a feature. Many accessibility features have, in the past, appealed to a broader market that includes non-disabled consumers and consequently have been included in more products because they appeal to consumers as a whole. For example, the vibrating feature on pagers, which provides access for persons with disabilities but was not designed for their benefit, is now included on most models because of its popularity with all consumers, disabled and non-disabled alike. As this example demonstrates, where cost recovery comes into play, the FCC does not need to regulate; the market will take care of accessibility features that increase the usability of products for all consumers.

³¹ *NPRM* ¶¶ 74-75; Access Board Guidelines §§ 1193.41, 1193.43.

³² Access Board Guidelines §§ 1193.41, 1193.43.

³³ Under the Access Board’s definition of accessible, each item on the 18 point checklist of accessible product functionality must be assessed independently. Access Board Guidelines 1193.41, 1193.43. The independent assessment that the Access Board appears to have in mind is

(Continued ...)

TIA believes that the Access Board’s definition of accessible has an important role to play in implementing Section 255. However, unless that definition is used differently, TIA believes the definition will divert excessive resources to compliance and will provide disincentives to manufacturers to provide persons with disabilities with the product accessibility information that they need to identify the products that meet their accessibility requirements.

With respect to the definition of accessible, TIA believes that the FCC should adopt an approach that minimizes the manufacturer resources diverted to compliance documentation and maximizes the ability of persons with disabilities to purchase products that meet their needs by making available information about product accessibility features.

1. The FCC’s proposed definition of “accessible” requires manufacturers to waste resources defending their inability to achieve the impossible: a universally accessible product.

TIA believes that the FCC’s proposed definition of accessible will require manufacturers to waste resources defending their inability to achieve what is practically impossible: a universally accessible product. As the TAAC recognized, “because no single interface design will accommodate all disabilities, companies **must use discretion in choosing** among accessibility features.”³⁵

The recognition that it is impossible to make a piece of telecommunications equipment or CPE accessible to every person with a disability is grounded upon several principles.

whether each of the 18 accessibility criteria, considered in isolation, is readily achievable and, therefore, required under Section 255. Under this regime, a conscientious manufacturer would need to document its decision whether it was readily achievable to satisfy each of the 18 criteria.

³⁴ *NPRM* ¶ 75.

³⁵ *NPRM* ¶ 15 (citing TAAC Final Report § 5.2.1 at 20) (emphasis added).

Most importantly, no single product can be accessible to everyone because different functional limitations generate conflicting accessibility needs. For example, multiple selectable access features would likely run afoul of the requirement that the product be accessible to persons with cognitive disabilities.³⁶ Further, universal accessibility is not “readily achievable” within the meaning of Section 255, because it is not technically feasible, or would fundamentally alter the nature of the equipment, or is simply too expensive.

In spite of the virtual universal recognition that no single piece of equipment can be accessible to everyone, that is how the Access Board defined, and the FCC proposes to define, accessibility. The Access Board’s “checklist” approach to the definition of accessible requires manufacturers to make each product accessible to each disability, if “readily achievable.” In other words, the manufacturer has to make the equipment accessible to every functional limitation on the checklist or be able to demonstrate that it was not “readily achievable” to do so.

Consequently, the proposed definition of accessible dictates that a manufacturer will be subject to complaints about the alleged inaccessibility of its equipment for every one of the functional limitations identified on the checklist. In essence, this approach leaves a manufacturer to defend, through a series of piecemeal complaints, its inability to accomplish the impossible, and what is not “readily achievable” – a universally accessible product. This approach is particularly problematic because, while recognizing that manufacturers must exercise discretion in incorporating accessibility features among various products, the FCC has failed to provide manufacturers with a “safe harbor” from complaints for doing what must be done - exercising discretion - to meet the needs of people with disabilities.

³⁶ Access Board’s Guidelines 1193.41(i).

By leaving manufacturers vulnerable to complaints about the accessibility of every product to every disability, the FCC’s proposed regime forces manufacturers to divert resources from providing access to documenting their decisions about what it and is not “readily achievable” and to defending themselves against complaints. TIA does not believe this approach will be helpful to consumers with disabilities. To date, both the Access Board and the FCC have failed to recognize the substantial expense that manufacturers will incur in documenting their decisions whether to incorporate access features based upon whether it was “readily achievable” to do so.³⁷ Even if these documentation costs continue to be ignored, the FCC cannot deny that manufacturers will incur substantial expenses in receiving and responding to complaints. TIA recognizes that complaints have a legitimate role in implementing Section 255 and that complaints may have merit. However, the FCC’s proposed definition of accessibility, which maximizes the number of complaints that can be filed, is fundamentally inconsistent with the manner that manufacturers can and must implement Section 255 by incorporating different access features across a range of products.

2. The FCC’s proposed definition of “accessible” ignores ADA precedent and incorrectly refuses to consider the cumulative cost of providing access to different disabilities in determining what is “readily achievable.”

Furthermore, the FCC’s proposed definition of accessible, which requires an independent “readily achievable” calculus for each functional limitation on the checklist, is not supported by Section 255 and is inconsistent with ADA precedent.

³⁷ For this reason, the FCC’s position that the proposed rules impose no documentation other than maintaining a point of contact is well off the mark. *See NPRM*, App. E, at E22 (Initial Regulatory Flexibility Act Analysis).

As a threshold matter, the language of Section 255 does not require that every piece of equipment³⁸ be accessible to every disability, if “readily achievable.” Rather, Section 255 requires that equipment be “designed, developed and fabricated to be accessible to and useable by individuals with disabilities, if ‘readily achievable.’” Section 255 refers to people with disabilities as a group, not on a disability-by-disability basis.

Moreover, in the ADA context, the Department of Justice, in its regulations implementing the ADA, recognized that the “readily achievable” definition did not mandate the immediate removal of all barriers.³⁹

The FCC’s proposed definition of accessible, which would require an independent “readily achievable” determination for each type of functional limitation, is fundamentally at odds with the ADA approach and with Section 255. The FCC’s proposed definition of accessible would improperly segment the Section 255 obligation so that manufacturers might be forced to do more than what is “readily achievable” or accomplishable without much difficulty or expense.⁴⁰ To avoid this, it is essential that the FCC’s rules permit manufacturers to consider the cumulative costs of accessibility features. Moreover, the FCC’s rules should not require manufacturers to incorporate features that fundamentally alter a product’s characteristics. Most importantly, TIA believes that requiring manufacturers to apply the Access Board’s 18 point checklist on a

³⁸ As TIA has previously pointed out, the “equipment” subject to Section 255 can be interpreted both in the singular and in the plural.

³⁹ DOJ Preamble, 28 C.F.R. Part 36, App. B (commenting on § 36.104) (indicating that it is “appropriate to consider the cost of other barrier removal actions as one factor in determining whether a measure is readily achievable.”). Regulations issued by the agency charged with administering a statute are entitled to considerable weight unless arbitrary and capricious or contrary to the statute. *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 844 (1984).

⁴⁰ 42 U.S.C. § 12181(9).

product-by-product basis would result in manufacturers being required to do more than what is “readily achievable.” If the FCC were to interpret the definition of accessible in this way, the FCC would be abusing its discretion.

3. The FCC’s proposed definition of “accessible” creates disincentives for manufacturers to provide accessibility information – information which would be helpful to consumers with disabilities.

By proposing to adopt the Access Board’s definition of accessible, the FCC creates disincentives for manufacturers to provide persons with disabilities with information about accessibility features. Manufacturers cannot create a product that is “accessible” under the Access Board’s definition; even if manufacturers focus on specific functional limitations, such as hearing impairments, the wide range of individuals with a given disability will effectively preclude manufacturers from representing that a product is accessible to individuals with that disability. Manufacturers will therefore be reluctant to provide accessibility information about their product, particularly in light of potential legal exposure they may face under Section 255.

Without specific, technical information about the nature of the accessibility features included in a piece of equipment, consumers with disabilities will not be able to insure that the product they are purchasing meets their highly individualized accessibility needs. This lack of information will, in turn, generate more complaints by persons with disabilities who have purchased the “wrong” product, e.g. a product that is not accessible to them.

4. TIA proposes an alternative definition of “accessible” that creates incentives for manufacturers to provide information about accessibility features to consumers, and recognizes that such features will be incorporated, to the extent “readily achievable,” across product lines and families.

As an alternative to the FCC's proposal to adopt the Access Board's definition of accessible, TIA proposes a definition that is more consistent with the scope and purpose of Section 255. TIA's proposal recognizes and is consistent with the reality that manufacturers must have discretion to incorporate access features across product lines, and be somewhat insulated from complaints for exercising this unavoidable discretion, because every product cannot be accessible to every person.

TIA's proposed definition would provide as follows:

“Accessible:” Telecommunications equipment and CPE is “accessible” to the extent that it enhances the ability of a person with a disability to use the telecommunications equipment or CPE by incorporating one or more of the following features or functionalities, to the extent readily achievable:

Input, control, and mechanical functions. Input, control, and mechanical functions shall be locatable, identifiable, and operable in accordance with each of the following, assessed independently:

- (a) **OPERABLE WITHOUT VISION.** Provide at least one mode that does not require user vision.
- (b) **OPERABLE WITH LOW VISION AND LIMITED OR NO HEARING.** Provide at least one mode that permits operation by users with visual acuity between 20/70 and 20/200, without relying on audio output.
- (c) **OPERABLE WITH LITTLE OR NO COLOR PERCEPTION.** Provide at least one mode that does not require user color perception.
- (d) **OPERABLE WITHOUT HEARING.** Provide at least one mode that does not require user auditory perception.
- (e) **OPERABLE WITH LIMITED MANUAL DEXTERITY.** Provide at least one mode that does not require user fine motor control or simultaneous actions.
- (f) **OPERABLE WITH LIMITED REACH AND STRENGTH.** Provide at least one mode that is operable with user limited reach and strength.
- (g) **OPERABLE WITHOUT TIME-DEPENDENT CONTROLS.** Provide at least one mode that does not require a response time. Alternatively, a response time may be required if it can be by-passed or adjusted by the user over a wide range.

(h) **OPERABLE WITHOUT SPEECH.** Provide at least one mode that does not require user speech.

(i) **OPERABLE WITH LIMITED COGNITIVE SKILLS.** Provide at least one mode that minimizes the cognitive, memory, language, and learning skills required of the user.

Output, display, and control functions. All information necessary to operate and use the product, including but not limited to, text, static or dynamic images, icons, labels, sounds, or incidental operating cues, shall comply with each of the following, assessed independently:

(a) **AVAILABILITY OF VISUAL INFORMATION.** Provide visual information through at least one mode in auditory form.

(b) **AVAILABILITY OF VISUAL INFORMATION FOR LOW VISION USERS.** Provide visual information through at least one mode to users with visual acuity between 20/70 and 20/200 without relying on audio.

(c) **ACCESS TO MOVING TEXT.** Provide moving text in at least one static presentation mode at the option of the user.

(d) **AVAILABILITY OF AUDITORY INFORMATION.** Provide auditory information through at least one mode in visual form and, where appropriate, in tactile form.

(e) **AVAILABILITY OF AUDITORY INFORMATION FOR PEOPLE WHO ARE HARD OF HEARING.** Provide audio or acoustic information, including any auditory feedback tones that are important for the use of the product, through at least one mode in enhanced auditory fashion (i.e., increased amplification, increased signal-to-noise ratio, or combination). For transmitted voice signals, provide a gain adjustable up to a minimum of 20 dB. For incremental volume control, provide at least one intermediate step of 12 dB of gain.⁴¹

⁴¹ The FCC technical specification for volume control, §68.317, see 47 CFR Part 68, currently requires a volume control with a minimum gain of 12 dB. On April 1, 1998, a joint TIA/MMTA letter was addressed to Geraldine Matise, Head of the Common Carrier Bureau, and supports industry understanding and interpretation of the requirements of §68.317. This interpretation is currently being used by both large and small manufacturers for equipment being designed today to meet the January 1, 2000 deadline for implementation of §68.317, as required by Part 68 of the FCC Rules.

In contrast, Appendix C of the *NPRM*, which contains a copy of §1193.43, paragraph (e), of the Access Board's Guidelines, released on February 6, 1998, requires manufacturers to

(Continued ...)

(f) **PREVENTION OF VISUALLY-INDUCED SEIZURES.** Visual displays and indicators shall minimize visual flicker that might induce seizures in people with photosensitive epilepsy.

(g) **AVAILABILITY OF AUDIO CUTOFF.** Where a product delivers audio output through an external speaker, provide an industry standard connector for headphones or personal listening devices (e.g. phone-like handset or earcup) which cuts off the speaker(s) when used.

(h) **NON-INTERFERENCE WITH HEARING TECHNOLOGIES.** Reduce interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) to the lowest possible level that allows a user to utilize the product.

(i) **HEARING AID COUPLING.** Where a product delivers output by an audio transducer which is normally held up to the ear, provide a means for effective wireless coupling to hearing aids.

Under TIA's proposal, accessible is defined in terms of features that perform accessibility-enhanced functions, utilizing the criteria developed by the Access Board.⁴²

provide a gain adjustable up to a minimum of 20 dB. This is a significant discrepancy from the point of view of designers of equipment trying to meet the FCC Part 68 deadline. TIA has previously submitted our comments regarding the technical challenge of implementing this 20 dB requirement.

In an attempt to test the feasibility of the requirement to provide a gain adjustable up to a minimum of 20 dB, a TIA member purchased and evaluated samples of the same 3 models of telephones that were used by the consultants referenced in the Access Board Guidelines, 36 CFR Part 1193 Section-by-Section Analysis portion of the preamble of §1193.43, paragraph (e), and frequently conferred with the consultants. The TIA evaluation of the phones revealed that, when measured according to §68.317 requirements, none of these phones could meet the requirement of the provision of a gain adjustable up to a minimum of 20dB. All of these phones demonstrated significant shortcomings in meeting other telephone performance standards. The performance shortcomings are likely due to the attempt of the manufacturers to meet the requirement of the provision of a gain adjustable up to a minimum of 20 dB. Therefore, TIA respectfully requests that the FCC resolve this discrepancy by reaffirming the requirements of Section 68.317 as the sole and correct interpretation of volume control requirements.

⁴² *NPRM* ¶¶ 74-75; Access Board Guidelines §§ 1193.41, 1193.43.

Although TIA's proposal, like the FCC's *NPRM*, incorporates the Access Board's guidelines for accessibility, TIA's proposal uses the guidelines in a different way. TIA's proposal uses the guidelines to identify those product features that enhance the accessibility of products for persons with disabilities. TIA believes that its approach has several advantages.

First, TIA's proposal, unlike the FCC's, encourages manufacturers to provide specific, technical information about the accessibility features included in products. Under the FCC's proposal, manufacturers cannot represent that a product is accessible even if it complies with Section 255 because it is impossible to make any product accessible to everyone.⁴³ A statement that a product is accessible, to the extent "readily achievable," provides no useful information to a person with a disability.

In contrast, under TIA's proposal, manufacturers are not constrained from making representations concerning how many decibels of audio gain a product can produce, the font size and typeface used on a display, the size of buttons on a keypad, or whether the product has a voice chip or a vibrating feature. In fact, under TIA's definition, manufacturers will be motivated to include information on the various features that "enhance" the ability of persons with disabilities to use their products. These are features that enhance the accessibility of products which can be described in specific technical terms useful to persons with disabilities. Generally, persons with disabilities are well informed about the performance criteria that a product must meet in order to be accessible to their unique functional limitations. TIA believes this specific information will likely be helpful in their purchasing. The FCC's proposed regime, while not

⁴³ *NPRM* ¶ 15 (citing TAAC Final Report § 5.2.1 at 20) (emphasis added).

precluding manufacturers from providing information about product features that enhance accessibility, fails to create any incentives for the provision of such information.

Second, TIA's proposal is consistent with both the limitations of the "readily achievable" standard and the practical reality that every product cannot be accessible to everyone. Under TIA's definition, each item on the Access Board's checklist would not be mandatory. Rather, a manufacturer would be required to do what was "readily achievable," a determination based upon, among other "readily achievable" criteria, the cumulative cost of accessibility features, as defined by the Access Board's guidelines, included in a product. In so doing, TIA's definition of accessible would apply the "readily achievable" standard in the same way as that term has been applied and defined in the ADA context.⁴⁴ Moreover, TIA's definition is consistent with the reality that it is not technically feasible, and therefore not "readily achievable," to have a universally accessible product. Instead, TIA's definition would recognize that manufacturers must exercise discretion in incorporating accessibility features across product lines. In addition, this approach would provide an incentive for manufacturers to differentiate products so as to provide truly meaningful access for different disabilities, rather than a very superficial level of access in virtually every product.

In this respect, TIA's approach is consistent with a similar product defense, which would provide a manufacturer a safe harbor from complaints as long as the manufacturer made another product with comparable functions, features, and price that was accessible to the complainant. Furthermore, by ensuring that persons with disabilities and other consumers have

⁴⁴ DOJ Preamble, 28 C.F.R. Part 36, App. B (commenting on § 36.104) (indicating that it is "appropriate to consider the cost of other barrier removal actions as one factor in determining whether a measure is readily achievable.").

the information to determine whether a product is accessible to them, TIA's approach would eliminate complaints based on lack of knowledge about available products.⁴⁵ In these two ways, TIA's proposed definition of accessibility would reduce the amount of manufacturer resources that are diverted to demonstrating compliance, while at the same time, encouraging increased accessibility.

C.

⁴⁵ Complaints will be reduced because persons with disabilities will have more precise information on what accessibility features are included in a product. This will reduce the likelihood that a consumer will purchase a product which is not designed to meet his or her disability.

TIA Supports the FCC’s Approach to The Definition Of “Compatibility” Yet Is Concerned that the Definition Will Not Promote Innovation and Places Too Great a Burden on Manufacturers to Achieve Compatibility.

Where accessibility is not “readily achievable,” manufacturers have an obligation under Section 255 to ensure that their telecommunications equipment and CPE are “compatible with existing peripheral devices or specialized customer premises equipment commonly used by persons with disabilities . . . if readily achievable.” Section 255 clearly contemplates that specialized CPE (“SCPE”) will continue to play a legitimate role in providing access to telecommunications for some persons with some disabilities. This continued role for SCPE could only be based on Congress’ implicit recognition that it will not be “readily achievable,” and therefore not required under Section 255, for manufacturers to provide access for some severe or unique functional limitations.

In the *NPRM*, the FCC suggests there is no need to distinguish between SPCE and peripheral devices; the FCC takes the position both should be defined as equipment and devices “commonly used to achieve access.”⁴⁶ The FCC further explains that “equipment used in direct conjunction with CPE, such as amplifiers for persons with hearing disabilities, or screen readers for persons with visual disabilities, would be considered either peripheral devices or specialized CPE[,] [while] . . . devices such as hearing aids, which have a broad application outside the telecommunications context, may be used in conjunction with peripheral equipment or specialized CPE, but are not themselves considered specialized CPE or peripheral devices under the 1996 Act.”⁴⁷

⁴⁶ *NPRM* ¶ 84.

⁴⁷ *Id.*

TIA supports the FCC's approach to defining specialized CPE and peripheral devices. TIA believes it is useful to clearly delimit the difference between CPE and specialized CPE, so that manufacturers will know their responsibilities under the Act. TIA agrees with the FCC that SPCE will continue to play an important role in providing access to telecommunications for some persons with some disabilities.

TIA believes, however, that compatibility between equipment in place is properly under the jurisdiction of the appropriate industry standard board rather than extensive regulation by the FCC. The FCC's proposed definition of compatibility, taken from the Access Board's guidelines,⁴⁸ will hinder innovation. Yet, despite the virtually universal recognition that technological innovation is needed in order to increase accessibility and compatibility for persons with disabilities, the FCC, like the Access Board, is heavily weighting its definition of compatibility towards outdated TTY technology.⁴⁹ Two of the five components of the FCC's proposed definition of compatibility relate to TTY compatibility.⁵⁰

The FCC "recognize[s] that . . . compatibility criteria need to be broadened to account for likely technological advances in both telecommunications and accessibility products."⁵¹ TIA agrees. Promoting technological innovation requires that the FCC not require manufacturers to expend limited resources available for enhancing accessibility to finding a way to

⁴⁸ See 36 C.F.R. § 1193.51.

⁴⁹ It has proven difficult to achieve compatibility between digital wireless technologies and TTYs, whose technology has not changed much since their introduction in the 1960s. TTYs are not yet compatible with most computer modems.

⁵⁰ *NPRM* ¶ 91.

⁵¹ *NPRM* ¶ 92.

make digital networks TTY compatible. To date, this compatibility has proven extremely difficult for digital wireless telephones.

As the FCC has recognized in other proceedings, digital technology is the wave of the future and will benefit all of the public. Specifically, digital technology has permitted enhanced access to telecommunications by persons with disabilities. Both alphanumeric paging (accessible to the hearing impaired) and the new narrowband PCS voice paging (accessible to the sight-impaired) utilize digital technology.

To promote new digital technology, the FCC has established a timetable for phasing in digital television broadcasting.⁵² Ultimately, the FCC's rulemaking will require virtually every household in America to purchase a new television set, because existing sets will be incompatible with the new digital technology.

For the same reason, the FCC should not perpetuate TTY technology by requiring compatibility. Rather, the FCC should consider phasing out the compatibility obligation for such outdated technologies. In fact, the FCC currently recognizes the need for innovation beyond the Baudot format used in TTYs. In its rules related to Telecommunications Relay Services, the FCC requires such services to be capable of communicating with both ASCII and Baudot formats.⁵³ In order to promote the technology that will ultimately increase access, the FCC should not simply look at which kinds of SCPE are subsidized by state and local governments,⁵⁴ but should create

⁵² See 63 Fed. Reg. 15,774 (April 1, 1998) (setting the year 2006 as the target date for the completion of the transition).

⁵³ 47 C.F.R. § 64.604(b)(1).

⁵⁴ See *NPRM* ¶ 90 (suggesting such a criterion for “commonly used”).

incentives, through its compatibility criteria, for the use of SCPE that is consistent with new telecommunications technologies.

TIA also is concerned that, under the *NPRM*, manufacturers of telecommunications equipment are required to bear too much responsibility for compatibility. Under the *NPRM*, the entire burden for achieving compatibility is placed on the manufacturer. TIA believes it is unrealistic to expect manufacturers to create compatible products on their own; the burden for achieving compatibility should be shared with manufacturers of SCPE and peripheral devices.

D. The FCC Should Adapt The Definition Of “Readily Achievable” To The Telecommunications Context.

“Readily achievable” is defined under Section 255 as “easily accomplishable and able to be carried out without much difficulty or expense.”⁵⁵ TIA whole-heartedly supports the FCC’s tentative decision to adapt the definition of “readily achievable,” incorporated by reference from the ADA, to the unique context of telecommunications.⁵⁶ Under the FCC’s proposed approach, “the ADA factors should guide, but not constrain . . . development of factors that more meaningfully reflect pertinent issues related to telecommunications equipment and services.”⁵⁷

In the *NPRM*, the FCC proposes a three-part framework for determining whether a particular telecommunications accessibility feature is “readily achievable”:

- Is the feature feasible?

⁵⁵ 47 U.S.C. § 255(a)(2) (referencing Section 301(9) of the ADA, 42 U.S.C. § 12181(a)).

⁵⁶ *NPRM* ¶¶ 98, 99.

⁵⁷ *NPRM* ¶ 98.

- What would the expense be of providing the feature?
- Given its expense, is the feature practical?⁵⁸

In the *NPRM*, the FCC requested comment on these proposed factors, especially their “practical implications,” and “effect on the development and marketing of accessibility features, on the pace of innovation, and on the administrative costs associated with implementation and enforcement measures.”⁵⁹

TIA agrees with many of the concepts that underlie the FCC’s proposed three-part approach. TIA wishes to highlight several points: first, TIA strongly supports consideration of technical feasibility in the “readily achievable” analysis; second, TIA believes that the cumulative costs of access features should be part of the consideration of the expense of providing accessibility; third, TIA endorses the FCC’s consideration of the practicality of accessibility features; and finally, TIA proposes that what is “readily achievable” be limited by one further concept: fundamental alteration.

1. Technical feasibility should be considered as part of the “readily achievable” analysis.

TIA supports the FCC’s recognition that the practical application of achievability in the context of telecommunications includes the concept of technical feasibility.⁶⁰ TIA commends the FCC for recognizing that technical feasibility is a distinct, express factor used in determining what is “readily achievable.”⁶¹ As a practical example, one TIA member discovered

⁵⁸ *NPRM* ¶ 100.

⁵⁹ *Id.*

⁶⁰ *NPRM* ¶ 101.

⁶¹ *See NPRM* at ¶ 102 (discussing Access Board’s decision not to recognize feasibility as a
(Continued ...)

the impact of the limits of technical feasibility in the context of the technical specifications for volume control. While the FCC technical specifications currently require a volume control with a minimum gain of 12 dB,⁶² the Access Board's Guidelines require manufacturers to provide adjustable gain up to a minimum of 20 dB. Evaluation of the same 3 models of telephones that were used by the consultants referenced in the Access Board's Guidelines revealed that the phones could not accommodate both the 20 dB standard and the other telephone performance standards required by the FCC.⁶³

TIA further agrees with the FCC's tentative conclusion that retrofitting of products that have already been introduced to market without certain accessibility features should not be required. As the Access Board and the TAAC recognized, the requirement that the technical feasibility of access features be reassessed every time a product is upgraded in a manner that substantially affects its functionality will ensure that accessibility features can be incorporated into products that remain popular in the marketplace for long periods of time.⁶⁴ TIA agrees with the FCC's tentative conclusion that technical feasibility should not be reassessed after a product is introduced to market.⁶⁵ The FCC's proposed rules should make it clear that because Section 255 imposes compliance obligations on the design, development, and fabrication of equipment and CPE, technical feasibility must be assessed at the time the design, development and fabrication process for a new product or a substantial upgrade for an existing product begins. Retrofitting

separate factor).

⁶² 47 C.F.R. § 68.317.

⁶³ See Section III.B.4., n. 40, *supra*.

⁶⁴ 36 C.F.R. § 1193.2; TAAC § 4.2.

⁶⁵ See *NPRM* ¶ 120.

products that have already begun the design process should not be required under any circumstances.⁶⁶ Any requirement to retrofit would waste limited compliance resources, delay product time to market, and slow the pace of innovation in a rapidly changing marketplace where products quickly become obsolete. Any enforcement strategies utilized by the FCC should be proactive rather than punitive, in order best to promote the goal of increasing the availability of accessible equipment and CPE in the marketplace.

2. The consideration of “expense” as part of the “readily achievable” analysis should include cumulative costs of features that enhance accessibility, as well as opportunity costs.

TIA agrees that consideration of the expense of providing accessibility features is a necessary part of the “readily achievable” analysis. TIA urges the FCC to include consideration of cumulative costs of accessibility features in that analysis. There is support for this approach in the ADA: in connection with the “readily achievable” analysis with respect to barrier removals, the Department of Justice has stated that “it is appropriate to consider the cost of other barrier removal actions as one factor in determining whether a measure is readily achievable.”⁶⁷

By contrast, the FCC’s proposal does not explicitly account for the costs of including other accessibility features in the “readily achievable” analysis. By adopting the Access Board’s definition, which appears to require an independent “readily achievable” evaluation for each accessibility feature, the FCC is downplaying the cumulative costs of accessibility features. This approach is unrealistic.

⁶⁶ *See id.*

⁶⁷ DOJ Preamble, 28 C.F.R. Part 36, App. B.

Additionally, TIA agrees with the FCC that it is appropriate to consider several other expenses in the “readily achievable” analysis. For example, there are significant opportunity costs associated with increasing accessibility features. Time and money spent developing accessibility features are necessarily diverted from other innovation. Moreover, accessibility features affect battery life, the size of a product and its memory. Finally, development of accessibility features is costly in terms of development time, which could delay introduction of new products into the market.

3. TIA supports consideration of “practicality” in the “readily achievable” analysis.

As the third prong of its “readily achievable” analysis, the FCC proposes consideration of the practicality of incorporating a particular accessibility feature.⁶⁸ The practicality consideration would include factors such as: (1) the resources available to meet the expenses associated with accessibility; (2) the potential market for the product or service; (3) the degree to which the provide would recover the cost of the accessibility feature; and (4) issues regarding product life cycles. TIA supports the consideration of practicality as part of the “readily achievable” determination. TIA believes the goals of accessibility cannot be divorced completely from practical realities in the marketplace; thus, practical considerations are appropriate. As TIA has noted, however, TIA disagrees that cost recovery is an appropriate consideration.⁶⁹

4. The concept of “fundamental alteration,” used in the ADA, should be modified to the telecommunications context and considered to insure that equipment and CPE remain consistent with the

⁶⁸ *NPRM ¶¶* 106-121.

⁶⁹ *See* Section III.A.3., *supra*.

fundamental characteristics of functionality and price required by the market segment that the products are designed to serve.

TIA asks the FCC to recognize that what is “readily achievable” is further limited by the concept of fundamental alteration, taken from the ADA. TIA proposes that Section 255 not be applied such that fundamental characteristics of equipment and CPE, which include functionality and price, are required to be changed by accessibility features.

In the preamble to the ADA regulations, DOJ determined that fundamental alterations were not required by the “readily achievable” definition. DOJ reached this conclusion by drawing a comparison to the "undue burden" standard, which defines the scope of a public accommodation's duty to provide "auxiliary aids and services" such as sign language interpreters, text telephones, and assistive listening devices. The undue burden and “readily achievable” determinations depend upon the same factors; however, the undue burden standard requires a higher level of effort to achieve compliance than does the “readily achievable” definition.⁷⁰ Since the undue burden standard excuses actions that would fundamentally modify goods and services, DOJ concluded that the “readily achievable” definition would excuse such actions as well, even though this is not specifically stated in the regulations.⁷¹

The Access Board, in its guidelines, recognized that the concept of fundamental alteration was useful and appropriate in determining whether accessibility is “readily achievable.” The Access Board acknowledged that under the “readily achievable” standard, fundamental alteration of products to provide access is not required.⁷² Although the FCC’s proposal alludes to

⁷⁰ 28 C.F.R. Part 36, App. B (commenting on § 36.104).

⁷¹ *See id.*

⁷² Appendix to 36 C.F.R. Part 1193 (comment 3 on the definition of readily achievable, § .3).

the fundamental alteration concept,⁷³ the FCC does not expressly recognize this factor from the ADA. TIA believes that fundamental alteration should be expressly recognized because it will play a critical role in determining what is “readily achievable” for telecommunications.

In TIA’s view, the concept of fundamental alteration should be applied in the telecommunications context to identify the fundamental characteristics of a product that it is not “readily achievable” to change, including core features and price desired by the target market. TIA recognizes that expense is one of the statutory elements of the “readily achievable” definition. In TIA’s view, however, the incremental cost of incorporating accessibility features into a product will not be useful unless that cost is placed in context so that its ready achievability can be assessed.

TIA’s proposal is grounded upon the practical reality that telecommunications equipment and CPE are not designed, developed or fabricated in the abstract, but for a specific market segment that wants certain core features and is willing to purchase the product as long as the price falls within a very narrow range. Just as the inclusion of large buttons on the smallest wireless handset would fundamentally alter the nature of the product, which depends upon its compactness and portability for its popularity, so too, the inclusion of accessibility features that increase the price of the product beyond the price that the target market is willing to pay would fundamentally alter the nature of that product by making it unsuitable for its target market. For the same reason, manufacturers should not be required to eliminate core features that the target market wants in order to incorporate accessibility features, because the omission of those core features would similarly render the product unsuitable for its target market.

⁷³ See *NPRM* ¶¶ 104, 106, 113, 114.

TIA's proposal would not relieve manufacturers of all obligations to include accessibility features into their products. Manufacturers will often be able to incorporate features that enhance accessibility without increasing the product price beyond what the target market will bear. Manufacturers should have the discretion to choose which access features to incorporate across a line of products with comparable features and price. This approach is most likely to promote increased access.

For example, suppose that a manufacturer is designing a cellular handset for the market segment that wants a wireless phone that also functions as a vibrating pager with caller ID. Market research demonstrates that the target market segment for this product consists primarily of factory workers in noisy environments. As part of its evaluation of accessibility features, the manufacturer considers enhanced audio for the telephony function and a zoom feature which permits increased font size on the caller ID visual display for the sight impaired. If the manufacturer includes the zoom feature, the name of the caller comes up on the display first, and then after a button is pressed, the number called from appears. The manufacturer learns, however, that most of the target market, which works in a potentially dangerous factory environment, would not want the handset/pager if it takes an additional 10 seconds to scroll through a second screen of large type because of the zoom feature on the caller ID function.

Under these circumstances, the zoom feature should not be considered "readily achievable" for the product because it would make the product unsuitable for the market that it was designed to meet. The manufacturer should be permitted, however, to incorporate the zoom feature into a smaller subset of the handset/pager product line that is targeted at another market segment that would not be deterred from buying the product because of this feature.

E. Manufacturer.

1. Responsible Entity.

In the *NPRM*, the FCC proposes to evaluate whether it is “readily achievable” to incorporate a particular telecommunications accessibility feature into telecommunications using three factors: (1) feasibility; (2) expense and (3) practicality.⁷⁴ With regard to the element of practicality, the FCC properly notes that the “resources” of a manufacturer should be taken into consideration.⁷⁵ TIA agrees with the FCC’s tentative view that the “resources reasonably available” to achieve accessibility should be taken into account and that this should be done on a case by case basis.⁷⁶ TIA disagrees, however, that the FCC should use the concept of “legal responsibility” combined with two rebuttable presumptions to make the judgment. The presumption of the resources of a parent being available to a subsidiary, affiliate, or division will unnecessarily increase the complexity of the complaint process since many complaints will get bogged down in “rebutting” the two FCC proposed presumptions.

Large and small manufacturing entities utilize a variety of organizational structures to manufacture products. Some companies choose to have separate subsidiaries manufacture particular products or families of products while others choose to set up different divisions within a single corporate structure. Decisions on how to structure a manufacturing organization are costly and complex decisions made without regard to regulatory compliance. The parent of a subsidiary or division may ultimately be “legally responsible” for a product. However, all decisions and responsibility (including financing, product support, marketing support and similar

⁷⁴ *NPRM* ¶ 100.

⁷⁵ *NPRM* ¶ 109.

⁷⁶ *Id.*

matters) relative to whether a product is manufactured, or if manufactured, with what features and functionalities will be included in the product, will often be made by a subsidiary or affiliate.

Thus, while TIA has no objection to making case by case determinations on whether the resources of a parent should be included in evaluating whether it was “readily achievable” to incorporate a given accessibility function, it does not believe that there should be a presumption in that regard. In the alternative, the FCC should provide manufacturers and others with specific guidelines on what factors will be used in evaluating whether the resources of a parent or affiliate will be considered in making the decision.

2.

“Final Assembler.”

TIA agrees that the definition of final assembler includes all equipment marketed in U.S., regardless of national origin. For multiple source equipment, TIA supports the final assembler approach, i.e., the entity that introduces the product into the market for sale in its final form. In its December, 1997 proposal to the Commission, TIA proposed to define a manufacturer of telecommunications equipment or CPE as:

The division, business unit, subsidiary, or other business entity that is responsible for introducing, directly or through distribution agreements, related telecommunications equipment or CPE into the United States marketplace in its final form or has direct control over the design and development, fabrication, and costs and expenses associated with such products.

However, in those instances where an entity brands and markets the equipment of an unrelated manufacturer as its own, the consumer has no way of knowing the identity of the actual assembler of the product should the consumer wish to contact the manufacturer or file a complaint. In those instances, it would be easiest if potential complainants and the Commission can contact the entity whose brand name appears on the product. The responsibility for responding to a Section 255 contact or any liability resulting from noncompliance can be apportioned by the firms contractually prior to introducing the product into the market. This approach will permit consumers to continue to have a single point of contact for any piece of equipment in the market.

IV.

THE FCC SHOULD INTERPRET SECTION 255 IN A MANNER THAT IS CONSISTENT WITH THE LIMITATIONS ON THE FCC’S AUTHORITY REFLECTED IN THE COMMUNICATIONS ACT.

A. Section 255 Applies Only to Providers of Telecommunications Services and Not Information Services.

In the *NPRM*, the Commission correctly observes that compliance with Section 255(c) is required only by telecommunications providers supplying “telecommunications services.”⁷⁷ Providers supplying non-telecommunications services (*i.e.*, services not meeting the statutory definition) are not subject to Section 255. Indeed, the Commission’s interpretation is consistent with the language of Section 255(c), which refers to a provider of “telecommunications service.”⁷⁸

It would be inconsistent with both the legislative history and language of the Telecommunications Act of 1996 to apply Section 255(c) to providers of non-telecommunications services, such as providers of cable services or the private mobile radio service (“PMRS”).⁷⁹ First, in Section 255, Congress relied on well-defined terminology to delimit the section’s coverage.⁸⁰ Thus, telecommunications services are specifically covered, while information services are not.

⁷⁷ *NPRM* at ¶ 46.

⁷⁸ Section 255(c) states: “A provider of telecommunications service shall ensure that the service is accessible to and usable by individuals with disabilities, if readily achievable.” 47 U.S.C. § 255(c). “The term ‘telecommunications service’ means 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.” 47 U.S.C. § 153(46).

⁷⁹ *NPRM* at ¶ 46.

⁸⁰ *See* 47 U.S.C. § 255(c): “Telecommunications Services – A provider of telecommunications service shall ensure that the service is accessible to and usable by individuals with disabilities, if readily achievable.”

Additionally, Section 255, which is located in Title II of the Act which applies to common carriers, was not intended to apply to providers of non-telecommunications services or a non-common carrier service. Had Congress intended to apply Section 255 to both common carriers and non-common carriers, it would have placed the language of current Section 255 in Title I of the Act, *i.e.*, “General Provisions.” Thus, by including Section 255 in Title II, Congress decided to limit its access requirements to common carriers and providers of telecommunications services.

Consistent with this interpretation of the statutory language, TIA also supports the Commission’s initial conclusion that “[i]nformation services’ are excluded from regulation” under Section 255.⁸¹ Indeed, a conclusion that information services are covered by Section 255 would directly contradict the conclusions recently reached by the Commission in its report to Congress concerning Universal Service.⁸² In this Report, the Commission addressed “head-on” the issue of whether information services were a type of telecommunications service, as defined under the Telecommunications Act of 1996. In the Commission’s words:

After careful consideration of the statutory language and its legislative history, we affirm our prior findings that the categories of “telecommunications services” and “information service” in the 1996 Act are mutually exclusive.⁸³

⁸¹ *Id.* at ¶ 36.

⁸² *See Federal-State Joint Board on Universal Service, Report to Congress, FCC 98-67 (rel. April 10, 1998)(“Universal Service Report”).*

⁸³ *Id.* at ¶ 39. “The language and legislative history of both the House and Senate bills indicate that the drafters of each bill regarded telecommunications services and information services as mutually exclusive categories.” *Id.* at ¶ 43. As the Commission observed in the *Universal Service Report*, the House Bill explicitly stated: “The term ‘telecommunications service’ does not include an information service.” *Id.* Further, the Senate Report “stated in

(Continued ...)

Further, the Commission concluded that subjecting information services to Title II constraints, which are reserved for telecommunications carriers providing telecommunications services, would be detrimental to the information service industry:

We note that our interpretation of “telecommunications services” and “information services” as distinct categories is also supported by important policy considerations. An approach in which a broad range of information service providers are simultaneously classed as telecommunications carriers, and thus presumptively subject the broad range of Title II constraints, could seriously curtail the regulatory freedom that the Commission concluded in *Computer II* was important to the healthy and competitive development of the enhanced-services industry.⁸⁴

An interpretation that “information services” are covered by Section 255 would contradict the Commission’s conclusion in the *Universal Service Report*. Such an interpretation would also subject information services to an obligation under Title II – a result the Commission explicitly sought to avoid. Further, subjecting information services to Section 255 would place in doubt the Commission’s conclusions in other proceedings with regard to the regulatory distinction between information and telecommunications services.⁸⁵ The Commission should endeavor to

unambiguous terms that its definition of telecommunications ‘excludes those services. . . that are defined as information services.’ *Id.*

⁸⁴ *Id.* at ¶ 46. “Notwithstanding the possibility of forbearance, we are concerned that including information service providers within the ‘telecommunications carrier’ classification would effectively impose a presumption in favor of Title II regulation of such providers.” *Id.* at ¶ 47. “The classification of information service providers as telecommunications carriers, moreover, could encourage states to impose common-carrier regulation on such providers.” *Id.* at ¶ 48. Clearly, the Commission regards information services as distinct from the common carrier telecommunications services subject to Section 255.

⁸⁵ *See, e.g., Amendment of the Commission's Rules and Regulations Governing Pole Attachments*, Report and Order, Further Notice of Proposed Rulemaking, CC Docket No. 97-151 at ¶ 33 (rel. Feb. 6, 1998) (finding that Internet access service does not constitute a telecommunications service); *In the Matter of Implementation of the Telecommunications Act of*

(Continued ...)

remain consistent in its interpretation of the terms “telecommunications services” and “information services.”

Regardless of whether Congress had “broad objectives” for Section 255 or not, the language it used in setting forth those objectives clearly indicates that its scope is limited to “telecommunications services.”⁸⁶ If Congress wanted information services to be covered, it would have said so explicitly. Instead, it only used the term “telecommunications services,” a term it has defined separately from “information services.”

B. Equipment Must Comply With Section 255 Only to the Extent It is Being Used In Connection with Telecommunications Services.

TIA agrees with the Commission that it is important to delineate precisely what kinds of telecommunications equipment and CPE are subject to the requirements of Section 255. It is imperative that clear distinctions are made so that manufacturers know their obligations. Accordingly, TIA supports the Commission’s conclusion that equipment manufactured for services that “[do] not appear to fall within the scope of Section 255” (*i.e.*, non-telecommunications services or non-common carrier services) does not need to be manufactured in accordance with Section 255(c).⁸⁷

1996; Telecommunications Carriers' Use of Customer Proprietary Network Information and Other Customer Information; Implementation of the Non-Accounting Safeguards of Sections 271 and 272 of the Communications Act of 1934, as Amended, FCC 98-27 at ¶ 46 (rel. Feb. 26, 1998) (“Commission precedent has treated 'information services' and 'telecommunications services' as separate, non-overlapping categories, so that information services do not constitute 'telecommunications' within the meaning of the 1996 Act.”).

⁸⁶ *NPRM* at ¶ 42 (“Given the broad objectives Congress sought to accomplish by its enactment of Section 255, we seek comment on whether Congress intended Section 255 to apply to a broader range of services.”).

⁸⁷ *Id.* at ¶ 53.

TIA notes that the term “telecommunications equipment” is defined by Congress as equipment that is used for telecommunications services:

The term ‘telecommunications equipment’ means equipment, other than customer premises equipment, used by a carrier to provide **telecommunications services**, and includes software integral to such equipment (including upgrades).⁸⁸

Further, in TIA’s view, the Commission correctly refers to CPE with respect to “telecommunications services” as well.⁸⁹ As a result, if the subject equipment is not used for telecommunications services or common carrier services, then it is not “telecommunications equipment” or “CPE” and is not subject to the access requirements of Section 255(b).⁹⁰ For

⁸⁸ See 47 U.S.C. § 153(45) (emphasis added).

⁸⁹ See *NPRM* at ¶ 49 (“In short, to the extent end users must interact with equipment to use telecommunications services, Section 255 applies.”). Indeed, the term CPE was created and has traditionally been used in the context of equipment used to facilitate common carrier services. See, e.g., *In the Matter of Amendment of Section 64.702 of the Commission’s Rules and Regulations (Second Computer Inquiry)*, Memorandum Opinion and Order on Further Reconsideration, 88 F.C.C.2d 512 n.1 (1981)(“For purposes of this docket, customer-premises equipment includes all equipment provided by common carriers in the fifty states, the District of Columbia, Puerto Rico and the Virgin Islands and located on customer premises except over voltage protection equipment, inside wiring, coin-operated or pay customer.”).

⁹⁰ As proposed by TIA in its comments in the Commission’s CC Docket No. 96-254 proceeding to implement section 273 of the 1996 Act, the Commission should establish a clear rule that the development of any firmware or software for hardware that “performs the function(s) of telecommunications equipment” should be considered “integral” to that equipment and therefore included in the definition of telecommunications equipment for purposes of Section 255. The *NPRM* correctly points out that the definition of CPE does not include software and that software, marketed separately from CPE, to be used in CPE is not subject to section 255. *NPRM* at ¶ 56. TIA agrees that a manufacturer is responsible for the functional accessibility of CPE, where readily achievable, to the extent it serves a telecommunications function. The role that software in CPE plays to create accessibility should be left to the manufacturer. A manufacturer should be able to make its CPE accessible, when readily achievable, by whatever means is most practicable. Whether a modification to software is the most appropriate way to achieve accessibility, or some alternative approach is preferable, should be left to the manufacturer’s discretion.

example, equipment manufactured exclusively for use in connection with PMRS (*i.e.*, a non-telecommunications service) should not be covered by Section 255(b). While TIA's members are prepared to produce its telecommunications equipment and CPE in compliance with the Telecommunications Act of 1996 , it agrees with the Commission that equipment manufactured for non-telecommunications services does not need to be produced in conformity with Section 255.

C.

The Intent of the Manufacturer Must Be Considered in Determining Whether to Apply Section 255(c) to “Multi-Use” Equipment or Equipment That is Used Incidentally for a Telecommunications Service.

As to equipment that is capable of performing both telecommunications services and non-telecommunications services (*i.e.*, multi-use equipment), the Commission proposes to apply Section 255 “only to the extent the equipment serves a telecommunications function.”⁹¹ Related to this proposal, the Commission seeks comment on the obligation of a manufacturer which produces equipment intended for a non-telecommunications service application, but finds that the equipment is being used in connection with a telecommunications service subject to Section 255.⁹² For example, the Commission notes, “unlicensed devices regulated under Part 15 of the Commission’s Rules may be used as part of a telecommunications service, as where a wireless local area network is interconnected with the public switched network and offered to subscribers for a fee.”⁹³

TIA believes that the appropriate test for deciding whether multi-use equipment, such as the unlicensed Part 15 device cited by the Commission, must comply with Section 255 rests with the intent of the manufacturer in producing the equipment. TIA does not disagree with the Commission that if an equipment manufacturer produces a device intended to be used with both telecommunications *and* non-telecommunications services, the device is subject to Section 255 to the extent it is used to provide telecommunications services.

The Commission must recognize, however, that it is theoretically possible for most equipment that is designed for (and is expected to be used solely with) a private network also to

⁹¹ *NPRM* at ¶ 53.

⁹² *Id.*

⁹³ *Id.* at ¶ 53 n. 117.

be used to provide a telecommunications service. Accordingly, if the Commission applies a “possibility” standard (*i.e.*, if it is “possible” to use a particular device with a telecommunications service then it must be subject to Section 255), virtually all equipment that transmits and receives data would be subject to compliance with Section 255, regardless of whether the device was originally manufactured for use with a non-telecommunications service or not.

For example, a telephone not registered under Part 68 of the Commission’s Rules can be legally connected to a private telephone network, such as an intercom system or a retirement community local area telephone network. So long as neither the telephone itself nor the network is being used in connection with a telecommunications service, Section 255 would not apply. If, on the other hand, the telephone were even capable of being removed from the private network and used in connection with a telecommunications service, it would be under the “possibility” test fully subject to Section 255.

The manufacturer of such a telephone, and analogous devices, is faced with a dilemma. It must either produce the telephone, intended solely for connection to a private network, with the appropriate Section 255 features and compete against other comparable telephones in the marketplace, which are not subject to Section 255; or it must face the possibility that an action over which it has no control will require it to defend itself against a complaint alleging a violation of Section 255 by a user who, for example, interconnects an unregistered intercom telephone to the PSTN and uses it in connection with a telecommunications service.

This choice for manufacturers is not indicated in the legislative history underlying Section 255. Indeed, by its own terms the statute provides that telecommunications equipment and customer premises equipment need be designed and developed for compliance with Section 255 only if such compliance is “readily achievable.” TIA believes that designing and developing

devices to assure compliance under all imaginable circumstances, including misapplication and unintended incidental use, does not constitute “readily achievable” within the meaning of Section 255. As a policy matter, the difficulty and expense of conceiving all of these potential uses, as well as the expense associated with ensuring compliance of all equipment, including equipment for non-telecommunications services and telecommunications services, would be excessive and beyond the “readily achievable” standard.

TIA believes that a device manufactured with the primary intent for use with a non-telecommunications service should not be subject to Section 255, even if there is a conceivable use of the equipment with telecommunications services. It would be difficult, if not impossible, to expect every manufacturer to make *a priori* determinations regarding the potential for misapplication of devices intended solely for use in a private or non-telecommunications service environment. While TIA fully supports the purposes of Section 255, it strongly believes that it and other manufacturers should not be held responsible for unlawful or unintended applications of their products.

The Commission should not be concerned that equipment used with non-telecommunications services will not be accessible to persons with disabilities. While Section 255 of the Act may not apply to that equipment, the ADA places an affirmative obligation on employers to ensure that an alternative arrangement is made so that persons with disabilities are able to perform the essential functions of their positions.⁹⁴

V. IMPLEMENTATION PROCESS.

⁹⁴ 42 U.S.C. § 12112(b)(5)(A).

TIA agrees that the Commission's overarching goal for Section 255 implementation should be a process which ensures that more accessible telecommunications equipment and CPE is introduced into the marketplace. TIA also agrees that complaints should (1) be resolved with a minimum of government interference; (2) be responsive to those who are aggrieved by a lack of accessibility; and (3) efficiently allocate resources to avoid undue burdens being placed on the Commission, manufacturers and persons with disabilities.⁹⁵ Review of the proposals described in the *NPRM*, however, does not demonstrate that the Commission will accomplish its goal. Specifically, the proposed "fast track" complaint process does not provide consumers or manufacturers with sufficient opportunity or time to engage in meaningful dialogue which will reduce the number of informal or formal complaints filed under Section 255. The fast track process puts consumers and manufacturers in a defensive, litigious frame of mind from the outset which is neither conducive to the resolution of differences between consumers and manufacturers nor productive with regard to enhancing the overall accessibility of telecommunications and CPE.

A. Fast Track Process.

The Commission's fast track complaint process appears to have been modeled after an informal dispute resolution process ("DRP") process developed by TIA and discussed with the Staff of the Commission in December, 1997.⁹⁶ As will be described in detail below, the TIA DRP

⁹⁵ *NPRM* ¶ 124.

⁹⁶ At the request of the staff of former Chairman Hundt, TIA was requested to develop a proposal for implementing the Commission's obligations under Section 255. The proposal was designed to be a starting point for discussion between consumers and manufacturers in an attempt to reach consensus on issues related to Section 255. TIA's "Proposal for FCC Guidelines Implementing Section 255 of the Communications Act" and the accompanying "Explanation and

(Continued ...)

proposal is superior to the fast track process because it requires the parties to engage in a mandatory 60 day dispute resolution process before the FCC will even consider accepting a Section 255 informal or formal complaint. The 60 day process is sufficiently long to encourage dialogue between a person with a disability and a manufacturer which will lead to a better and more fully developed understanding of the nature of the problem a person with a disability has in using a given product.⁹⁷ The TIA proposal is likely to lead to resolution of a large number of non-frivolous, perceived violations of Section 255 without FCC intervention.

Under the Commission's fast track complaint process the Commission proposes that: (1) manufacturers be required to provide the FCC with a point of contact for inquiries and complaints relative to Section 255 issues; (2) potential complainants be "encouraged" but not "required" to first discuss an alleged lack of accessibility with a manufacturer; (3) standing need not be established to file a Section 255 complaint (fast track or otherwise); (4) no specific format be used for filing a Section 255 complaint; (5) complaints be distributed to manufacturers within 1 day of receipt; (6) manufacturers be required to respond to fast track complaints within 5 business days of the date the FCC forwards the complaint (with extensions of time contemplated to the extent reasonable efforts are being made to resolve the dispute); (7) outside sources be used by

Supporting Rationale" was presented to the Staff of the Wireless Telecommunications Bureau and the FCC's Disability Task Force in December, 1997. *See* Appendix B. Though not formally submitted in the record of the NOI leading up to this NPRM, it was provided to members of the disability community, including the National Association of the Deaf, the National Association of the Blind, the United Cerebral Palsy Association, the American Foundation for the Blind, the World Institute on Disability, Self Help for Hard of Hearing People, the American Council of the Blind, the Gallaudet University Assistive Technology Research Center.

⁹⁷ Of course, the goal of TIA's members is to address and resolve perceived access problems as quickly as possible, and thus may not require the full 60 day period in every case. However, TIA believes the 60 day period is necessary since some Section 255 complaints are certain to be complex.

the Commission in rendering a decision on a fast track complaint; and, (8) there be some mechanism for the parties to a fast track complaint to switch out of the fast track process before it is completed and to proceed to the Commission's informal or formal complaint resolution process. The underlying concept of trying to dispose of complaints in a less formal process before more formal procedures are used is a sound framework. However, the fast track process needs to be eliminated if the Commission is to be successful in meeting its multiple goals of resolving complaints with minimum interference; getting accessible product into the marketplace as quickly as possible; being responsive to persons with disabilities; and conserving the resources of all parties involved.

1. Encouragement of Informal Dialogue Between Interested Parties.

In the *NPRM* the Commission proposes to "encourage" consumers to contact the manufacturer directly before filing a complaint under Section 255, noting that this is consistent with the TAAC Report.⁹⁸ TIA asserts that the Commission should do more than "encourage" members of the public to discuss accessibility problems with manufacturers before they file complaints. The FCC should "require" consumers to discuss accessibility problems with manufacturers and allow the parties sufficient time to try and resolve the issues before the FCC becomes involved in the dispute resolution process.⁹⁹ This will enhance the possibility that the potential complainants and manufacturers can voluntarily resolve the issues in question without involving the use of scarce Commission resources. Indeed, many "complaints" may not be

⁹⁸ *NPRM* ¶ 128.

⁹⁹ It is entirely appropriate for a consumer to seek, and the FCC to provide, the point of contact information for a manufacturer to facilitate the initial contact between the consumer and the manufacturer.

complaints at all but rather inquiries consumers make about specific products and accessibility features, such as, for example, a consumer needing assistance on how to utilize the "zoom" feature¹⁰⁰ on the visual display of a pager. Intervention by the Commission in matters which are part of the normal process of manufacturers providing customer service is wasteful of Commission resources. Moreover, FCC involvement in such "inquiries" needlessly interferes with manufacturers' provision of meaningful customer services to persons with disabilities, just like other customers.

With regard to issues which are legitimately perceived complaints, the Commission's proposal merely to "encourage" rather than "require" the parties to discuss accessibility disputes before bringing the matter to its attention is counterproductive for two reasons. First, Commission involvement in the process will have a tendency to affect the attitude of the parties involved. Knowing that the FCC is directly involved in the process will cause manufacturers to be more defensive in responding to consumers and to think more about litigation strategy rather than resolving legitimate accessibility disputes. Knowing that the FCC is directly involved in the process will cause consumers to be less responsive to the legitimate explanations of manufacturers since they may believe the Commission's role is to be an advocate for their interests.

Second, TIA is not convinced that Commission involvement in the fast track process is conducive to the establishment of the type of dialogue between a consumer and a manufacturer that is necessary if the parties are seriously interested in trying to find solutions to asserted accessibility problems. As the Commission notes, many accessibility complaints are likely

¹⁰⁰ A "zoom" feature allows the user of a device to increase the font size of characters on a visual display.

to be complex issues.¹⁰¹ Due to the lack of general accessibility expertise in existence today, it may be difficult for the Commission staff to quickly identify the crux of an accessibility problem and to precisely articulate the nature of the complaint to a manufacturer.¹⁰² Notwithstanding the acknowledged complexity of issues surrounding Section 255 complaints, a simple example demonstrates how Commission involvement in the fast track process may be counterproductive to the quick resolution of Section 255 issues.

Assume the FCC allows a consumer to submit a fast track complaint before being required to discuss the substance of the complaint with the manufacturer in question. Assume further the consumer states that he or she has a hearing disability and alleges that "Manufacturer A" does not have a cellular phone which he or she can use. Based on the Commission's commitment to distribute complaints to manufacturers within 1 day of receipt, the complaint as stated will be transmitted to the manufacturer.¹⁰³ Under the proposed fast track process the manufacturer will be required to respond to the complaint within 5 business days. But because 5 business days is too short to fully understand the complaint and/or gather facts relative to the complaint, the manufacturer will be forced to answer by stating that it does not have sufficient facts on which to respond. Such an answer will result in the initiation of a more formal complaint at the FCC which could take months to resolve.

¹⁰¹ *NPRM* ¶ 150.

¹⁰² This is not to disparage the capabilities of the Commission and the staff but to acknowledge that there is a dearth of expertise with regard to telecommunications accessibility at the present time both within the Commission, in the manufacturing community and in the marketplace generally.

¹⁰³ As will be discussed below, TIA assumes that if the FCC's goal is to distribute complaints to manufacturers within 1 day of receipt, the Commission is not likely to be able to do more than merely transmit the complaint as received.

If, on the other hand, the FCC had required the consumer in question to discuss the matter with the manufacturer in the first instance, a dialogue between the manufacturer and aggrieved consumer would have ensued. Through a series of communications which might take place over the course of a few weeks, the manufacturer would have been able to ascertain the type of hearing loss the consumer has and how significant it is; whether the consumer wears a hearing aid and, if so, what kind; where the consumer purchased, or attempted to purchase, the product or service.¹⁰⁴ Based on a dialogue which would have provided answers to those types of questions, a manufacturer may have been able to: (1) identify one of its products which would have resolved the problem and/or (2) assist the consumer in finding the product. The consumer and manufacturer may thus have resolved the perceived accessibility problem without resorting to the use of the Commission's resources and processes.

To the extent the Commission's view is that more complaints will be similar to the example described in the paragraph immediately above, no efficiency will be gained by the Commission's involvement at this stage of the dispute resolution process. In fact, Commission involvement in the fast track process will have detrimental effects on the ability of parties to resolve accessibility disputes quickly in three respects. First, in its fast track capacity as "intermediary" between a manufacturer and a consumer, the Commission may incorrectly communicate the nuances of a complaint and thereby unintentionally undermine the ability of the disputants to understand the other's issues. Second, aside from the accuracy of the information transmitted, Commission participation as an intermediary will simply delay the time it takes to

¹⁰⁴ The time frame to engage in this dialogue can take a matter of weeks because parties may not always be available to one another when calls or other types of communications are initiated. Also, if communications need to be translated into or out of accessible formats, some delay will occur.

relay information between a manufacturer and a consumer. Third, and most importantly, the FCC may not ask all of the questions necessary to elicit the information the manufacturers need in order to solve the problem.

2. Contact Point.

TIA supports the Commission's proposal to require manufacturers to provide the Commission with a point of contact or multiple points of contact for matters relating to Section 255. Having a publicly available list of points of contact will facilitate the ability of the Commission and members of the public to reach the appropriate persons within a manufacturer's organization who can best handle initial queries regarding accessibility matters in a timely manner. It is appropriate for the Commission to require that each manufacturer provide the name of a person or an office which will be primarily responsible for fielding matters related to Section 255. In addition to the name or office, it is appropriate for the FCC to require manufacturers to provide the point of contact's telephone number, e-mail address, TTY number, fax number, and other reasonable information designed to enable the public to easily establish contact with the point of contact.

Manufacturers should have the flexibility to list either a name of an individual or the office which will serve as the point of contact for a given company. The Commission should not require a manufacturer to list a specific individual as a point of contact. A company may have numerous individuals charged with the responsibility of being the point of contact at any given time. This might be due to a manufacturer's preference to "rotate" persons responsible for being the point of contact or to accommodate business travel, illness, vacation or other situations in which an individual is not able to perform that function for a given period of time.

Similarly, manufacturers should be free to submit to the FCC more than one point of contact. Large companies with many products subject to Section 255 may find it more efficient to have a separate point of contact for separate products or families of products to ensure that queries and/or complaints are distributed to the appropriate personnel within a company as quickly as possible. Other manufacturers may choose to use a single point of contact so they can more closely monitor and maintain control over matters related to Section 255.

The *NPRM* asks for comment on whether the Commission should require the point of contact to be “in-house” or if it should permit companies to delegate the point of contact responsibility to outside agents.¹⁰⁵ TIA’s membership consists of large and small companies with a variety of organizational structures and resources at their disposal. While larger companies are likely to have in-house points of contact, smaller companies may choose to use outside agents to serve in that capacity. The resource commitment necessary for each manufacturer to have a point of contact is likely to be substantial. In fact, due to illness, travel, vacation and similar occurrences, it will be necessary for most manufacturers to have more than one designated point of contact to ensure that inquiries regarding accessibility can be handled during normal business hours. As a result, TIA submits that the FCC should allow manufacturers to delegate the point of contact function to outside firms.¹⁰⁶

The *NPRM* also contemplates that the point of contact might be used for purposes other than forwarding complaints filed under Section 255. Specifically, the Commission notes that the point of contact can serve a secondary function as a source of accessibility information for

¹⁰⁵ *NPRM* ¶ 132.

¹⁰⁶ TIA expects that any manufacturer who chooses to delegate the function to an outside firm will still be held responsible for Section 255 compliance.

the public. It asks for comment on "...what additional related data, if any, should we collect that would advance this function."¹⁰⁷ TIA opposes Commission adoption of any rule which would require manufacturers to provide the FCC with general accessibility information which would be made available to the public.

Section 255 provides the Commission with limited jurisdiction. The Commission is obligated to develop accessibility guidelines in conjunction with the Access Board and it has been given exclusive jurisdiction to handle complaints brought under Section 255.¹⁰⁸ There is no affirmative statutory requirement for the Commission to engage in the collection of information regarding a company's products. Even assuming the Commission has independent general authority to require the collection of accessibility information not expressly required by the enabling statute, adoption of such a rule would not be good public policy for a variety of reasons. First, it is unclear precisely what information the Commission might require manufacturers to submit and TIA has concerns that the burden on manufacturers, especially small companies, will be substantial. Second, the collection of such information from the thousands of manufacturers and service providers who are subject to Section 255 would be a substantial burden upon the Commission's own resources. Third, any database or other source of accessibility information would be very difficult to keep up to date, especially given the speed with which products are introduced in the marketplace. Fourth, the public might incorrectly assume that information submitted to, and made available by, the FCC about a company's accessible products (or other information relating to accessibility in general), has been approved or sanctioned by the

¹⁰⁷ *NPRM* ¶ 134.

¹⁰⁸ 47 USC §§ 255(e) and (f).

Commission as fully compliant with Section 255. Fifth, TIA envisions that information about a company's accessible products will be disseminated rapidly throughout the marketplace without need for intrusive and burdensome government regulation. This will occur as a result of the voluntary efforts of individual manufacturers, trade associations and groups representing individuals with disabilities. Thus, there appears to be no legitimate reason for the Commission to engage in an information gathering process whose function is likely to be performed by the private sector as a result of marketplace forces.

3. Fast Track Deadlines are Too Short.

The Commission proposes to distribute fast track complaints within 1 day and to require manufacturers to respond to fast track complaints within 5 business days of the day they are "forwarded" to manufacturers.¹⁰⁹ These timetables are unrealistic and are counterproductive to the voluntary resolution of Section 255 complaints.

The Commission is clearly in control of how quickly it can distribute complaints submitted under the fast track process. With the addition of considerable personnel resources specifically to handle Section 255 complaints in addition to the other complaints it receives on a daily basis, it is theoretically possible for the Commission to meet its one day goal. However, TIA believes the Commission's one day goal is wholly unrealistic in large part due to the nature of Section 255 complaints that will be received. For example, TIA assumes that some complaints will be submitted in alternate formats such as Braille or audiotape. If the Commission is going to

¹⁰⁹ *NPRM* ¶ 136.

translate the complaint into a format which is usable to the manufacturer,¹¹⁰ a substantial amount of time will be devoted to the translation process. Even assuming the translation process is not a major impediment, a one day turn around is unrealistic since TIA assumes the Commission will not merely log in the complaint and forward it to the manufacturer in question, but will engage in some qualitative analysis and evaluation of the complaint.¹¹¹ Any significant analysis of a complaint will take more than one day to complete after the complaint is first received.

Even more unrealistic than the commitment by the Commission to distribute complaints within 1 day, is the Commission's proposed 5 day response period.

First, the fast track process proposes to require a response to be submitted within 5 business days of the date the complaint was "forwarded." Any response period should be based on the date of receipt of the complaint, especially given the short time period to respond. It is not unusual for documents released by the Commission to be released towards the end of the day. Thus, a fast track complaint may be received by a manufacturer after its business day has ended or the contact point has left the office. Despite the fact that the Commission could send a fax or an e-mail to reduce the time it takes for a complaint to be received by a manufacturer, the Commission's proposal does not take into consideration delaying factors which are likely to occur in the normal business environment. The point of contact may be out of the office sick; the point of contact may be traveling on business; or the fax machine or e-mail system of the point of

¹¹⁰ If fast track complaints are not going to be translated into a format useable by a manufacturer then the proposed 5 day response period becomes even more unrealistic since a manufacturer will need spend time translating a complaint into a format it can understand.

¹¹¹ If the Commission does not engage in a qualitative analysis of the complaint's legitimacy, its fast track process will tend to encourage the filing of frivolous complaints. Manufacturers will be forced to waste resources defending against such complaints.

contact may be out of service. As an example, a complaint may be forwarded to a point of contact on Day 1 but because he or she is out of the office on Day 1, the point of contact would not actually receive the complaint until Day 2. Assuming the complaint had to be sent to Asia for review and was sent to Asia on Day 2, it would not be received in Asia until Day 3 due to the fact that the business day in Asia would have already closed by the commencement of business on Day 2 in the U.S. By that time, the manufacturer would only have 2 days within which to evaluate the complaint and prepare a response to be submitted to the FCC. In order to get the response back to the FCC, similar time frames might be encountered making it virtually impossible to respond to a fast track complaint within 5 business days, let alone adequately study a complaint and respond substantively thereto.

Even where a manufacturer need not communicate with parties located in far-flung areas of the world, other factors suggest that 5 days is too short a period for a response to a fast track complaint. For example, one of the first steps that a manufacturer would make upon receiving such a complaint is to contact the person issuing the complaint to find out more about the perceived problem. After making such contact (which might take a day or two assuming the complainant is available, which will not always be the case), a substantial number of hours will have to be spent evaluating the complaint, drafting a response, clearing the response with senior management and legal counsel and filing the response with the FCC. This process can take hundreds of hours which may make it virtually impossible to provide a reasoned response within 5 business days of the date of a complaint.

Second, the Commission acknowledges that many Section 255 complaints will be complex. Each and every complaint will have to be thoroughly evaluated whether it is a fast track or other type of complaint. If the complaint is not frivolous and there is no similar or accessible

product, a manufacturer will have to engage in research to determine why it made the determination that it was not “readily achievable” to make the product accessible for the disability in question. For companies that make a large quantity of products, the research is likely to take time. The failure of the FCC to impose a statute of limitations on the time for bringing a complaint under Section 255 exacerbates the problem since records on all products will have to be maintained in perpetuity and may be archived for legitimate business reasons.

Third, because the complaint process is adversarial with potentially severe legal consequences to be imposed on manufacturers who are found to have violated the provisions of Section 255, responses to fast track complaints will likely be reviewed internally by management responsible for Section 255 implementation as well as in-house and/or outside counsel.

For the foregoing reasons, the predominant response to a fast track complaint is likely to be that there was insufficient time to adequately review, research and respond to the complaint. This will result in the Commission moving to the next level of complaint process, even if more time to respond may have enabled the parties to come to closure on a given issue. The Commission's proposal to extend the time within which to answer a fast track complaint if "substantial efforts" to respond are under way is not a suitable cure for the dilemma described above. Because most fast track complaints will require extensions of time for the reasons described above, the Commission will be inundated with requests for extension of time. The requests may have to be translated into accessible formats and, they will have to be evaluated by and responded to by the Staff thereby consuming more resources of the Commission and other affected parties.

It is important for complaints to be handled quickly and to provide relief to aggrieved parties when necessary. However, TIA disagrees with the Commission's tentative

conclusion that the fast track process accomplishes the result in the most efficient manner. Rather than arbitrarily insisting on unreasonably short response times under the fast track process, the Commission should require dialogue between affected parties without government intervention in the first instance.

4. Standing.

The Commission proposes not to impose a standing requirement for complaints filed under Section 255 based on the fact that it does not want to burden the complaint process with disputes relating to standing.¹¹² Though it is possible that there will be disputes over standing if the Commission adopts a standing requirement, those disputes should be few and far between. On the contrary, the Commission's tentative conclusion to refrain from imposing a standing requirement is likely to create significant disruption of the orderly functioning of the Section 255 complaint process.

Due process requires that a complaint contain sufficient specificity in order to allow a manufacturer to adequately prepare a defense. This can only occur if a manufacturer has specific facts from a specific complainant about the specific manner in which a product is alleged to be inaccessible based on the complainant's specific disability and his or her inability to use a device given the disability in question.

In addition to denying a manufacturer due process, the lack of a standing requirement will result in frivolous complaints being filed against manufacturers. For example, the absence of a standing requirement might encourage the filing of target complaints, i.e., complaints

¹¹² *NPRM* ¶ 148.

against a specific manufacturer designed only to hassle that manufacturer as a result of some past action or attitude, or to coerce a manufacturer into taking action it would not otherwise take.

Similarly, the lack of a standing requirement might result in complaints being filed by persons without any "interest" in disability issues but merely as fishing expeditions to obtain material from manufacturers that would otherwise be kept confidential. For example, manufacturers' competitors could use the complaint process to try and discover a company's internal equipment design and/or product development processes which are matters wholly irrelevant to the intent of Section 255 but which could have immense commercial value in a competitive equipment marketplace.

Without a standing requirement, there is no way the Commission can nip such abusive and anti-competitive actions in the bud, especially given the fact that the Commission's one day turn around proposal is not likely to provide the Commission with sufficient time to engage in any qualitative review of a Section 255 fast track complaint. The Commission's ultimate goal in developing rules for the implementation of Section 255 should be to get more accessible product into the market at the earliest possible time.

The Commission should not institute procedures which deny manufacturers due process by creating impediments to preparing adequate defenses to complaints or by creating incentives to abuse the complaint process, since resources devoted to defending against complaints filed by persons who are not directly aggrieved serves only to takes resources away from the development of accessibility solutions.

5.

Complaint Format.

The Commission does not propose a specific complaint format but instead proposes to require at a minimum that the fast track complainant identify the equipment, name and address of the manufacturer and a description of how the equipment is inaccessible to persons with a disability.¹¹³ TIA believes the better course of action is for the FCC to adopt a specific complaint format and require complaints filed to follow the uniform format.

The basic requirements proposed in the *NPRM* do not provide a manufacturer with sufficient facts upon which it can make a reasonable response. In fact, what the Commission would require as a minimum to be included in a complaint denies the respondent due process since the information is unreasonably vague. The basic requirements for alleging a violation of Section 255 should include not only the information proposed in the *NPRM*, but a detailed description of (1) the complainant's disability and (2) the efforts made, if any, to acquire product from a retail outlet or service provider. Only when a manufacturer has sufficiently precise information on which to respond, can the manufacturer adequately investigate the complaint and respond in a meaningful manner.

6. FCC Decisionmaking Process.

The Commission proposes to use a respondent's "resolution report" as well as other sources of information to render its decision on a fast track process complaint. Specifically, the Commission indicates that it "...might also include information requested from the respondent or the complainant, discussions with accessibility experts from industry, disability groups or the

¹¹³ *NPRM* ¶ 131.

Access Board, or review prior or other pending complaints involving the respondent."¹¹⁴ TIA asserts that the Commission's proposed decisionmaking process is deficient in two respects.

First, as noted above, the 5 day response period is entirely too short and will not lead to the Commission receiving the type of detailed, substantive information that will enable it to make a decision on the merits. As a result, more often than not, the Commission's fast track process will not lead to the rapid resolution of a complaint, but will lead to the initiation of a complaint under the Commission's more traditional complaint processes. This will entail greater burdens on all affected parties, including the Commission and will substantially delay the time it takes to resolve legitimate complaints.

Second, and more importantly, the Commission's proposal to rely on outside sources in a fast track process is not appropriate. At this point in time, there is no acknowledged group of telecommunications disability experts who have actual knowledge about whether it is “readily achievable” for a manufacturer to incorporate accessibility features into telecommunications equipment and CPE. Expertise in accessibility is but one dimension in the process of developing and incorporating accessibility features into telecommunications equipment and CPE. Expertise in manufacturing systems and design of product for the market is also essential. While systems may vary from company to company, all manufacturing systems ultimately utilize a “design team” to define a product with the specificity necessary for production. The “design team” consists of numerous personnel, including human factors engineers, RF or systems engineers, marketing, and manufacturing engineers, each of whom has expertise that must be melded together to agree on final product definition. The product definition establishes all of

¹¹⁴ *NPRM* ¶ 141.

the technical specifications (e.g., frequency, bandwidth, technology platform, power source) and market specifications (e.g., size, features, weight). While “accessibility experts” may exist in the area of human factors and technological approaches for addressing various functional limitations, those experts would likely be uninformed in other areas that go into product design, and their conclusions about a particular solution for a particular product made by a particular manufacturer may be totally inconsistent or mutually exclusive with other factors that go into the product design process. For example, while an “accessibility expert” may know about the use of voice chips, variable size fonts or color contrasts to assist persons with specified disabilities, the “accessibility expert” is not likely to understand the impact such factors may have on other critical components of the product definition such as the increased power consumption, memory size or chip size. Thus, Commission reliance on such "experts" is of questionable validity at best and at worst could lead to wholly erroneous and subjective conclusions on whether it was “readily achievable” for a manufacturer to make a product accessible for a given disability.

Moreover, unless, a manufacturer is given the opportunity to submit comment “on the record” regarding information provided to the Commission by outside sources who are not parties to the proceeding, it would be denied procedural due process in an administrative proceeding. If, on the other hand, a manufacturer is allowed to provide comment on such discussions and/or documents, the "fast track" process would be delayed further. Thus, the better course of action would be for the Commission to use TIA’s DRP process which requires the parties to engage in direct, substantive dialogue before the matter even comes to the attention of the Commission. Only after good faith efforts at resolving their differences fail, should the Commission institute one of its more traditional dispute resolution processes.

7. Ability to Switch Out of the Fast Track Process.

In the *NPRM* the Commission asks for comment "...on how to provide a mechanism for either party (or the Commission, for that matter) to terminate the fast track phase and proceed to traditional dispute resolution processes, where it appears the fast track process is not leading to a mutually satisfactory resolution."¹¹⁵ The fact that the FCC calls for comment on this issue is an acknowledgment that the fast track process has potential flaws for the reasons described above. Thus, TIA does not believe the Commission is asking the correct question here. Rather than attempting to provide a mechanism by which parties can switch out of fast track if it is not producing the desired result (which will certainly result in wasted resources of all affected parties), the Commission should evaluate whether the fast track process concept is likely to accomplish the desired result in the first place. TIA asserts the Commission's fast track proposal will not accomplish the desired result.

B. TIA's Proposed Dispute Resolution Process.

Instead of implementing the FCC's proposed fast track process, the public would be better served if the FCC were to adopt TIA's DRP, as slightly modified in these comments from December 1997 proposal distributed to the staff of the Wireless Telecommunications Bureau, the Commission's Disabilities Task Force and other interested parties.¹¹⁶ The DRP is specifically designed to accomplish the dual objectives expressed by the Commission that a

¹¹⁵ *NPRM* ¶ 137.

¹¹⁶ *See* Appendix B.

compliance program for Section 255 complaints should (1) be responsive to consumers and (2) be an efficient allocation of resources.¹¹⁷

TIA's DRP¹¹⁸ has the following basic characteristics:

Manufacturers are required to establish at least one point of contact to be the person responsible for receiving complaints and otherwise fielding inquiries regarding accessibility issues;

Manufacturers are required to provide the FCC, and upon request to individuals with disabilities and their representatives, with a point or points of contact;

The FCC is required to advise aggrieved parties that they must first engage in the TIA DRP process as a prerequisite to filing an informal or formal complaint under Section 255;

Manufacturers are required to establish contact with the aggrieved party within 5 business days after the point of contact has been contacted by the aggrieved party and to enter into good faith discussions with the aggrieved party thereafter to try and resolve the issue;

Manufacturers are required to provide a complete, detailed response to the aggrieved party, with a copy to the FCC, as promptly as possible but in no event later than 60 days after receipt of the aggrieved party's initial contact with the manufacturer, providing the solution to the complaint or stating the specific reasons why the complaint could not be satisfied;

The FCC is required to consider complaints brought pursuant to Section 255 only if the complainant has first contacted the manufacturer and the 60 day time for a response has expired (or such shorter period of time if the manufacturer has submitted a response in less than 60 days).

TIA's DRP is responsive to consumers' needs. It provides sufficient time to allow a manufacturer and aggrieved party to engage in the type of dialogue necessary for the

¹¹⁷ *NPRM* ¶ 124.

¹¹⁸ In these comments, the proposal has been modified and expanded slightly since its initial preparation based on consideration of the issues and evaluation of the *NPRM*.

manufacturer to fully understand and evaluate a particular complaint and for the consumer to understand the manufacturer's issues. To the extent a perceived complaint involves a service provider, the 60 day (or less) resolution period also enables the parties to contact the service provider to receive its input.

TIA agrees that "accessibility delayed is accessibility denied."¹¹⁹ However, as described above, it does not believe that arbitrarily short response deadlines create an environment or process which expedites the ultimate provision of accessibility. In fact, TIA believes the fast track process will create the opposite result. The dialogue which must take place between an aggrieved party and a manufacturer (and perhaps with service providers as well) will be especially important in the early days of Section 255 implementation. At the present time there is a very small book of knowledge on telecommunications accessibility issues. Though the learning curve will increase rapidly as telecommunications accessibility issues are discussed and evaluated for a wide variety of disabilities, there will be a period of time during which persons with disabilities and manufacturers will learn each other's respective needs and the practical limitations of making accessible products in today's competitive marketplace.

In addition to the foregoing, nowhere in the *NPRM* does the Commission commit to resolve fast track complaints within 30 days, 60 days or any other period. Unless there is a commitment on the part of the Commission to resolve fast track complaints within a short period of time, there is no guarantee that unreasonably short time periods for manufacturers to respond to fast track complaints will lead to less delay in providing accessibility solutions than if the parties are given a reasonable period of time to resolve the issues themselves.

¹¹⁹ *NPRM* ¶ 124.

The TIA DRP also serves to conserve resources of the Commission and industry. By allowing a period of time during which manufacturers can discuss accessibility complaints with persons with disabilities free of Commission involvement, the Commission can devote its staff resources to resolving legitimate complaints filed under its formal or informal complaint processes. From the manufacturer's standpoint, more design resources can be devoted to ensuring accessible products are produced for a wide variety of disabilities than are devoted to participating in expensive and time consuming complaint proceedings.

C.

Use of Traditional Dispute Resolution Processes.

1. Statute of Limitations for Bringing Complaints.

The *NPRM* does not propose to impose a statute of limitations on the filing complaints under Section 255 (whether a complainant uses the fast track, informal or formal complaint process) but asks for comment on whether the 2 year statute of limitations in Section 415 should be applied to manufacturers.¹²⁰ TIA does not agree with the Commission's tentative conclusion that no statute of limitations should be imposed for Section 255 complaints. The longer the period of time after the design and development process is commenced for a given product that a complaint under Section 255 can be brought, the greater the burden will be for a manufacturer to respond to the complaint. This is due to the fact that records for a given product may be archived or personnel involved in the process of determining what accessibility features in a product were “readily achievable” are no longer employed by the manufacturer. Most importantly, the telecommunications equipment market continues to evolve at an accelerating pace. There are hundreds, if not thousands, of new products being introduced on a monthly basis. CPE typically has a typical product life of approximately 12 months and, on average, is only produced for that period of time.

In addition, as time goes on, it will be “readily achievable” to build more accessibility features into telecommunications equipment and CPE. Moreover, the alleged inaccessibility of a product which is no longer in production may be rendered moot if other more recently developed and introduced products presently being manufactured will have the accessibility features desired. Nonetheless, unless the Commission imposes a statute of limitations

¹²⁰ *NPRM* ¶ 149. Section 415 of the Communications Act requires parties to file complaints against telecommunications carriers for charges levied within the previous two years. Section 415 is not applicable to manufacturers of telecommunications equipment and CPE.

on the ability to file a complaint under Section 255, manufacturers will have to devote substantial resources to responding to some complaints which prove to be unnecessary.¹²¹ TIA asserts that the Commission should adopt a statute of limitations for bringing a complaint under Section 255 (whether fast track, informal or formal) under which complaints tendered pursuant to Section 255 will be barred if they are filed more than 6 months subsequent to the complainant's initial purchase of a device subject to Section 255. TIA's proposal provides balance between the right of a person with a disability to file a Section 255 complaint within a reasonable amount of time after purchase¹²² and a manufacturer's right to avoid having to respond to obviously stale complaints which are wasteful of resources.

2. Response Time for Informal and Formal Complaints.

The NPRM proposes to require respondents to provide answers within 30 days of the date of the complaint and complainants to respond thereto within 15 days¹²³ rather than 10 days and 5 days as provided for in the Commission's general pleading rules. The basis for the longer time periods is due to the Commission's acknowledgment that Section 255 informal and formal complaints are likely to be more complex than complaints typically filed with the Commission. TIA agrees that Section 255 complaints will be complex and that a longer period of

¹²¹ This is another example where the use of TIA's proposed process for requiring mandatory dialogue between a potential complainant and a manufacturer before a complaint is filed with the Commission can be put to good use.

¹²² Presumably, shortly after purchase, a person with a disability will know whether the product in question is accessible.

¹²³ *NPRM* ¶¶ 150-152.

time is necessary to answer a complaint and to respond to an answer.¹²⁴ However, TIA submits that 30 days and 15 days are not sufficient periods within which to file answers and replies for a number of reasons. First, as noted in the discussion on fast track complaints, it may be necessary to translate the answer and response to formats that the respondent and the complainant can both understand. Second, it may take a substantial amount of time to evaluate the complaint and to identify those parties within an organization who were primarily responsible for making a determination on the addition of accessibility features in a given product. Third, because there is no present body of law or precedent with regard to Section 255, neither complainants nor respondents know what showings will satisfactorily support their respective cases. As a result, parties are likely to spend more time evaluating the proper factual information that must be submitted to demonstrate a violation of Section 255 or to defend against the same. For the foregoing reasons, TIA submits that answers to complaints should be filed within 60 days of receipt thereof, and responses to the answers should be filed within 30 days thereof.

To the extent the Commission implements TIA's DRP proposal which requires parties to engage in a mandatory 60 day (or less) resolution period before informal or formal complaints can be filed, the 30 day answer and 15 day response periods proposed are reasonable. This is due to the fact that the dialogue between the parties in the mandatory pre-filing discussion stage will have served to enable manufacturers to engage in research regarding the factual matters alleged and to narrow the focus of the complaint which will have provided both sides with a substantial amount of information about the other's position thus reducing the time necessary to respond.

¹²⁴ TIA also believes this statement about the complexity of Section 255 complaints demonstrates that a 5 day fast track response period is unreasonable on its face.

3. Confidentiality.

The confidentiality of information submitted in the context of the Section 255 complaint process (whether in the fast track, informal or formal complaint process) is a critical concern to manufacturers. Information on why it was not “readily achievable” to make a product accessible or to incorporate a particular accessibility feature goes to the very core of a manufacturer's product design and development process. It can also include highly proprietary and sensitive cost and financial information regarding a product or product pricing strategies. For example, especially when raising the "readily achievable" defense, information which would have to be submitted to prove a case might include product costs, current drains required for certain features, ROM space required for certain features, licensing fees paid to others, technical details of operation and similar matters of a highly proprietary and confidential nature, which, if put in the public domain would have devastating impact on a manufacturer's competitive position in the marketplace.

TIA is concerned that existing rules which are designed to protect disclosure of confidential information are not sufficient to protect manufacturers' legitimate interests. TIA is further concerned that unless the Commission takes strong steps to prevent the disclosure of confidential information, the Section 255 complaint process might be used by unscrupulous entities (including other manufacturers) as fishing expeditions to try and surreptitiously obtain information to their competitive advantage.

For the foregoing reasons, TIA proposes that the Commission should adopt a presumption that trade secrets and commercial or financial information submitted to the Commission by a manufacturer in connection with a “readily achievable” defense to a Section 255

complaint will be treated as confidential as a matter of course¹²⁵ and that it will treat such material as falling within exemption 4 of the Freedom of Information Act.¹²⁶ Further, TIA proposes that the FCC impose the following additional procedural rules to protect a manufacturer's confidential information: (1) no confidential materials will be required to be disclosed unless the complainant executes a confidentiality agreement; (2) complainants shall not be allowed to make copies of any material deemed confidential; and (3) confidential materials should be reviewed only in connection with FCC personnel in attendance. Lastly, without limiting the range of sanctions that the FCC has at its disposal for violations of its rules or orders, TIA proposes that the FCC dismiss any complaint in which a party thereto violates rules or orders regarding confidentiality. TIA also asks the FCC to consider additional sanctions, including fines or preclusion from appearing before the FCC, for any party that violates confidentiality orders after a case has been completed.

4. Formal Dispute Resolution.

The *NPRM* proposes to provide potential complainants three opportunities to submit complaints under Section 255 rather than two opportunities that are available under the Commission's existing rules. With regard to complaints filed against common carriers, a complainant today has the ability to file an informal complaint and if that is not satisfied, to institute the formal complaint process. The Commission's Section 255 proposal is substantially different because a complainant can file a fast track complaint and if that is not satisfied it can file

¹²⁵ In a similar product defense, disclosure of such confidential information would not be required.

¹²⁶ Exemption 4 of FOIA, 5 USC § 552(b)(4), provides that an agency need not disclose information that is “trade secrets and commercial or financial information obtained from a person and privileged or confidential.” *Bartholdi Cable Company, Inc. v Federal Communications Commission and United States of America*, 114 F.3d 274 (D.C. Cir. 1997).

an informal complaint and if the informal complaint is not concluded satisfactorily the complainant can file a formal complaint. The process proposed in the *NPRM* is, therefore, more burdensome on potential respondents than any other complaint procedure established by the Commission.

Requiring manufacturers to defend against a Section 255 complaint three times is an undue and unjustified burden which is clearly inconsistent with the Commission's goal of making the Section 255 implementation process one which is an efficient allocation of resources. Allowing complainants to have three bites of the apple is especially burdensome to smaller manufacturers who may not have the internal or external resources to commit to defending themselves three times based on a single allegation.

Consumers are also adversely affected by the FCC's proposal since they, too, will be required to expend resources in each of the three levels of complaint processes proposed in the *NPRM*. Though the fast track and informal complaint processes would cause the Commission and manufacturers to expend more resources than consumers, the same is not true for the formal complaint process. In the formal complaint process the complainant has the burden of moving the case forward, including carrying the financial and resource costs of engaging in the discovery process and costs associated with being represented by counsel in administrative litigation.

The Commission recognized that it is not efficient to require entities to expend substantial resources responding to complaints when such resources could be put to better use providing more accessible products.¹²⁷ Thus, rather than allowing three levels of complaints to be filed for violations of Section 255, TIA suggests the number be reduced to two. It further suggests that the first phase should be TIA's proposed DRP since, as discussed above, it provides the right environment for the voluntary resolution of disputes over accessibility with a minimum of

¹²⁷ *NPRM* ¶ 124.

government intervention. The second level in the Section 255 complaint process should be establishment a modified formal complaint process.

For Section 255 complaints, the FCC should use a modified common carrier formal complaint process which would be "...resolved on a written record consisting of a complaint, answer and joint statement of stipulated facts, disputed facts and key legal issues."¹²⁸ but without some of the more burdensome provisions of the common carrier formal complaint process such as discovery which would be costly to both manufacturers and consumers. Thus, the modified formal complaint process has the benefit of allowing the Commission to make a decision on the basis of pleadings and other "on-the-record" information submitted to the Commission on the one hand without requiring all parties to expend substantial funds to engage in the discovery process.

5. Alternative Dispute Resolution Process.

In addition to fast track and the use of informal/formal complaint processes, the Commission proposes to use Alternative Dispute Resolution ("ADR") procedures as the third prong of its Section 255 enforcement effort.¹²⁹ TIA does not object to the Commission adopting rules which provide for ADR of Section 255 complaints. However, TIA asserts that the use of ADR techniques should not be used for the first few years after final rules in this proceeding are adopted.

The Commission correctly points out that ADR techniques are not necessarily appropriate in every case, specifically in (1) precedent setting cases; (2) cases bearing on

¹²⁸ See § 1.720.

¹²⁹ *NPRM* ¶ 158.

significant new policy questions; (3) cases where maintaining established policies is of special importance; (4) cases significantly affecting persons or organizations who are not parties to the proceeding; (5) cases where a formal record is essential; and, (6) cases where the agency must maintain continuing jurisdiction with authority to alter its disposition in light of changed circumstances.¹³⁰ With regard to complaints filed pursuant to Section 255, virtually all of the factors listed above are present since few complaints have been submitted to the Commission and none have been decided by the Commission or appealed to higher judicial authority. Until the FCC has issued enough decisions on a sufficiently wide variety of accessibility complaints, there will be no general body of knowledge on which experts can rely.

Furthermore, while there are persons and organizations which can provide useful thinking about potential accessibility solutions in the context of telecommunications in general and Section 255 specifically, there are no persons or organizations that can legitimately claim they are "expert" in determining whether it is "readily achievable" to incorporate one or more accessibility features into telecommunications equipment and CPE. Until the Commission, manufacturers and affected members of the public agree that a sufficiently large body of knowledge exists on what is or is not "readily achievable" in the context of complex issues of "technology, economics and medicine,"¹³¹ the Commission should not delegate to outside sources the authority expressly granted to it by Congress to resolve complaints filed under Section 255.

Similarly, at this point in time it is premature for the Commission to refer inquiries and complaints to a joint industry/disability advisory panel for opinion.¹³² As noted above, there is

¹³⁰ *NPRM* ¶ 157.

¹³¹ *NPRM* ¶ 158.

¹³² *NPRM* ¶ 161.

very little expertise in this area today and it is doubtful that a joint industry panel would be able to be helpful in the early years of resolving Section 255 complaints.

6. Defenses to Section 255 Complaints.

TIA supports the concept that it is appropriate to give weight to the good faith efforts of a manufacturer to comply with Section 255 by taking actions that show it has attempted to make products more accessible in the evaluation of Section 255 complaints.¹³³ It specifically supports the Commission’s proposal to use four broad categories of measures which, if taken by manufacturers, are evidence of their good faith efforts, i.e., (1) self-assessment of whether it is “readily achievable” to incorporate accessible features in products; (2) external outreach efforts to ascertain accessibility needs and possible solutions; (3) internal processes to ensure early and continuing consideration of accessibility concerns; and (4) user information and support.¹³⁴ In fact, manufacturers who engage in these types of activities and others which show that they are sincere about “doing the right thing,” should be given a rebuttable presumption that they have complied with Section 255.

Commission evaluation of Section 255 complaints should place a great deal of emphasis on the types of efforts described above, especially in the first few years after rules are adopted by the Commission. Greater emphasis on the “processes” used by manufacturers may be more important than the level of accessibility that can be readily achieved since it will take some time for manufacturers to engage in the outreach process and come to a more complete

¹³³ *NPRM* ¶ 164.

¹³⁴ *NPRM* ¶ 165.

understanding of the needs of persons with disabilities and then to evaluate how best to incorporate accessibility features into products which meet those needs.

With regard to outreach and the ability of smaller companies to engage in that process, TIA supports the Commission's proposal to look favorably upon outreach conducted by consortia or trade associations.¹³⁵ In fact, TIA supports the ability of manufacturers of any size to be able to take advantage of the outreach efforts of consortia and trade associations. Because the ultimate goal of Section 255 implementation is to make telecommunications equipment and CPE more accessible to persons with disabilities, the Commission should be concerned that companies, both large and small, make whatever efforts are necessary to gain the knowledge which will enable them to increase accessibility.

7.

¹³⁵ *NPRM* ¶ 166, n.297.

Penalties for Non-Compliance.

The Commission lists those provisions of the Communications Act of 1934, as amended, which provide it with authority to impose penalties on manufacturers and others who are subject to Section 255.¹³⁶ TIA does not dispute the Commission’s listing but does note that the language of the NPRM is ambiguous on the entities to which they are applied. In the *NPRM* the Commission states:

Section 312 of the Act also provides for the issuance of a cease and desist order to a station licensee or construction permit holder, for the willful or repeated violation of or failure to observe any provision of the Communications Act. We believe Sections 4(i) and 208 of the Act provide a basis for such an order with respect to non-licensees.

Sections 207 and 208 provide for the award of damages for violations by common carriers and arguably others. We seek comment on the relationship between Sections 207 and 208 and Section 255, and between implementing rules under each. We ask commenters to specifically address what circumstances would warrant imposition of damages where Section 255 is found to have been violated, and how such damages could be calculated.¹³⁷

The Commission’s use of the terms “non-licensees” and “common carriers and arguably others” are of concern to TIA. TIA assumes that the references to “non-licensees” and “common carriers and arguably others” are references to entities other than manufacturers since there is no legal authority to apply Sections 312, 207 and/or 208 to manufacturers absent Congress amending the Communications Act. Section 312 is expressly applicable to Title III radio licensees while Sections 207 and 208 are expressly applicable to common carriers. Because the language of Sections 312, 207 and 208 are clear and unambiguous on their face, the

¹³⁶ *NPRM* ¶ 172.

¹³⁷ *NPRM* ¶ 172, citations omitted.

Commission can not expand the express and literal language of those sections to include manufacturers of telecommunications equipment and CPE to the extent that they are not otherwise Title III licensees or common carriers. In addition, TIA opposes the FCC's suggestion that retrofiting is an appropriate penalty for noncompliance.¹³⁸

8. Additional Implementation Issues.

The FCC should refrain from establishing itself as a clearinghouse for disabilities issues, including product information and accessibility solutions. The burden imposed on the Commission to collect and maintain such information will be considerable. Moreover, there are outside organizations from industry, the disability community and elsewhere which will provide that information. Absent compelling reasons to become involved in a process which is already being provided and will continue to be provided by private, non-governmental sources, the Commission should devote its limited resources to other areas of Section 255 implementation.

Similarly, the FCC should not publish information on the performance of manufacturers in providing accessible products, especially based on statistics generated by the Commission's fast track process. Neither should the FCC institute any program of awarding a "seal or other imprimatur"¹³⁹ of compliance by a manufacturer.

As discussed above, the Commission's fast track process is not likely to result in the resolution of many complaints because, among other things, it will not provide manufacturers sufficient detail on the nature of the violation and will not provide sufficient time to respond in detail to a complaint. As a result, the statistics derived from the fast track process are likely to be

¹³⁸ *Id.*

¹³⁹ *NPRM* ¶ 174.

flawed. For example, Manufacturer A (who may have an overall good record of making accessible products) may “lose” two of three fast track complaints while Manufacturer B (who has a bad record of overall Section 255 compliance) may “win” two of three fast track complaints. If the Commission were to publish statistics showing that Manufacturer A is worse than Manufacturer B or if the Commission were to give Manufacturer B a “seal or other imprimatur” of Section 255 compliance based on the fast track process, the public would be deceived into believing Manufacturer B was “better” than Manufacturer A in providing accessible products. Such actions could artificially distort the operation of an otherwise competitive market and could have an unfair and material adverse impact on Manufacturer A.

Disability organizations are keenly aware of manufacturers’ obligations under Section 255. Moreover, there are private organizations that currently distribute information about accessible technologies and accessible products. As time goes on, more and more information about accessible products and technologies will be available from private sources. Similarly, it will not take long before the public learns which manufacturers have a good record of compliance and which do not. As a result, TIA asserts that the Commission should refrain from using its resources to provide information which (1) may be statistically invalid and (2) is otherwise available from private sources.

VI. INTERIM TREATMENT OF COMPLAINTS.

TIA supports the Commission’s conclusion that there is no need to adopt interim complaint procedures. Furthermore, TIA believes the Commission should make it abundantly clear that restraint should be exercised before filing complaints under Section 255. Filing complaints in advance of the Commission’s adoption of rules implementing Section 255 will not

serve the public interest for two reasons. First, because the Commission has no specific procedures for handling Section 255 complaints at the present time, the process will lead to inefficient handling of complaints. Second, the resources of the Commission, manufacturers and others will be devoted to handling litigation rather than trying to come up with solutions to increasing accessible products.

VII. CONCLUSION.

In conclusion, TIA wishes to reaffirm the commitment of its member companies to the goal of increased access to telecommunications for individuals with disabilities. TIA believes access will be increased over time by market forces as well as the force of technological innovation in this competitive industry. The foregoing comments represent TIA's beliefs as to how the FCC's rules can best work to provide the industry with incentives to incorporate accessibility features in its products and services, without also stifling the very innovation that is necessary to reach the ultimate goal.

Towards that end, TIA strongly encourages the FCC to adopt a product line rather than a product-by-product approach to the accessibility requirement. It is only by providing manufacturers with discretion as to how to incorporate accessibility features that meaningful access can be provided to the diverse group of individuals with disabilities. TIA further urges the FCC to tailor the definitions of certain key statutory terms to the context of the telecommunications industry. Definitions adopted verbatim from the ADA, for example, may not prove as useful in this context. Finally, TIA asks the FCC to adopt TIA's DRP instead of the FCC's fast track proposal for resolving access problems. TIA believes there is much to be gained

from allowing manufacturers to attempt to address any problems through direct contact with consumers, rather than involving the FCC at first instance.

Respectfully submitted,

TELECOMMUNICATIONS INDUSTRY
ASSOCIATION

Grant Seiffert,
Vice President, Governmental Relations
Matthew J. Flanigan
President
1300 Pennsylvania Avenue, NW
Suite 350
Washington, D.C. 20004
(202) 383-1483

CERTIFICATE OF SERVICE

I, Karen E. Lloyd, do hereby certify that on this 30th day of June 1998, a copy of the foregoing Comments of the Telecommunications Industry Association has been served, via hand delivery, upon the following:

Susan Kimmel
Attorney Advisor
Wireless Telecommunications Bureau
Federal Communications Commission
2025 M Street, N.W.
Room 7002
Washington, D.C. 20036

International Transcription Service
Suite 140
1919 M Street, N.W.
Washington, D.C. 20036

Karen Lloyd

STRATEGIC POLICY RESEARCH

7500 OLD GEORGETOWN ROAD SUITE 810 BETHESDA, MARYLAND 20814 (301) 718-0111 (301) 215-4033 fax
EMAIL spri-info@spri.com

An Evaluation of the Access Board's Accessibility Guidelines

TABLE OF CONTENTS

EXECUTIVE SUMMARY i

ABOUT THE AUTHORS iv

INTRODUCTION 1

PUTTING THE PROBLEM IN PERSPECTIVE 3

 Mobility Disabilities 4

 Vision Disabilities 4

 Hearing Disabilities 4

 Motion Disabilities 6

 Cognitive Disabilities 7

 Exceptional Cases 7

 Concluding Thoughts 8

POTENTIAL ADVERSE CONSEQUENCES OF THE PROPOSED RULES 9

 Slowing Innovation 9

 Biasing Firm Size 10

 Exporting Jobs 10

 Encouraging Development of Hard-to-Use Equipment 11

 Compliance Costs 13

EQUITY AND MARKET CONCERNS 13

 Market Failures 14

 Transaction Costs 14

 Deficiencies in Training Designers 15

 Information Failures at Time of Purchase 15

 Equity Concerns 15

 Affordability 15

 Appearances 16

ECONOMIC CRITIQUE OF THE PROPOSED GUIDELINES 16

 Competitive Markets for Telecommunications Equipment Have Produced Substantial
 Benefits for All Consumers 16

 Costs of Requiring That Every Product Be Engineered to Meet Every Need 18

 The Costs of Universal Redundancy and Selectibility 18

 The Costs of Establishing Affirmative Duties Throughout the New Product Development
 Process 19

The Need to Optimize Technical and Economic Tradeoffs in the Implementation of Section 255	20
COSTS OF THE PROPOSED GUIDELINES	21
Estimating Compliance Costs.....	22
Description of the Production Process	22
Impacts on Work Activities.....	23
Estimates of Compliance Costs	25
Sizing the Market.....	25
A Lower Bound	27
Modeling Compliance Costs.....	30
Product-Specific Costs.....	32
Synopsis.....	33
ADVERSE CONSEQUENCES ON INNOVATION	33
WHY BUILDING-ACCESS ANALOGIES ARE MISLEADING.....	34
AN ALTERNATIVE APPROACH.....	36
Flaws in the Proposed Approach.....	36
Solutions	38
Recommendations.....	39
The FCC’s Role In Compliance.....	40
The FCC as Market Monitor.....	40
FCC Role in Fostering Accessibility Improvements	42
APPENDIX	45

EXECUTIVE SUMMARY

Accessible Design is a balancing act. To begin with, we must acknowledge that it is not possible to design everything so that it can be used by everyone.

Gregg C. Vanderheiden¹⁴⁰

The Access Board has proposed rules to implement Section 255 of the 1996 Telecommunications Act. Unfortunately, these proposed rules would, in the long run, do more harm than good to people with disabilities and would impose several significant costs on our economy. Specifically, the proposed rules would:

- Damage the innovation process,
- Distort the telecommunications and consumer electronics industries towards inefficiently small firms,
- Encourage the export of design and manufacturing employment,
- Force equipment to include a complex assortment of multiple and sometimes conflicting features, and
- Impose substantial costs as firms attempt to assure that their design processes meet the criteria of the proposed rules and in resolving disputes if any party expresses dissatisfaction with the outcome.

Innovation is at the heart of economic progress. The telecommunications manufacturing industry has been an especially rich source of practical benefit to Americans with disabilities. These innovations have been the natural fruit of an industry that has been left largely unregulated and is fiercely competitive. The proposed rules would impose a significant burden on the innovation process and therefore should be especially suspect. We urge the Commission to adopt policies which harness, not dampen, the energies of the market in this regard.

We also fear that the proposed rules would distort the marketplace. Smaller firms would be able to argue that they lack the resources and staff needed to carefully document compliance with the proposed rules. Similarly, the Commission would probably be less likely to press hard in enforcing such rules on a smaller manufacturer. A natural consequence of such effects would be to burden disproportionately innovation efforts in larger organizations and move the economy away from economic efficiency.

We also believe that the rules create a back-door incentive to export jobs. If a product is assembled in the United States from high-level subassemblies, the assembler can rightfully claim to

¹⁴⁰ *Accessible Design of Consumer Products*, 1992, Working Draft 1.7, by Gregg C. Vanderheiden and Katherine R. Vanderheiden.

be the manufacturer. In documenting the design process, the manufacturer can point to the capabilities of the high-level subassemblies as defining what is readily achievable. An overseas manufacturer who wishes to sell a product in the United States can provide the product as a collection of high-level subassemblies to a manufacturer in the United States. Such a two-step distribution process designed to get around the rules requiring consideration of effects on people with disabilities would be hard to distinguish from other similar activities that are carried out for sound economic purposes.

The Access Board's Guidelines seem to rest on an interpretation of Section 255 that requires that *every* new telecommunications product address be designed according to strict accessibility norms. As proposed, the Guidelines suggest going even further: that *every* product address *every* accessibility requirement by means of an engineering philosophy known as "Universal Redundancy and Selectibility." By this approach, each product would be endowed with the ability to switch between modes, each mode providing a different user interface configuration for a different constellation of disabilities. The epigram above, from one of the world's leaders in the design of equipment to meet the needs of the disabled community, recognizes the impossibility of such a mandate.

Consider a widely used communications product — the pager. Most pagers notify people that someone is trying to call them and provide them with a short numeric message telling the user what number to call back. But, there are also other pagers that provider users with voice messages or with text messages. While pagers are widely used and accepted, few understand the difficult technical challenges that have to be met in order for pagers to operate reliably, to support long battery life, and to be able to detect pages even in inside offices in an office building. Making every pager accessible to the blind would increase their size, decrease battery life, and increase the cost. Individuals with vision impairments have other alternatives, such as voice pagers or PCS phones, that offer them similar communications alternatives. Requiring every pager to be useful to everyone, no matter what his or her disability, would reduce the options available to the hearing-impaired and sight-impaired alike.

Finally, we believe that the out-of-pocket costs of complying with the proposed rules and establishing the fact of such compliance in an adversarial setting will be high.

The proposed Guidelines require that distinct, affirmative regulatory obligations arise under the Act at every stage of activity in the development of new telecommunications products. We estimate the scale of the development process affected by the proposed regulations. We also develop a model of the development process including the effects of the proposed rules. This model indicates that the added development costs would fall in the range of \$450 to \$750 million per year. As a check on this calculation, we consider similarities with the formal compliance required of manufacturers in Parts 68 and 15 and show that the numbers calculated by our model are consistent with the FCC's experiences in these programs. We also consider the added costs of making all products accessible to all consumers. We briefly sketch examples of typical products altered to address merely two modes of disability, at an annual industry-wide cost of \$250 million in materials alone.

We conclude with a discussion of alternative approaches the Commission might consider, based on previous Commission undertakings that have been widely accepted as successful. We propose

that the Commission conduct annual reviews of the state of accessibility to the nation's telecommunications infrastructure and act as a clearinghouse for identifying shortcomings in accessibility and new techniques for addressing them. Similar approaches have enjoyed considerable success, for example, in establishing access to satellite video distribution in outlying areas of the country otherwise not served by multichannel video distributors. We argue that an outcome-based regulatory regime would clearly meet the intentions of the statute and would likely result in the sort of economic activity likely to generate accessibility instead of bureaucracy.

ABOUT THE AUTHORS

Charles Jackson earned his PhD in electrical engineering from MIT. He worked as a digital designer and computer programmer in industry before working in government at the FCC and for the House Commerce Committee. He has written on policy issues of accessibility for people with disabilities, contributed to research projects to develop accessible electronic mail systems for the deaf and hard of hearing, and has testified on hearing aid compatibility before the Senate Commerce Committee. Also among his activities was a term on the board of directors of the Northern Virginia Resource Center for the Hearing Impaired.

Ross M. Richardson recently became Vice President of Rates & Tariffs at Zephyr Telecommunications, Inc. Dr. Richardson was formerly a principal in Strategic Policy Research, Inc., and closely involved in the preparation of this report. Prior to joining SPR, he was a Member of Technical Staff in the Network Systems Division at AT&T Bell Laboratories and for Network Architecture at Southwestern Bell Corporation (SBC). At AT&T, he developed new telecommunications network services based on Integrated Services Digital Network (ISDN), Intelligent Network (IN), and conventional telephony technologies. At SBC, he studied IN performance and developed strategic architecture plans for SBC's mobile, landline, paging and video networks in the United States and overseas.

John Haring is a principal in Strategic Policy Research, Inc. Dr. Haring formerly served as Chief Economist of the Federal Communications Commission and as Chief of the Commission's Office of Plans and Policy. He has prepared studies on a wide range of subjects including a large number of papers dealing with telecommunications economics and regulation. He is the author of five papers in the FCC's Office of Plans and Policy Working Paper Series and the "Telecommunications" entry in the *Fortune Encyclopedia of Economics*. He is the coauthor (with Ronald Cass) of a recently published book on international trade in telecommunications equipment in the American Enterprise Institute's Studies in Telecommunications series (MIT Press).

This report was prepared for the Telecommunications Industry Association. However, the views in this report are those of the authors and do not necessarily represent the views of TIA or any member of TIA.

The authors have extensive experience in the areas of telecommunications and economics. In addition to basic research and information gathering from a variety of relevant public sources (including the FCC), this report reflects interviews with engineering and management staff from several telecommunications equipment manufacturers and various data they provided. We focused our study efforts in three areas: (1) understanding the scope and extent of the communications needs of persons with disabilities, (2) identifying the potentially beneficial and adverse consequences of different types of remedies, and (3) estimating the costs of compliance with what we regard as the flawed approach embodied in the proposed Guidelines. We developed several alternative means of getting a handle on compliance costs and, at different times, reviewed our analyses with TIA members to supply a reality check. While we wish to acknowledge and

express our appreciation for useful input and comments from TIA members and the cooperation and support of TIA, we wish to make clear that the analysis and our conclusions are our own.

INTRODUCTION

By any reasonable cost-benefit calculus, the benefits of improvements in communications services to people with disabilities flow to every American. Every person without disabilities is only a moment away from acquiring a disability — a slip in the bathtub or on the ice, an opportunistic infection, an immune disorder, or normal accompaniments of aging that can cause a disability. Thus, every person benefits (at least in an expected-value or option-value sense) from improvements in communications for people with disabilities.

Similarly, almost every improvement in communications technology aimed at the general population helps many of those with disabilities. First, people with disabilities participate directly in the larger market for communications equipment and services. In many cases individuals with and without disabilities can use the same equipment. A person requiring a scooter to get around may have no limitations in using desktop telephone equipment. In other cases, many product features made possible by technology enhance the usability of general market equipment by persons with disabilities. Second, people with disabilities benefit when communications technology permits the economy to operate more efficiently — thus lowering the cost of the goods and services they consume. Similarly, people with disabilities benefit from the use of improved communications technologies by those with whom they communicate. For example, longer battery lives in wireless telephones means that the people they wish to contact are more likely to have their portables turned on.

In Section 255 of the Telecommunications Act of 1996 Congress imposed an obligation on manufacturers of telecommunications equipment and customer premises equipment to ensure that such equipment is “designed, developed, and fabricated to be accessible to and usable by individuals with disabilities, if readily achievable.” While Congress assigned enforcement of this statutory provision to the Federal Communications Commission,¹⁴¹ Section 255 charges the Architectural and Transportation Barriers Compliance Board with developing, in conjunction with the Commission, “guidelines for accessibility” of the equipment in question. Section 255 reflects Congress’s view that the market alone cannot be counted on to adequately serve the needs of

¹⁴¹ The Commission is generally authorized to enforce the Act and amendments at Section 710(a); Section 255(f) specifically entrusts the Commission with exclusive jurisdiction over complaints arising under Section 255.

those with disabilities. We concur with that view — but we are deeply concerned that regulations designed ensure that products are accessible will result in a long-run loss of benefits to those with disabilities as well as more general harm to our economy.

Two prototypical problems — hearing aid compatibility and access to windowed computer operating systems and the World Wide Web by those vision disabilities — illustrate the problems of accessibility for telecommunications and information services. It is also our opinion that these specific problems lie at the heart of concerns about accessibility to telecommunications. We explain each of these problems briefly.

Telephones without magnetic fields do not couple to the telecoils in many hearing aids. Relatedly hearing aids with telecoils can act as radio receivers and can receive interference from digital cellular phones.¹⁴² Regulations, in place for many years, require that telephones be built to support telecoils. The problem of interference is much harder — the most cost-effective solution is to modify the design of hearing aids to eliminate their susceptibility to such interference. However, this solution does not deal with the problems of existing hearing aids.

Programs running under Windows 95 and other similar graphics interfaces are difficult or impossible for those with vision disabilities to use.¹⁴³ This is not simply a question of operating system design. Although these operating systems permit software applications to be designed to support both text-based and graphics controls, applications designers, many of them independent of Microsoft or any hardware manufacturer, often fail to take advantage of such options. Similarly, many applications and websites on the World Wide Web are difficult or impossible for those with vision disabilities to use.¹⁴⁴

¹⁴² This problem is not limited to hearing aids with telecoils. Many types of consumer equipment can similarly pickup interference from radio transmissions unless they are designed to reject such interference. Such interference became quite acute in the 1970s when CB radio became popular. Hearing aids without telecoils may also be subject to such interference in some cases. But, the telecoil is, in essence, designed to be a small antenna and to pick up electromagnetic signals. In the case of hearing aids and cellular phones, the hearing aid can pick up signals both from the transmitted digital cellular signal and from the digital processing in the cellular phone. Telecoils can also pickup interference from fluorescent lights, electric motors, and computers.

¹⁴³ Microsoft Windows is the best known of such graphical interfaces. But Apple's Macintosh and the workstation X-Windows system depend in a similar fashion on the use of a mouse and screen display to control a computer.

¹⁴⁴ Access to the web by those with vision disabilities has gained considerable attention. See, for example, the article "On the Web — and Blind," by Don Jellinek, in the Jan/Feb 1998 issue of *On The Internet*, or "Bringing

(Continued ...)

A moment's reflection should allow one to empathize with someone who buys a cellular telephone only to find that her daughter cannot use the cellular phone because the hearing aid receives interference from the digital cellular signal or with the frustration of someone who is blind and is finding services on the Internet less and less accessible as more visual elements are incorporated into web pages.

It appears that specific accessibility problems such as these prompted the enactment of Section 255. Their solution should be achievable at low cost and provide significant potential benefit to those with disabilities.

Although we agree with Congress's determination that failures may occur in the telecommunications equipment market leading to harms to those with disabilities, we believe that great care must be taken not to do even more harm with a highly generalized approach to attempting to correct those market failures.

PUTTING THE PROBLEM IN PERSPECTIVE

The Census Bureau reports that there are about 50 million Americans with some form of disability and 25 million with severe disabilities.¹⁴⁵ A small fraction of these people have problems using the telephone. The Census Bureau reports that about 3 million people have difficulty using the telephone and about 1 million people are unable to use the telephone.¹⁴⁶ Different disabilities create quite different needs. Disabilities may affect mobility, vision, hearing, hand motion, cognition, or other activities. Let us consider some of the communications needs associated with several of those disabilities.

the Visual World of the Web to the Blind, by Debra Nussbaum, *New York Times*, March 26, 1998, page E8. It is also important to train web designers to make their web pages accessible to those with vision disabilities.

Relatedly, Microsoft recently teamed up with euroBRAILLE to make the Microsoft Windows operating systems more accessible to those with impaired vision. (*Microsoft Daily News*, June 11, 1998)

¹⁴⁵ *Americans with Disabilities: 1994-95*, by John M. McNeil, Current Population Reports, U.S. Department of Commerce, Census Bureau P70-61, August, 1997.

¹⁴⁶ Census Bureau, *Disability Status of Persons (SIPP)*, Table 1, last revised Wednesday, 25-Mar-98, at <http://www.census.gov/hhes/www/disable/sipp/disstat.html>.

Mobility Disabilities

Consider first a person with a mobility disability — for example, someone who normally uses a wheelchair. A cordless telephone or a cellular/PCS phone provides great value to such a person. When the telephone rings, he or she does not need to rush to answer it. Clearly, though, if one must carry around a portable telephone, size, weight, and battery life are important. In most such cases, a smaller unit with a longer battery life would serve the consumer's needs best.

Vision Disabilities

Consider a person with a vision disability — for example, someone who finds it hard to read text unless the print is large and the contrast high. A person with such a disability would find it hard to read the small LCD displays on many cellular telephones. Similarly, a person with an even more severe vision disability may be unable to use the graphical interfaces on many computers and may prefer telephones with larger keys permitting use of larger type on the keys.

Hearing Disabilities

Third, consider a person with a hearing disability. If the disability is severe, such a person would not be able to use a telephone.¹⁴⁷ Several important accessibility issues arise from the needs of the deaf and hearing-impaired community. We will discuss three of them briefly: telecoils, TTYs, and alerting devices.

Many hearing aids are equipped with a capability, called a *telecoil*, to pick up electrical signals directly from telephones. A telecoil makes hearing telephone calls easier. Telecoils are built into behind-the-ear and body aids, but not in-the-ear and in-the-canal aids. Telecoils were developed decades ago and took advantage of an extra, unintended magnetic field created by the telephone receivers in use at that time to connect hearing aids to telephones.¹⁴⁸

¹⁴⁷ Above, we cited the Census Bureau for the proposition that about 1 million people cannot use the telephone. That Census Bureau report states that 924,000 people cannot hear normal conversation and that 933,000 people cannot use the telephone. It seems reasonable to conclude that the vast majority of those who cannot use the telephone are hearing impaired.

¹⁴⁸ The telephone receiver is the speaker or earphone part of the telephone. The receivers in use from Bell's telephone until recently used coils of wire to generate magnetic fields that moved a sheet or membrane to vibrate air. Improved designs of such magnetic receivers or use of non-magnetic technologies reduced or eliminated the magnetic fields that telecoils depended upon.

Several problems have developed with telecoils, including the incompatibility of some telephones with telecoils and interference to telecoils from electronic equipment. Some more recent telephone receiver technologies do not generate the magnetic fields needed for operation of the telecoil. This problem became significant in the late 1970s and early 1980s, and Congress amended the Communications Act in 1983 to establish telecoil compatibility requirements.¹⁴⁹ A second problem with telecoils is their ability to respond to magnetic fields generated by electronic and electrical equipment. In particular, hearing aids with telecoils can act as tiny radio receivers and can pick up digital cellular radio transmissions or static from nearby electronic equipment.¹⁵⁰ As a consequence, some hearing aid users are unable to use digital cellular and PCS telephones because of a severe buzzing induced by the unwanted reception of digital signals.

Many deaf individuals use equipment called TTYs or TDDs to communicate with their family and friends.¹⁵¹ *TTYs* are terminal devices with displays, keyboards, and modems that connect to telephones and permit written (typed) conversation over telephone connections. The original TTYs were converted obsolete teletype machines using the 5-bit Baudot code that had been replaced by ASCII. These machines were donated to the deaf community by the operators of teletype networks and were often refurbished by volunteers from the industry. Modern TTYs are electronic devices, but they still use the old Baudot code for compatibility with other TTYs.

TTYs encounter a number of compatibility problems in working with modern computer and information technology equipment. In addition to the fact that TTYs do not represent letters using the same patterns of bits that modern computers use (the Baudot code is so limited that it does not distinguish between upper and lower case), the data modulation used by TTYs is different from the modulation used by most computer modems — hence, a TTY cannot dial in to

¹⁴⁹ PL 97-410, 96 Stat. 2043. This statute was substantially revised in 1988.

¹⁵⁰ We regard the problem of incidental pickup of cellular transmissions and static from electronics as a transitional problem. Design changes in hearing aids can suppress this effect at relatively little cost. We expect that consumers would value such improvements.

We also note that the FCC may have the authority under Section 302 of the Act to regulate the interference susceptibility of hearing aids. That Section gives the FCC authority to establish minimum performance standards for home electronic equipment and systems to reduce their susceptibility to interference from radio frequency energy. If hearing aids were classified as home electronic equipment, then the FCC would appear to have authority over their interference susceptibility.

¹⁵¹ The acronym TTY comes from teletypewriter, TDD from telecommunications device for the deaf.

standard computer ports (the modulation used for TTYs was a reasonable design choice in the 1960s, but is too slow for today's computer communications needs). The digital modulation used by TTYs cannot be recorded by some digital answering machines that were designed to store human voice, not abstract tones. Similarly, the TTY tones are usually not compatible with the voice coding used on digital cellular phones.

The deaf and severely hearing impaired cannot hear the ringing of a normal telephone. Instead, they need visual indicators, such as a flashing light or particularly loud ringing to alert them that a call is coming in (for their TTY, for example).

Motion Disabilities

Another form of disability is a limit on the range or speed of motion or on the accurate control of hands and fingers. The needs of people with motion disabilities vary. Some individuals have limits on their range of motion and benefit from the use of compact control panels that require little movement. Others, with difficulties in control, benefit from the use of control panels with larger, separated buttons. The text below, taken from a web site on disability access, describes some of the alternative keyboards available to those with motion disabilities.

Manufacturers provide small keyboards for people with limited range of motion¹⁵² more generally, there are a wide variety of keyboards designed to match different disabilities.

¹⁵² See <http://www.augmentative.com/acs-swk.htm>, which describes the Winmini keyboard as: "for people who need a smaller keyboard than the standard IBM/compatible computer keyboard, a WinMini plug-in is the perfect solution."

ALTERNATIVE KEYBOARDS

Mini Keyboard (TASH) is a small keyboard for a PC. It is designed for individuals who have difficulty using a standard keyboard due to limited range of motion.

Intellikeys (IntelliTools) is a large programmable keyboard with a variety of overlays designed for individuals with limited fine motor control. Only light pressure is required to activate the keys. Software is available to design custom overlays. Both Macintosh and PC versions are available.

The **Dvorak One-handed Keyboard** (Typewriting Institute for the Handicapped) allows a person with use of only one hand to type efficiently on a PC. Left- and right-handed versions are available. Software that re-maps keyboards to Dvorak layouts is also available.¹⁵³

Individuals with motion difficulties also benefit from the use of windowed “point-and-click” controls of computer systems. Pointing devices have been developed that follow the point a person is looking at on the screen. Using such a pointing device and a switch, actuated with the chin or by blowing on a straw, a quadriplegic can control a computer or use a computer to dial telephone calls.¹⁵⁴

Cognitive Disabilities

Some individuals have defects in information processing capabilities that affect memory or reasoning. Increased complexity of communications devices, with telephones having multiple operating modes or the need to remember passwords and command sequences, reduces accessibility for such individuals.¹⁵⁵

Exceptional Cases

¹⁵³ Source: University of Washington, Adaptive Technology Lab in the Computing Resource Center (CRC), at http://www.washington.edu/tech_home/atl/DOCS/atl.use.html.

¹⁵⁴ The same University of Washington website also contained the following statement: “HeadMaster (Prentke Romich Company) and HeadMouse (Origin Instruments) allow hands-free operation of a Macintosh or PC (HeadMouse only). A light-weight headset (HeadMaster) or a reflective dot worn on the forehead (HeadMouse) translates head movement to the mouse pointer. A variety of switches can be connected to emulate the mouse button.”

¹⁵⁵ Of course, some elements of added complexity, e.g., memory dialing, can alleviate the problems encountered by those with cognitive disabilities.

Combined or especially severe disabilities create added difficulties that cannot be easily dealt with using off-the-shelf solutions. Consider the plight of an individual who is both a quadriplegic and blind. Tools using point-and-click displays, usually of great value to a quadriplegic, cannot be used nor can Braille readers. Rather, solutions must be based upon audio signalling and limited control from chin switches or sip switches. Obviously, the market for such solutions is very limited — because people with multiple disabilities that limit communications comprise a small subset of those with disabilities. Yet, such individuals comprise a large portion of those that have difficulty using telecommunications.

The lack of off-the-shelf equipment to meet the needs of people with multiple disabilities is not a result of a market failure.¹⁵⁶ Rather, such devices are naturally expensive because they must be customized. The solution is direct subsidy either by philanthropy or the government.

Concluding Thoughts

A wide range of disabilities limit people's abilities to use telecommunications. Modern communications equipment (more generally information technology) has brought enormous benefits to people with disabilities. Unfortunately, the world is not perfect. The telephone is poorly matched to the needs of the deaf. Windows and the graphic web pages are wonderful for the motion disabled but create difficulties for the vision impaired. Some people need small keys, and some people need big keys. Any attempt to improve the current situation by regulation must take into account two fundamental truths:

- Innovations in information and communications technologies have brought enormous benefits to those with disabilities. Any policy that weakens the incentives for innovation will harm both those with disabilities and the larger society.
- Disabilities create conflicting needs. Unlike the case with building accommodation, where a visual alerting system does not interfere with an access ramp, a manufacturer cannot simultaneously build a PCS phone with both large, separated keys and small, closely spaced keys.

¹⁵⁶ In terms of economic jargon, developing specialized terminal equipment for such people would not meet a Kaldor-Hicks criterion — the benefits, measured by willingness to pay, will not match the costs.

POTENTIAL ADVERSE CONSEQUENCES OF THE PROPOSED RULES

This report provides an economic assessment of the Telecommunications Accessibility Guidelines the Access Board has adopted and the FCC has proposed.¹⁵⁷ Our analysis suggests that the approach embodied in the Accessibility Guidelines is not likely to enhance access to telecommunications and customer premises equipment for persons with disabilities who have difficulty using the telephone or are unable to do so. Indeed, the proposed approach may well thwart advances in accessibility as suppliers act to minimize regulatory risks in optimizing their investments in new product technologies. At the same time, the approach embodied in the Guidelines would carry high compliance costs; such costs represent resources that might alternatively contribute to greater well-being for persons with disabilities affecting the use of the telephone under a more productive approach.

We have identified five economic harms that would follow as a consequence of implementing the FCC's implementing the Access Board's guidelines:

- Damage to the innovation process,
- An inefficient shift in the balance between larger and smaller firms in the electronics industry,
- Encouragement of the export of design and manufacturing employment,
- Forced inclusion in equipment of a complex assortment of multiple and sometimes conflicting features, and
- Substantial compliance costs.

We consider each of these five harms in turn.

Slowing Innovation

¹⁵⁷ See Telecommunications Act Accessibility Guidelines, 36 CFR Part 1193 [Docket No. 97-1] RIN 3014-AA19.

Innovation is an engine of economic process and is an area in which the United States has a comparative advantage. Any regulation that would affect the innovation process should be suspect because modern assistive technology rests upon the foundation of general innovation in information technology.

The Access Board's guidelines would insert additional steps for review and documentation in the product design process. These additional steps would slow the movement of products to market and may make some marginal but otherwise potentially viable products unprofitable. Indeed, under the proposed rules, some innovations would never make it to the marketplace. For example, a small cellular/PCS phone with small keyboard, small display and no backlighting, might be quite useful for people with mobility disabilities who desire the convenience of small size and long battery life. But, such a unit would be less accessible to those with vision disabilities than would other designs with larger keyboards and backlit displays.

Biasing Firm Size

Enforcement of the proposed rules would probably result in a disproportionate differential burden on large firms. Small firms have more informal management structures and are less likely than large firms to put in place formal compliance programs. In addition, it is unlikely that the FCC or advocates for the disabled would have the political will to impose significant penalties on small firms. Establishing regulatory programs that bias this balance are likely to harm our economy.

Exporting Jobs

Although the proposed rules appear to take into account concerns that design and development would be undertaken outside the United States and are written to apply to equipment so designed, we see significant loopholes. One loophole is generated by the practice of building equipment out of high-level subassemblies or kits. If a domestic manufacturer chooses to build a system using high-level subassemblies, such as a display screen or a keyboard, the manufacturer can reasonably argue that its design process was limited to the selection of that subassembly from among those available on the world market. A product could consist of a collection of a few such high-level subassemblies together with some software and custom enclosures. The design of the subassemblies would not fall under the proposed rules.

A second loophole occurs if a product is highly successful outside the United States. Consider a hypothetical example involving the telecopier, which has become almost ubiquitous for businesses. Assume that the telecopier had not yet been brought to the market but that firms were considering bringing such a product to the market. A firm subject to the proposed rules might hesitate —fearing that it would be unable to demonstrate that it had fully complied with the requirements for accessibility for the blind. However, once the telecopier had succeeded outside the United States, consumer and firms would bring pressure to bear to allow the import of such equipment (or consumers would purchase such equipment overseas and bring it to the United States as personal property). Successful products developed outside the reach of the proposed rules cannot be kept secret from American consumers. Consequently, markets for such products would open in this country, but, manufacturers in the United States would have lost the first-mover advantage.

Encouraging Development of Hard-to-Use Equipment

The Accessibility Guidelines call for efforts (*i.e.*, expenditure of scarce resources) to endow each product model with the capacity *simultaneously* to address the needs of persons with many different kinds of disabilities. Where such efforts are impractical, the Guidelines require efforts (again entailing expenditure of scarce resources) to document that impracticality, presumably in a manner sufficiently thorough as to withstand legal challenge and avoid financial penalty.

Instead of breaking a big problem into a series of more solvable smaller ones, the approach embodied in the Accessibility Guidelines make every problem a big one not easily amenable to practical solution. Instead of promoting growth in markets for specialized products capable of producing improved access for individuals with disabilities, the current approach raises barriers to market growth and innovation for all products.

Consider the problems of making a pager accessible to both the deaf and the blind. Standard alphanumeric pagers are quite convenient for the deaf and profoundly hearing impaired. They can carry short messages in text form and can alert the user that a message has been received through silent vibrations. A similar pager is almost useless for a blind individual — the message on the LCD display is unreadable. However, the blind have other options —including pagers that deliver spoken messages and cellular and PCS phones. Requiring that every pager be capable of meeting the needs of both deaf individuals and of blind individuals would burden every pager with

unnecessary elements. Putting more modes in equipment —as suggested by the proposed rules —would make products harder for all consumers to use. These increased difficulties are likely to disproportionately affect those with cognitively disabilities. Additionally, costs would rise.

An alternative approach — permitting firms and markets to create a portfolio of communications products and permitting consumers to select from that portfolio the product that best meets their needs — is far more likely to meet the need of those with disabilities than a one-size-fits-all mandate.

One of the most telling critiques of the one-size-fits-all approach was offered in comments to the Board by the American Speech-Language Hearing Association to the Access Board:

ASHA supports the scope of the Section 255 guidelines regarding application to all telecommunications equipment and customer premise equipment (CPE). ASHA, however, would disagree to a blanket application of these guidelines to the manufacturers of specialized customer premise equipment (SCPE). We find no reference in the Communications Act of 1996 indicating SCPE are covered; therefore, the Access Board's recommendations go beyond the intent of Congress. The reference to SCPE in the current guidelines should be omitted as it is not part of the legislative intent and may unintentionally cause harm to the individuals this legislation is written to protect.

ASHA Comments Docket 97-1

ASHA goes on to argue that the design of CPE requires tradeoffs and that it is unwise to burden this design tradeoff with extra requirements for universal access:

SCPE is by definition and nomenclature “specialized;” SCPE is often tailor-made to fit the needs and lifestyle demands of a given individual. SCPE manufacturers are the innovators in the area of telecommunications accessibility, designing technology to meet user needs regardless of market size or potential for mass distribution. Due to this extreme regard for individualization, SCPE manufacturers’ financial assets, staff resources, and market size are often significantly less than that of the more generalized CPE manufacturer. SCPE permits accessibility for a given defined set of users who need a different format to input/output telecommunications information. SCPE permits a specific format and mode of communication which differs from that used by general population. *Changing that format or adding other modes may not be technologically or financially feasible and unnecessary in meeting the needs of the defined user. In fact such changes may even be detrimental to the purpose of the equipment.*

We could provide other quotes from manufacturers of SCPE. But, the point is clear — advocates for the disability community recognize that applying a one-size-fits-all approach to the design of some communications devices would harm rather than help those with disabilities. The conclusion to be drawn from such analysis is much more general: applying the one-size-fits-all philosophy to the general market would harm all consumers — those with and without disabilities.

Compliance Costs

The proposed rules would generate substantial compliance costs. Firms would have to document their product design and development process. Perhaps most costly, a mechanism would have to be put in place to review complaints about possible noncompliance and to referee disputes between manufacturers and others regarding noncompliance. While we believe that they constitute the smallest element in the negative impacts of the proposed rules, the compliance costs are easier to quantify than the other costs of the proposed rules. In Section VI below, we discuss this in greater detail.

EQUITY AND MARKET CONCERNS

In this section, we describe the social and market concerns created by accessibility needs and communications services and technologies. We believe that market failures account for only a fraction of the situations where people with disabilities do not obtain the telecommunications equipment and services best suited to their needs.¹⁵⁸ We think the principal concerns arise from the following:

- Market failures:
 - Transaction cost problems;

¹⁵⁸ Commissioner Harold Furthgott-Roth stated “This particular area of regulation may well be a rare instance of where the involvement of federal government introduces efficiencies unlikely to develop in the market.”

Similarly, Commissioner Powell stated, “I know that this is an area where free market forces alone are unlikely to address the specific needs of individuals, who solely because of life's unpredictability and randomness find themselves restricted by physical adversity. This is an area where government can help this community enjoy the fruits of independence that the seeds of telecommunications can yield and that the Act envisioned. The principle of universal service is ultimately inclusion, and the disabled community should not be overlooked.”

We believe that social concerns in this area are motivated by more than simply concerns about efficiency and market failure. However, a focus on efficiency is key to ensuring that those with disabilities benefit in the long run.

- Deficiencies in training designers; and
- Informational failures at the time of purchase.
- Equity concerns:
 - Affordability for uncommon cases; and
 - Perception of individuals with disabilities.

Market Failures

Market failures are often ascribed to markets that fail to produce the results commentators desire. But, technically speaking, a market failure occurs when the a competitive market does not produce an efficient *supply* of particular goods.¹⁵⁹ One common cause of market failure is transaction costs — for example, it may cost a consumer more to search out a product than that product delivers in value. We believe that several specific market failures play a significant role in limiting access by those with disabilities to telecommunications products and services.

Transaction Costs

A rough calculation illustrates the nature of such failures. There are approximately one million payphones in the United States and about one million hearing aid users who use telecoils. If we assume that a payphone has a life in the field of five years, then 200,000 new units are placed in the field each year. Expanding the capabilities of a payphone to support a telecoil adds about one dollar to the cost of a payphone. The added cost works out to 20 cents/year — roughly half the cost of a payphone call — to give each telecoil user the option of using every payphone. Based upon reflection and conversations with telecoil users, we judge that telecoil users would be willing to pay this small amount. The problem is not that these users are not willing to pay but that the market does not permit their preferences to be expressed efficiently. Similar problems abound. Consider the issue of making telephones in hotels and other public places hearing-aid compatible. The arithmetic is similar — but assuring hearing-aid compatibility for telephones in hotels would be more costly because there are more hotel-room telephones.

Consider, in contrast, the alternative of putting a TTY in every hotel room. TTYs cost about \$200, and there are three million hotel rooms and one million TTY users. If a TTY lasted five

¹⁵⁹ Many factors, including monopoly, externalities not reflected in the market, transactions costs, can lead to market failure.

years, the cost putting a TTY in every hotel room works out to \$120 per TTY user per year. Given that many TTY users carry their own portable unit with them and that hotels can purchase a few TTYs and provide them to consumers at the time of check in, it appears clear that installation of TTYs in all hotel rooms would be wasteful. Most of the benefits of such universal installation can be gained by less costly approaches. The lack of TTYs in every hotel room is not evidence of a market failure, but rather is economically rational — the need is not compromised, but is provided at a lower overall cost to society.

Deficiencies in Training Designers

One intervention that would increase the supply of accessible telecommunications equipment is to train designers in accessibility needs and the principles of accessible design. Here, the demonstration that such training would remedy a market failure is difficult. Nevertheless, it is our opinion that such is probably the case. Training generates no bureaucratic follow-on, and operates in the earliest stages of the product life cycle — when changes are least costly.

Information Failures at Time of Purchase

Failures can also occur at the point of purchase. For example, if retailers fail to explain limitations of communications equipment or fail to point out equipment that would better serve the needs of a consumer with a disability, then such consumers would be unlikely to obtain the equipment that best serves their needs. Similarly, if consumers are unaware of the alternatives available in the market, they may settle for equipment that is suboptimal. Education of sales people and improvements in advertising, point-of-sales displays, and sales literature are the steps are most likely to remedy this shortcoming. Such training could be a formidable challenge because many retailers have high staff turnover and manufacturers, for the most part, do not own the retail outlets that provide their products.

Equity Concerns

In addition to market failures, there are concerns about equity — to what extent should we as a society ensure access to telecommunications equipment and services over and above that which would be provided by the market?

Affordability

The fact that mass market products do not meet needs of those with multiple disabilities or exceptionally rare disabilities is not due to market failure. Rather such individuals need specialized or custom solutions. For example, providing an effective communications terminal for someone who is both blind and suffers from cerebral palsy in all probability will require unique equipment to meet the needs of that individual. Similarly, individuals with such multiple disabilities often have limited incomes and thus a limited ability to pay — thereby reducing the feasibility of market solutions. We believe that the economically rational tool to deal with such unique needs is subsidy — either through private philanthropy or public subsidy. Several such programs exist.¹⁶⁰

Appearances

People are also concerned about perceptions and equal treatment. Some would prefer a world where those with disabilities can satisfy as many of their needs as possible with off-the-shelf equipment meant for general consumption — even if such arrangements sacrifice efficiency. We disagree with this view. We believe that restricting the supply of products to assure that products appear equal harms many with commensurate benefits.

ECONOMIC CRITIQUE OF THE PROPOSED GUIDELINES

Competitive Markets for Telecommunications Equipment Have Produced Substantial Benefits for All Consumers

Product improvements and market innovation have enhanced accessibility and increased economic welfare for all telecommunications equipment consumers. To the extent that the process of innovation is inhibited, *all* consumers are likely to suffer losses of economic welfare as a consequence of their not having new and improved products and services for use on a timely basis.

The proposed Accessibility Guidelines raise a variety of barriers to new product development and innovation. By increasing product development costs, they raise the revenue hurdle a successful innovation must traverse. By diffusing development efforts, they inhibit productive specialization of effort and function. By raising the prospect of regulatory second-guessing of

¹⁶⁰ For example, chapters of the National Multiple Sclerosis Society make equipment available to some people with MS and some insurance policies pay for assistive devices.

managerial decision making, they discourage risk taking and encourage compliance efforts that follow the path of least resistance.

Accessibility guidelines should attempt first to do no harm and to afford dynamic forces of market competition maximum scope for enhancing accessibility capabilities. If the past serves as a guide, policies designed to spur rapid product development and innovation hold the greatest promise for meeting the telecommunications accessibility needs of persons with disabilities.

Costs of Requiring That Every Product Be Engineered to Meet Every Need

The Accessibility Guidelines require that equipment possess certain characteristics to be deemed *accessible* by individuals with disabilities. To be accessible, equipment must be operable without by those vision, hearing, or speech and with limited manual dexterity or limited cognitive skills. Defining specific disabilities that equipment capable of meeting various accessibility needs would address is unexceptionable. The problem with the Guidelines is that they are interpreted to mean that *every* piece of equipment is subject to the requirements for accessibility and, moreover, that *each* piece of equipment must be engineered so as to satisfy *all* of the disparate (and often conflicting) accessibility needs of persons with different disabilities.

Telecommunications equipment manufacturers produce a large number of different equipment models. To require that significant resource expenditures be incurred to ensure that each and every model complies with the requirements for accessibility would impose substantial compliance costs. Economically rational compliance efforts would, in contrast, likely focus on the discovery and embodiment of particular modifications to particular equipment models to enable them to serve the accessibility needs of individuals with particular disabilities or combinations of disabilities. A strategy that requires that costs be incurred to attempt to engineer every piece of equipment to meet every accessibility need would, in all likelihood, not produce the desired results and would waste scarce resources that could be more productively deployed in advancing accessibility needs.

The barriers to new product development and innovation that would occur as a byproduct of this approach would frustrate the primary source of progress in addressing the accessibility needs of persons with disabilities — new products with expanded and improved capabilities.

The Costs of Universal Redundancy and Selectibility

Requirements for the inclusion of multiple capabilities pose difficult design issues. Consider, for example, the provision of enhanced audio for persons with hearing disabilities. One approach might be to extend the volume range, thus affording the listener greater ability to increase the volume. If a person without impaired hearing accidentally turns the volume control up with this capability, he or she might experience discomfort or disturb others with the extra loud audio. Alternatively, provision of this capability might be triggered by a switch, but added selectivity raises cognitive problems as the complexity of equipment increases. Demonstrations that multiple

objectives such as these (*e.g.*, provision of multiple selective features *and* simplicity of operation) are not readily achievable would not likely be simple or inexpensive, especially when account is taken of the need for such analysis to withstand external scrutiny.

Instead of simplifying the tasks that need to be addressed to produce real progress, the proposed approach would complicate the search for solutions and set the bar so high that few suppliers, behaving rationally, are likely to jump over it. The prudent tack would be simply to avoid altogether the heightened risk of capital expenditures in the new environment and divert engineering resources to the task of documenting why the laws of physics and economics do not permit ready resolution of incompatible objectives.

The Costs of Establishing Affirmative Duties Throughout the New Product Development Process

The Guidelines compel attention to accessibility issues at all stages of product development and manufacture for every product. In contrast to tests for compliance of equipment with various well-established technical standards such as those for radio interference, the “readily achievable” criterion presents formidable challenges for compliance. Consider an analysis of whether a particular functionality can be provided without audio. It may be technically feasible to insert a voice chip and convert voice into text. A person with a hearing disability could then use this voice-to-text translation. Suppose, however, that the attendant cost increase threatens the economic viability of the product. If a company judges that incorporating accessibility features is not readily achievable because the required changes make the product likely to fail in the market, it would have to build a file documenting that judgment. That decision calculus would necessarily be subject to second-guessing. An objective threshold for economic viability is hard to conceive in the absence of a market test. Tests for economic viability are hard to specify and differ among producers.

Tests for product compliance would also have to be developed and their legal viability assessed. Compliance would be less readily achievable the stricter the standards for compliance. Thus, in addition to costs associated with determining whether accessibility functions are readily achievable and, if not, documenting their infeasibility — what might be termed the direct costs of compliance — there are also likely to be substantial indirect costs. Firms would need to develop administrative and scientific authentication processes to address compliance requirements.

The Guidelines envision that as new capabilities are invented, their inclusion in particular products would be required if “readily achievable.” Such inclusion may increase production costs, raise prices, reduce product demand, and lower profitability. Whether the increase in costs would be sufficient to render such inclusion *not* readily achievable would depend on the specific circumstances and would be difficult to determine.¹⁶¹ Verification of achievability would presumably entail a market test. Validity of such a market test could be subject to challenge. Was marketing adequate? Was product design optimal? The issue could turn on the adequacy of documentation; hence, there would predictably be tendencies toward a surfeit of documentation. The ultimate result may intensify efforts to ensure that business decisions were thoroughly and convincingly documented rather than any expansion of the well-being of persons with disabilities.

The Act also calls for equipment to be compatible with peripheral devices typically utilized by persons with disabilities. Certain types of equipment of a particular type could be made to function compatibly with certain types of peripheral equipment. A portable phone with a “hands-free” capability might, for example, work effectively with a hearing aid. On the other hand, other models may not be capable of functioning easily with peripheral equipment. A portable phone held in proximity to a hearing aid may produce an objectionable hum that may be difficult to remedy. Efforts to make the latter type of device compatible with peripheral equipment are likely to be costly and produce minimal benefits in terms of improved functionality; the misallocation of scarce research efforts under this approach would produce a deadweight loss as suppliers are compelled to deploy resources to explain why incompatible objectives are not readily achievable.

The need to jump through added hoops would also likely retard the introduction of improved products — even those products for which functional compatibility is clearly achievable. Delays in introducing new products reduce consumer welfare, producing economic losses in addition to the deadweight losses from nonproductive and thus wasteful documentation exercises.

The Need to Optimize Technical and Economic Tradeoffs in the Implementation of Section 255

¹⁶¹ Capabilities change over time. Product lead times are often such that capabilities that are not readily achievable when products are being designed may subsequently become achievable. The point at which capabilities improve sufficiently to permit specific capabilities to be embodied in equipment is not a bright line, but subject to debate and interpretation — an additional likely bone of contention in terms of justifying and second-guessing decision-making.

The Accessibility Guidelines do not take adequate account of the constraints imposed by technical and economic tradeoffs in the production and supply of telecommunications equipment. Such constraints necessitate choices in technology and product features to address customer needs efficiently and economize on scarce productive resources.

While advances in microelectronics create new ways of implementing systems, at any point in time there are tradeoffs between physical size and various product capabilities. Small physical size limits memory capacity, battery size, and the number of different functions that can be embodied in any electronic device. To add a function requires additional read-only memory, more power, and more board space. That entails sacrificing other capabilities or increasing physical size. The imposition of a minimum number of functionalities would restrict a manufacturer's ability to offer customers other desirable product features (*e.g.*, light weight, small size, convenient storage, ease of operation). These tradeoffs affect persons with and without disabilities.¹⁶²

The Guidelines require that equipment be usable with various peripheral devices that enable their use by persons with disabilities. One problem for compliance with this aspect of the Guidelines is that equipment is highly varied and often not standardized. Lack of commonality makes it difficult for different peripheral devices to interface with other pieces of equipment. At the same time, lack of standardization reflects a highly dynamic marketplace in which new products with new capabilities (requiring new serving arrangements) are being introduced all the time. Again, there is a tradeoff that needs to be recognized and optimized: It is possible to have more standardization and the beneficial consequences in terms of the peripheral device accessibility associated therewith, but most likely at the cost of reduced market dynamism and product innovation.

COSTS OF THE PROPOSED GUIDELINES

¹⁶² For example, persons with mobility disabilities derive significant benefits from lightweight wireless communications equipment. These benefits are necessarily sacrificed to the extent that added features to address other accessibility needs increase size and dissipate battery lives more rapidly.

In this section we identify the costs that would be imposed on society by implementation of the Guidelines. In thinking about such costs it is useful to divide such costs into two categories—actual expenditures (*e.g.*, the cost of added testing) and harmful, although unintentional, consequences of having the rules in place (*e.g.*, some products will not make it to the market).

Estimating Compliance Costs

To estimate compliance costs likely to be incurred under the Accessibility Guidelines, it is useful to describe in general terms the production process typically involved in producing the kinds of telecommunications equipment covered by the Act. This will provide some feel for kinds of work activities performed during the course of product development and manufacture. While the production process varies across product development efforts — with some projects involving only simple modifications of existing products with a truncated development period, other projects involve major systems and component development over an extended period, and still others entail the optimization of difficult design and manufacturing tradeoffs — it is nevertheless possible to generalize in a constructive way. This generic view then can supply the base from which to gauge the effects of the Guidelines' requirements.

The production process for telecommunications equipment can be broken down into a number of basic stages. We describe them in the logical sequence in which they occur, although actual production processes tend to be more complex, typically involving any number of information and design feedback loops, frequent design modifications affecting materials and component requirements, combinations of required work skills, and the organization of manufacturing and shop facilities. Development processes for software — and equipment in which software comprises a large fraction of the value added by the manufacturer — also typically differ somewhat from the general description offered here.

Description of the Production Process

Resources are limited, and product development filters the large number of potential products down to those for which the technical, financial, and marketplace risks and rewards are deemed most attractive. The product development process entails constant decision making and concomitant data collection and analysis. The process of reducing a fluid idea to decision-relevant data and specifying the detailed instructions required to fabricate equipment components as well as the component fabrication equipment is very costly. The process of deciding which

design features to ignore and which to risk spending on for the next stage of development itself constitutes a significant cost.

We divide the production process into four stages: research, specification and design, prototyping, and manufacturing startup. Research is the most basic step. It includes studies of physical phenomena (such as how metals harden) and studies of consumer behavior (such as how many display menu choices are optimal). Specification and design is the stage at which the concept of a product is conceived and the implementation of the product is developed. Prototyping is the building of one or a few test models of the product and the verification that the product performs as desired. Manufacturing startup is the transfer of the design from product development to manufacturing. It includes developing manufacturing processes and support materials such as user manuals.

Impacts on Work Activities

Section 255 requires that manufacturers “design, develop, and fabricate equipment to be accessible.”¹⁶³ The proposed Guidelines state that “[m]anufacturers shall evaluate the accessibility and usability of . . . equipment . . . and shall incorporate such evaluation throughout product design, development, fabrication, and delivery *as early and consistently as possible*.”¹⁶⁴

The Guidelines require that manufacturers “provide employee training appropriate to an employee’s function.”¹⁶⁵ This requirement would affect all stages of development. While the clerk or general manager in charge of some common back-office function might, under this rubric, merely require a level of sensitivity training and a survey of accessibility issues, the training “appropriate to the function” of an employee in basic research might require the same level of scientific sophistication and depth of knowledge that the researcher brings to their other work, a significant educational undertaking.

The Guideline’s expectation that the focus groups and samples each firm uses for market research include individuals with disabilities would affect the research stage. The impacts of this

¹⁶³ Cf. Section 255(b): “ A manufacturer . . . shall ensure that equipment is designed, developed, and fabricated to be accessible”

¹⁶⁴ Guidelines at §1193.23, emphasis added.

¹⁶⁵ Guidelines §1193.25(c).

requirement include not just the reworking of existing marketing and scientific research methods, but also the additional work required to regularly locate, assemble, and successfully interact with individuals with every type of disability. While we agree, and recommend below, that firms should educate their designers to the needs of people with disabilities, the Guideline's requirements appear burdensome and excessive.

The actual process of product specification and design would be significantly altered to accommodate accessibility needs for every disability in every product. For most companies, this would also affect existing strategies for market segmentation, entry and exit. Most important, it is likely that formal procedures would be put in place to document the consideration of each new product feature, however tentative, and to demonstrate that each dimension of added accessibility either was duly implemented as early as possible into the evolving design or was not readily achievable. Documentation and evaluation efforts would likely expand substantially.

The functional interdependencies among different parts of each product — among multiple products on each technological platform, and between the product and the production infrastructure in place — are made explicit and subjected to formal corporate decision making at the specification and design stage. Thus, the costs of each new accessibility capability would become understood, as would the costs — characterized as common planning expenses — incurred earlier in the process in which alternative approaches were abandoned or delayed due to universal accessibility concerns. The prudent corporation would likely install layers of formal reviews and documentation to be evaluated by the legal or regulatory departments.

The explicit economic costs of compliance would ultimately be felt most severely by the firm in the specification and design and prototyping stages. The accessibility problem ultimately requires actual physical testing of proposed models by disabled individuals. This can only occur after prototypes have become available. As contemplated by the proposed Guidelines, every prototype model would have to be tested for compliance on every dimension of accessibility. Due to the very nature of the prototyping process, this evaluation activity must occur before other engineering issues have been stabilized. Presumably, if design parameters change after accessibility testing has been performed, this testing must be repeated to ensure the product is still in compliance. This represents a departure from the distribution of risk in the new product development cycle the industry has relied upon to date. Heretofore, a firm could settle fundamental user interface issues at the early prototype stages, then shift attention to issues of

cost, performance, and ease of manufacture in the later phases of final product design and manufacturing startup. If later changes in design for cost or performance considerations resulted in a change in usability for consumers, the firm would at worst face the prospect of reduced consumer acceptance or outright product failure. In the new world proposed by the Guidelines, the firm would also be in violation of the law.

In contrast to other stages of production, the Guidelines have very specific recommendations for the distribution, sales, and support of new product introduction. The requirements include not only the training of people involved in sales and product support to interact with individuals with any of a broad range of disabilities according to standards that are currently unknown and may be expected to change and the development of a concomitant spectrum of sales and user information in a variety of modalities. We judge that these elements of the Guidelines would be less burdensome; and we doubt that they would have significant negative impacts. Indeed, we notice that many firms are providing such information today.

Estimates of Compliance Costs

Sizing the Market

It is impossible to gauge the full extent of the equipment manufacturing activity that would ultimately fall under the yoke of any formal Section 255 compliance requirements. Indeed, it is likely that a whole cottage industry would form around expanding the set of products affected. Among the types of telecommunications products currently manufactured for sale or use in the United States, it appears that the language of Section 255 could, at a minimum, arguably encompass subsets of at least the following:

- Ordinary, portable, mobile, and pay telephones;
 - Telephone central office equipment;
 - Terrestrial, satellite, and cable set-top boxes;
 - Computer software and hardware, including peripheral devices such as video displays, keyboards, printers, and audio speakers;
 - Modems and video codecs; and
 - Pagers and personal communications devices.

Below we use two separate approaches to identify the scale of economic activity affected by the Guidelines. The first approach is based upon Census data and corporate reports. The second approach, which we use as a check on our first approach, is to examine the volume of Part 15 and Part 64 devices registered at the FCC each year.

We gathered information on sales and research and development spending from the annual reports of three major communications products manufacturers: Motorola, a manufacturer of radios, computer chips and network infrastructure equipment; Lucent, the recently independent equipment manufacturer that was formerly known as AT&T Technologies and before that was known as Western Electric; and Microsoft, the computer software manufacturer whose most well-known product, Windows 95, contains software for remote access computing, Internet access, faxing, email, and other communications tasks. The results of this tabulation are shown below

Firm	R&D Expenditures (millions)	Sales (millions)	R&D Expenditures As a % of Sales
Lucent	\$4,047	\$26,360	15.4%
Microsoft	\$1,925	\$11,358	16.9%
Motorola	\$2,394	\$27,937	8.6%
Total	\$8,366	\$65,655	12.7%

The tabulation above shows that representative firms spend about 10 to 15 percent of their gross revenue on R&D activities. In our analysis below, we assume that product design and development costs total 12 percent of industry gross revenue.

The Census Bureau classifies manufacturing industries by a code known as the standard industrial classification (SIC). SIC codes may be either two-digit, three-digit, or four-digit. Three-digit codes are subdivisions of two-digit codes. For example, SIC code 36 is electronic and other electric equipment and code 361 is electrical distribution equipment. The relevant two-digit code for understanding the effects of the proposed rules is SIC 36 — electronic and other electric equipment. The Census Bureau reported that firms with this SIC code accounted for \$300 billion

worth of industry shipments in 1995.¹⁶⁶ But, clearly this SIC code includes other activities besides telecommunications equipment. The three-digit SIC codes 357 (computer and office equipment) and 366 (communications equipment) include the economic activities primarily affected by the proposed rules. The Census Bureau reported that the value of industry shipments in 1995 for code 357 was \$90.2 billion and the value of shipments for code 366 was \$58.8 billion, for a total value of shipments of \$149 billion. Assuming a 12 percent ratio of R&D costs to shipments, we obtain a figure associated R&D expenditures for these industries of about \$18 billion in 1995. We believe that roughly two-thirds or \$12 billion of this R&D expenditure is for products covered by the Guidelines. Even a slight burden on this effort would impose substantial total costs on our society.¹⁶⁷

If we assume a distribution of the scale of project development projects, we can estimate the total number of projects associated with \$12 billion of development costs. We have performed such a calculation — using the model described in Appendix A. We estimate that development of 5,000 products per year would account for \$6 to \$12 billion in research and development costs. We also estimate with this model, that **compliance costs alone for these projects would lie in the range of \$450 to \$750 million per year.** We believe that the consumer harms from damages to the innovation process would be much higher.

A Lower Bound

To estimate a lower bound on the costs associated with formal compliance with the proposed Guidelines, we need as a starting point an estimate of the number of new products introduced each year in the United States that are likely to fall within the scope of Section 255.

We use the equipment subject to the FCC's Part 68 and Part 15 rules as a conservative surrogate in this regard. The FCC's rules in Part 68 govern the physical characteristics of devices that can be connected to the Public Switched Telephone Network (PST), and the rules in Part 15 limit the amount and nature of radio frequency interference that a device may generate.

¹⁶⁶ U. S. Department of Commerce, Bureau of the Census, *1995 Annual Survey of Manufactures*, Statistics for Industry Groups and Industries, M95(AS)-1, Table 2, page 1-22.

¹⁶⁷ We note that our analysis using SIC codes 357 and 366 is similar to that used in Appendix E (Initial Regulatory Analysis) of the NPRM to count the number of small business entities that would be affected by the proposed rules.

Manufacturers of telecommunications and electrical equipment must ensure that the products they sell comply with these rules before they are marketed in the United States and, therefore, extensive effort is put into designing and testing each product type for compliance. There is thus a strong analogy between the administration of Parts 68 and 15, on the one hand, and the compliance regime embodied in the proposed Guidelines on the other.¹⁶⁸ Moreover, administration of Parts 68 and 15 has been in place for decades now and, subject to qualifications that we spell out in greater detail below, the pool of equipment affected has the advantage of being in many respects a known quantity. Finally, the implementation of Part 68 and Part 15 had provided useful insights into the kinds of impacts the proposed Guidelines are likely to have on manufacturers.

Our first application of the surrogates is to estimate a lower bound on the number of firms and new model types that might be affected by the Guidelines. Turning first to the Part 68 data, in a typical year, the FCC estimated that it receives an average of approximately 2,400 Part 68 applications from approximately 800 firms.¹⁶⁹ Annual data, however, tend to under represent the large number of firms that introduce new products less often than annually. Moreover, firms seeking Part 68 registration (“applicants”) are usually those firms marketing the equipment in the United States, not necessarily those doing the manufacturing. It is not uncommon for each such marketing entity to rely on multiple manufacturers to supply its product; thus, the 800-applicant figure is much lower than the number of manufacturers affected by Part 68 requirements. If we instead consider data from the Commission’s twenty years of operating the program and conservatively assume that the ratio of applicants to manufacturers remains constant, we can estimate that the 800 applicants relied on approximately 1,800 manufacturers, some of them vertically integrated, to produce their products.

¹⁶⁸ We emphasize that the analogy is only that: an analogy. We propose to use these costs *merely as surrogates*, not as starting estimates on the actual costs themselves. For example, in many places the Part 68 and Part 15 costs may include equipment which is arguably outside the scope of Section 255. The work involved in isolating the impacts of this extraneous equipment would obviate the advantages of using the surrogate in the first place. And since we argue elsewhere that the actual costs of the Guidelines as proposed is likely a *multiple* of the lower bound we construct, isolating the extraneous content would merely provide a false precision.

¹⁶⁹ Statistics regarding the FCC’s Part 15 and Part 68 programs were provided by the FCC.

Certification and type acceptance data for 1996 similarly show that approximately 1,500 firms applied for certification under Part 15 and other programs.¹⁷⁰

As we have stated, Part 15 affects equipment capable of causing electromagnetic interference with radio frequencies, and Part 68 deals only in equipment that is to be directly connected to the PSTN. In contrast, our ultimate purpose is to gauge the level of economic activity affected by the Board’s Section 255 Guidelines, which address the accessibility of all telecommunications and customer premises equipment. How valid a surrogate are Part 15 and Part 68 models?

Part 15 and Part 68 models likely represent a very conservative lower bound for purposes of gauging costs of compliance under the proposed Guidelines. Most Section 255-affected equipment does not connect directly to the PSTN. Indeed, for any connection to the PSTN via a Part 68-affected device, there will likely be many multiples of Section 255-equipment types that will use that device to connect to the PSTN. Thus, the number of model types that would be affected by the Guidelines (each corresponding to a thread of some length through the new product development path) would likely be some large multiple of the number of equipment model types affected by Part 68.

A survey of 1996-type acceptances and certifications under Part 15 reveals that nearly half of the applications centered on computer or computer peripheral equipment. In a day when nearly every computing device sold is capable of connection directly or indirectly to other computers, it is difficult to believe that these devices and those connected to them will not fall within the ambit of Section 255. However, in order to generate a conservative lower bound, we culled the 1996 data to include only applications falling within Equipment Class Descriptions that might include pagers, cordless telephones, and other equipment of an ambiguously classical telecommunications nature. Of the 66 Equipment Classes represented in the 1996 data, we chose only applications falling within the following categories:

Telecommunications Equipment Classes			
Class	Description	Class	Description

¹⁷⁰ The vast bulk of these applications are for equipment under Part 15, but other programs represented in smaller numbers included Parts 18, 22, 74, 80, and 90. Also, since August 1996 the FCC has also run a self-certification program, causing some large number of applications and manufacturers to “disappear” from the Part 15 statistics.

CXX	Communications Receiver
CYY	Low-Power Communications Device Receiver
DSS	Spread Spectrum Transmitter
DXC	Low-Power Transceiver, Rx Certified
DXT	Low-Power Transceiver, Rx Verified
DXX	Low-Power Communication Device Transmitter
ETB	Cordless Telephone Base Transceiver
ETR	Cordless Telephone Remote Transceiver
ETS	Cordless Telephone System
PCB	Nonbroadcast Transmitter

PCE	Nonbroadcast Transmitter
PCF	Nonbroadcast Transmitter
PCT	Nonbroadcast Transmitter
PUB	Unlicensed PCS Transmitter
PUE	Unlicensed PCS Transmitter
PUT	Unlicensed PCS Transmitter
TNB	Nonbroadcast Transmitter
TNE	Nonbroadcast Transmitter
TNF	Nonbroadcast Transmitter
TNT	Nonbroadcast Transmitter

This has the net effect of reducing the 9,218 total 1996 applications in our pool to approximately 2,500. Viewing the Part 68 and Part 15 as a whole and ignoring (once again, with conservative effect) that equipment in one may not necessarily fall in the other, we can model annual new product output in the United States for telecommunications equipment as 2,500 new product introductions per year from, for the sake of argument, 1,200 manufacturers. Of course, there are many telecommunications products that do not require Part 15 or Part 68 certification (*e.g.*, web browser software or a central office voice mail module). Consequently we know that the above count significantly underestimates the number of products affected by a substantial factor — probably somewhere in the range of two to five.

Notice that our two estimates are consonant — the count of FCC activities of 2,500 products per year (a count that must miss many products is biased low) and the estimate of 6,500 products per year based upon industry sales — fit together reasonably well.

Modeling Compliance Costs

At a minimum, the proposed Guidelines envision a regime in which the Access Board maintains a constantly lengthening checklist of performance parameters for device inputs and outputs. The prudent manufacturer would have little choice but to respond to these requirements by establishing a cadre of lawyers and regulatory experts to follow the constantly shifting standards, represent the company's interests in the ongoing process, and ensure that new standards are implemented within the firm. A test laboratory would also need to be established, with engineers versed in the science behind each new standard, to test each final model for

compliance. We now turn our attention to gauging these more formal costs of complying with the proposed Guidelines.

The annual costs associated with Part 68 and Part 15 compliance are significant. The FCC itself, which merely has to test these final products for compliance against well-established technical standards using a stable base of equipment, has a laboratory of 35 employees with a \$2 million annual budget. It is not surprising that manufacturers, who must actually design, develop, and manufacture the equipment in compliance with these standards, spend several times more per year. One large, vertically integrated manufacturer we interviewed designs, develops, and manufactures over 100 new U.S. product models a year. It estimated that the formal aspects of Part 68 and Part 15 compliance and the associated engineering and regulatory activity require 50 full-time staff equivalents combined with \$50 million worth of lab equipment. This works out to about \$50,000 per product approved. If same cost applied to all 5,000 products affected by the Guidelines, the cost would total \$250 million per year.

How suitable are these Part 68 and Part 15 data as a surrogate for compliance costs under the Guidelines as contemplated? As we have already observed, Part 68 and Part 15 compliance is based on a compact, well-defined engineering problem expressed in terms of established technology and administered according to stable, well-established law and regulations. The compliance effort suggested by the Guidelines is likely to be substantially larger. First, the problem is quite the opposite of compact: its is entirely open-ended. From the perspective of an engineer who must ultimately array physical and material phenomena in a single, well-defined way, there is no stable, objective, closed technical definition of disability, let alone such a definition of accessibility. Indeed, there is no clear method of developing either. Second, the Guidelines contemplate a shifting, continually evolving body of requirements on manufacturers that, presumably, would closely follow the cutting edge of science and technology. Third, the vague yet mandatory decision-making dynamic envisioned by the Guidelines would be no help in establishing stability for these standards, but would instead be the opposite. A firm or group of firms that decide that an interface is acceptable if 8 of 10 of the disabled in the affected class can satisfactorily distinguish between two states of an output device would inevitably be challenged by complainants who believe that the appropriate standard should be 18 out of 20.

We developed a simple model that considers the development process to be divided into four stages:

- Research,
- Specification and Design,
- Prototyping, and
- Manufacturing Startup.

The model considers four different scales of projects:

- Simple repackaging of existing products,
- New models of existing products,
- Next generation of simple products or upgrades to complex products, and
- Major new technology platforms.

The model inputs consist of estimates, developed with industry experts, of the fraction of projects that fall into each category, the level of effort and duration of each of the four stages, and the percentage cost increase from compliance with the Guidelines at each of the four stages.

Our model predicts that the added costs of compliance will fall in the range of \$450 to \$750 million per year. Notice that this is comparable to the per product costs associated with Part 15 and Part 64 compliance.

Product-Specific Costs

Our focus has thus far been exclusively on process costs. To get a feel for direct effects on product prices from implementation of accessibility features, a few examples may suffice.

The FCC estimated that each year 25 million cordless telephones and another 25 million corded telephones are sold in the United States. Let us consider only the materials costs ultimately borne by the market of universal compliance with only two of the Guidelines' more conventional, well-defined requirements: the installation of a standard jack for interface to special peripheral equipment and the installation of a motor to allow for a vibrating alert mode. Standard jacks and associated circuitry are very well understood from an engineering viewpoint and might be added for a unit price of perhaps 50 cents. The motors and mechanical subassembly associated with vibrators — which, incidentally, require a good deal of engineering before the overall product can meet conventional product lifetime standards — might conceivably be had for \$4.50

per unit, for a total of \$5.00 per unit, yielding total cost in parts alone of a *quarter of a billion* dollars per year for simply these two of a manifold number of products potentially affected.

	Average Per Model	Industry-wide
Impacts on Product Development	\$70,000 to \$115,000	\$450 M to \$750 M
Illustrative Product Costs	\$5.00 per unit	\$250 M

Synopsis

Based on conservative assumptions, our analysis suggests that a lower bound estimate of compliance costs under the Access Board’s approach could easily run to more than a billion dollars per year (see table above).

ADVERSE CONSEQUENCES ON INNOVATION

The process that leads to conception of new products is stochastic and serendipitous; it is apparently not a highly rationalized, consistent process either within any given firm or across different firms. New ideas often appear to be generated almost randomly through a variety of means: customers surveys, market research, and consumer feedback often provide pertinent input information; sometimes new product concepts are the result of individual brainstorming or grow out of laboratory research; and sometimes products are natural extensions of existing products. In some companies, development of new products is more systematized than in others, but, in general, ideas for new products are generated in many different ways. This is not a process easily amenable to rationalization for particular ends.

The vibrating pager provides a good example of a product that improves the well-being of persons with disabilities, but whose conception had little to do with conscious efforts to help persons with disabilities. It resulted from customer feedback indicating that people working in noisy environments were missing pages. These customers could not hear, not because of a disability, but because of the environment in which they worked. Engineers created a small vibrating device so that pagers could function effectively in noisy environments. As it turned out, the market for vibrating pagers turned out to be even larger. Many people want to be able to receive pages during business meetings and conferences without disturbing others. The market

grew, and costs declined as economies of size were realized. Other new features and functions were also added (*e.g.*, alpha-numeric displays). The result is now a set of products that are economical to supply and purchase and help improve the well-being of some people with disabilities — a good result but one that was not the intended at the outset.

Thus, new technical capabilities primarily occur as a result of experimentation, trial, and error. In most markets, new product ideas are generally test marketed. Sometimes new products and processes are subjected to a full-scale market test and fail completely. Even failures, however, often produce valuable lessons. Successes and failures by some companies produce guideposts and examples for other companies besides the initial experimenters.

The approach embodied in the Guidelines promises to make experimentation and innovation more costly by raising development costs, increasing the number of criteria new products must satisfy, erecting regulatory barriers, and raising the amount of revenue a new product must generate. With the extra requirements and the likelihood of second-guessing and potential penalties, the costs and risks associated with new product development would be increased well beyond those that already exist. The Guidelines may thus deter those very activities that are the main sources of product improvements and accessibility advances.

If the goal is discovery and enhancement of service features to meet the needs of persons with disabilities, a good approach should encourage *greater* experimentation and risk-taking to discover and deploy solutions. That is not to say that government should not require that particular needs be addressed, but the means sanctioned to address those needs should be conceived in a manner that holds the greatest promise of producing improvements. The main promise held out by the Accessibility Guidelines is for large amounts of documentation explaining why the desired objectives are not readily achievable and lengthy disputes over the issue of whether articulated rationales are sufficiently persuasive.

An approach to accessibility requirements that inhibits product innovation is likely doomed from the start. Such a tack is difficult to understand given the role innovation has historically played in generating advances in accessibility for persons with disabilities.

WHY BUILDING-ACCESS ANALOGIES ARE MISLEADING

The literature on communications devices is replete with analogies to building access for those with disabilities. But, such analogies are fundamentally misleading. In almost all cases, access features in buildings advantage some while disadvantaging no one. My wheelchair ramp does not interfere with your visual alarm. Consider the following access features and how few they disadvantage:

- Door levers instead of round handles,
- Stalls in bathrooms,
- Lowered drinking fountains,
- Visual alarms,
- Ramps parallel to stairways,
- Elevators parallel to escalators, and
- Elevator labels in Braille.

In contrast, with telecommunications and information terminals and services there are many clear clashes of needs. Consider the following tradeoffs:

- Small keyboards versus big keyboards,
- Multiple modes versus cognitive complexity,¹⁷¹
- Portability and light weight versus size of display, and
- Point-and-click interfaces versus character-oriented controls.

Each choice between these pairs of design elements benefits one group of individuals with disabilities but disadvantages another group.

The readily affordable standard also differs. In a building, the primary determinant of affordability is construction cost. In contrast, there are multiple determinants of affordability for telecommunications equipment, including design costs, manufacturing costs, and lost sales. This third element, lost sales, necessarily has a subjective component. People differ in their opinions on whether or not consumers would accept a larger and more expensive pager with a larger

¹⁷¹ Consider that complexity is a fundamental problem for all consumers today with modern information technology products.

display. Regulators are unlikely to be able to effectively and fairly review a firm's forecasts about the likely marketplace success of specific products.

To recapitulate, analogies from building access, where needs rarely conflict and the cost structure differs, are not necessarily applicable to telecommunications equipment and services access.

AN ALTERNATIVE APPROACH

Flaws in the Proposed Approach

The approach embodied in the proposed Guidelines entails very specific proscription of compliance efforts in two important ways: (1) the Guidelines require efforts to make each and every product serve the needs of persons with disabilities, and (2) the Guidelines require efforts to make each product simultaneously meet the (sometimes conflicting) needs of persons with different disabilities. It is not a matter of trying to create a variety of specific products to meet the needs of persons with specific disabilities but rather of making every product capable of simultaneously meeting the accessibility needs of persons with different disabilities.

As we have remarked, this is not a strategy likely to produce improved equipment or service accessibility for persons with disabilities; instead it sets demanding marks for authentication efforts to document that equipment or serving arrangements capable of satisfying such disparate objectives are, in fact, not readily achievable. The requirements are probably impossible to achieve; therefore, compliance efforts would primarily consist of demonstrating and explaining why the requirements are not readily achievable in specific contexts. The result would likely be a process that is long on creation of paper trails and second-guessing but short on improved accessibility for persons with disabilities. Given the increased costs of and barriers to product innovation under the Guidelines, improvements in accessibility may well fall short of what might have occurred in the absence of changes in government policy. It may well be that the welfare of *all* consumers — disabled individuals included — would be significantly reduced on account of the reduced product innovation and higher production costs engendered by the added regulatory burdens.¹⁷²

¹⁷² As the Commission is well aware, delays in the introduction of telecommunications products and services that ultimately prove successful in the marketplace often entail very large consumer welfare losses. Different

(Continued ...)

The Accessibility Guidelines do offer firms supplying equipment with the means (perhaps illusory) to comply with the statute's mandates. In particular, as long as firms can document why the requirements are not readily achievable, they may ostensibly be judged to be in compliance. This is a genuine benefit (although one different from the principal statutory objective of improving accessibility for persons with disabilities), but one that is likely purchased at a high cost. In particular, the added layers of compliance bureaucracy add costs but do not contribute to enhanced productivity in terms of improved accessibility. In addition, some means of statutory enforcement are required and the government presumably needs some empirical basis on which to base findings about the scope and extent of compliance efforts and the statute's effectiveness in achieving its objectives.

Given the shortcomings in the approach embodied in the Accessibility Guidelines, the question naturally arises as to what would constitute a more reasonable alternative approach to achievement of statutory objectives in lieu of the approach embodied in the Guidelines? In our view, there are two important changes in the Guidelines that could produce significant improvements in their effectiveness, both in terms of increasing accessibility benefits for persons with disabilities and in terms of reducing deadweight compliance costs.

The first recommended change would entail abandonment of the unachievable objective of having each and every product equipped to meet each of the diverse needs of persons with disabilities. That approach is not only likely to prove ineffective in producing advances in accessibility, but also likely to impose higher costs on all consumers, including persons with disabilities.

The second change we would recommend is for the FCC to seek to ensure achievement of legislative objectives through a formal process of monitoring, reporting and review. The FCC has used this approach successfully in other contexts, and such an approach would be more in keeping

estimates of the costs of cellular delay, for example, put a value on the attendant consumer welfare losses in the tens of billions of dollars. See C.L. Jackson, T. Kelly and J.H. Rohlfs, *Estimate of the Loss to the United States Caused by the FCC's Delay in Licensing Cellular Telecommunications*, November 8, 1991 (revised) (regulatory delay in introduction of cellular service in the United States imposed \$86 billion welfare loss on the economy); and J. Hausman, "Valuation and the Effect of Regulation on New Service in Telecommunications," November 1997 (welfare loss from cellular delay estimated at \$31-49 billion).

with the reliance on market forces that generally characterizes the Telecommunications Act's informing philosophy. This is a case where, given the nature of the goals and the means likely to be available to achieve them, detailed proscriptive regulation seems almost bound to fail. At the same time, there is an immense reserve of good will available that can be exploited and directed toward the production of improved devices to address the accessibility needs of persons with disabilities. The government can play an important role in providing direction and guidance to ensure that such resources are productively deployed and genuine progress is achieved.

Solutions

We offer solutions to each of the separate problems — market failures, distributional concerns, and issues of appearances and recommend modifications to the Section 255 Guidelines.

Market failures have already been solved for telecoils. A reasonable case may be made that a market failure exists in the training of design staffs. Requirements that manufacturers institute programs for training their design staffs in principles of accessible design and in the needs of people with disabilities would also probably serve efficiency.

The problem of information failures at time of purchase can be addressed by requiring better marketing information and the availability of marketing information to those with disabilities. Both Section 255 and the Access Board's Guidelines address this problem. The problem of ensuring that retail staffs are properly trained is more difficult. The proposed rules reach the carriers and their marketing staffs but do not deal with the retail distribution of consumer electronics.

Distributional concerns associated with meeting the needs created by rare disabilities are unlikely to be met by regulation of manufacturers and service providers. Rather, various forms of direct subsidy are needed for such orphan conditions.

The problem associated with concerns about categorizing or stigmatizing those with disabilities appears difficult to solve. We are concerned that any attempt to solve this would result in a reduction in the solutions available to those with disabilities. Further, a successful solution would not eliminate the need for special solutions for many with disabilities. Reducing the supply of equipment explicitly designed to solve problems created by disabilities and reducing

the marketing opportunities for such equipment might have the undesired result of reducing the supply of equipment to those with the less common disabilities and may also increase any negative images associated with specialized communications equipment.

Recommendations

We believe that incorporation of the following principals would serve both economic efficiency and the needs of persons with disabilities.

There should be separate treatment of consumer products, and products and services, such as payphones, where the consumer has a less direct voice in equipment selection. In this case regulations of telecommunications service providers would usually suffice to ensure that the goals are met.

Consumer products should be subject to a “choice principal.” At the very least, entire product lines should be considered. For example, if a firm provides a speaker phone, the firm should be able to provide a similar telephone without the speaker phone capabilities and remain in compliance with any rules adopted under Section 255. Similarly, the reasonable availability of product alternatives should remove the need for a manufacturer’s product line to meet a specific need. For example, many vendors already supply speaker phones. There is no need for a requirement that all telephone equipment manufacturers supply speaker phones.

If a firm claims that lack of market demand makes providing a specific product not readily achievable, the burden of proof should be on any complainants to show that market demand exists. Further, such a showing should be held to a high standard of proof.

Equipment manufacturers should be able to demonstrate compliance with Section 255 for consumer products by:

- Accessible labeling, packaging and marketing of all products;
- Having in place a training program that assures that design engineers are familiar with the principles of accessible designs, with the needs of people with disabilities, and existing with solutions for disability needs; and
- Making a practice of including members of the disability community in their market

research and product development research.¹⁷³

Any regulations adopted to implement Section 255 should explicitly recognize the problem of conflict between the needs created by disparate disabilities. Specifically, products containing a feature that benefits people with a specific disability (*e.g.*, a small keyboard) should be exempt from complaints regarding the unsuitability of that feature for other disabilities.

Given the wide variety of software providers and the international marketing of software over the Internet, software products should be excluded from the rules.

The FCC's Role In Compliance

Compliance efforts under the proposed Guidelines are likely to be focused primarily on documentation of good-faith efforts to incorporate accessibility features and to justify inability to achieve mandated results in terms of their being not readily achievable for various technical and economic reasons. Under this approach, a supplier's ability to pass muster is largely reckoned in terms of its ability to demonstrate that it strove mightily, notwithstanding any failures to produce tangible results, and its ability to present convincing analysis rationalizing the decisions it has made to an external observer.

In our view, compliance should instead primarily be reckoned in terms of results rather than efforts expended, which is not to say that effort does not provide a reasonable measure of good faith. The issues presented by the accessibility provisions of the Telecommunications Act appear to lend themselves to an approach in which the FCC supplies a clearinghouse for exchanges of relevant information and differing views and serves as an ombudsman, pointing the way and pushing for workable solutions. This is a role the Commission has successfully performed in other similar venues with salutary results.

The FCC as Market Monitor

¹⁷³ Such a practice should not be read to require involvement of the disability community in every product development effort. Rather, the firm should have in place some program for maintaining knowledge and awareness of the needs of those with disabilities.

In the late 1980s, the FCC was confronted with a problem that was less complex and certainly less serious than the unmet needs of persons with disabilities,¹⁷⁴ but was similar in some relevant respects to the problem it now faces in ensuring achievement of the Telecommunication Act's goals of product and service accessibility for persons with disabilities. At that time, satellite video programmers had begun to scramble their signals electronically, thereby preventing persons with home satellite dishes from receiving the transmissions of many popular cable network program services that had previously been available for the taking. Satellite dish owners typically reside in rural areas where over-the-air viewing options are often limited and cable television systems have not been installed because it is uneconomic to do so given low population densities. By installing home satellite dishes, consumers in these areas were able to receive the signals of satellite programmers that were being transmitted to cable systems for local distribution elsewhere and, thereby, to alleviate their reception difficulties.

Rural interests are well represented in Congress, and satellite signal scrambling resulted in significant expressions of Congressional concern about the plight of satellite dish owners, who had typically invested substantial amounts to install their home dishes but then found themselves largely bereft of programming with the onset of signal scrambling. Persons who reside in rural areas rely heavily upon various communications services to maintain effective links to the societal mainstream, and communications services supply important means by which these people are integrated with the broader community. In this context, Congress wanted to ensure that these consumers had access to economically priced signal decoders capable of decrypting encoded satellite signals as well as competitively priced program packages offering a full range of program services.

In passing the Satellite Home Viewer Act, Congress called on the FCC to assume an important oversight function, in particular, to monitor the evolution and performance of the fledgling markets for decoder equipment and multichannel video program packages, to identify any problem areas that might develop, and to troubleshoot when remedial actions were needed. In short, the Commission was assigned the task of following this particular set of problems and ensuring that matters were resolved satisfactorily from the standpoint of the initially adversely affected population. To this end, the Commission was specifically charged with preparing a series of annual status reports to describe evolving conditions in the marketplace, identify any specific

¹⁷⁴ Which is not to belittle Congressional concerns for the rural consumers affected in this earlier instance.

problems that were developing, and evaluate the prospects for solutions. In so doing, the Commission would serve as a clearinghouse for relevant technical and commercial information, could help clarify confused circumstances and establish what was actually transpiring in the marketplace, and could proselytize for implementation of effective remedies for specific problems.

To complete the analogy, in this case Congress was concerned with the marketplace's ability to meet the *signal* accessibility needs of persons with *signal reception* disabilities resulting from the instigation of signal scrambling combined with technical and economic constraints arising for reasons of geography, topography, and circumstances that had changed quickly. The technical and marketplace means to address these needs were not givens — there were significant questions and uncertainties about decoder technology, the ability of suppliers to ramp up production rapidly and meet demands for decryption capabilities in timely fashion, and the pricing and availability of attractive program packages. These matters were eventually successfully resolved. With the Commission *exposing* problems and missteps in some areas and *disclosing* successful attempts to cope in others, marketplace solutions were developed, implemented, and made available to consumers in fairly short order. Efficient decryption technology was perfected, and a plethora of program packages were brought to market. Today living in a rural area no longer carries with it any associated disadvantages in terms of access (albeit at a price) to a full range of multichannel video program options.

FCC Role in Fostering Accessibility Improvements

The accessibility provisions of the Telecommunications Act have put equipment suppliers on notice that they must address the accessibility needs of persons with disabilities. The process of developing accessibility guidelines has sensitized suppliers to the specific kinds of accessibility needs that need to be addressed and, in some instances, has broadly pointed the way toward technical fixes that might offer promise in meeting specific accessibility needs in some types of devices.

Obviously, much work remains to be done. In many cases, new technical means of addressing needs must be conceived, training programs need to be created and executed, relevant market research needs to be undertaken, new testing procedures must be developed and refined, and reasonable standards for economic feasibility need to be agreed upon. In this kind of environment, in which there is a considerable technical and economic uncertainty and significant

expenditures of time and other resources are needed to begin to make progress, there is a clear role for the government to play in providing a forum for relevant consumers and producers to establish priorities, set a series of interim objectives, and settle upon acceptable approaches to making needed product improvements.

In our view, it would make good sense for the Commission, as it has done in previous cases, to undertake periodic inquiries into the marketplace's performance in addressing the accessibility needs of persons with handicaps. The Commission should undertake such inquiries with a view toward issuing periodic status reports detailing the nature and extent of compliance efforts and identifying areas in which progress is being made and areas in which more intensive efforts are needed. Serving as an information clearinghouse, the Commission could identify needs and set priorities, thereby helping to ensure that compliance efforts are focused where payoffs are likely to be greatest and accessibility benefits are maximized. It could provide a vehicle for organizing collaborative efforts to perfect and implement accessibility solutions, standardized testing procedures, and technical equipment specifications. It could offer a forum in which conflicting views and claims are exchanged and held up to public scrutiny. In this manner, the Commission could serve as a governmental ombudsman and as a catalyst, hopefully pushing matters toward a successful resolution. In contrast, attempting to enforce detailed proscriptions of equipment design and construction would likely prove to be a regulatory morass.

The instant setting is *not* one in which answers are known and it is simply a matter of implementing them in those cases in which it cannot be demonstrated to be uneconomic to do so. This is an area where the questions posed are highly complex and the answers are rarely likely to be simple, almost always involving the optimization of difficult economic and technical tradeoffs among conflicting design objectives. Indeed, any simple answer is almost certainly going to be wrong. In this regard, requiring that every product be engineered to meet every need is surely an answer *only* in the abstract.

Practical solutions are inevitably going to embody incremental improvements that address only a subset of the universe of accessibility needs. Even if it were feasible to conceive and create products that simultaneously address all accessibility needs, the costs of producing such products would likely place them far beyond the wherewithal of even the most wealthy of persons with disabilities. Indeed, such products would likely exceed the willingness to pay of most consumers. It serves little purpose to adopt an approach that has little chance of succeeding, but whose

pursuit would entail high compliance costs and the stifling of an economic innovative process that has historically been the principal source of improvements in accessibility for persons both with and without disabilities.

APPENDIX

Project Design Cost Model

As part of this project, a spreadsheet model was developed to allow checking the calculation of the level of affected R&D efforts. This model considered four different sizes of product design efforts and ranges of levels of effort were estimated for each of the four classes. The four classes of projects were:

- A. Simple repackaging of products such as telephones or modems,
- B. New models of products such as telephones or modems,
- C. Developing next generation of phones or modems or upgrading a major product such as a telephone switch, and
- D. Developing major new technology platforms such as a new generation PCS system.

An estimate of the proportion of product design efforts that fell into each of the four classes was developed along with an estimate of the total number of product design projects. We also estimated the fraction that complying with the Guidelines would increase the effort at each of the four stages. Those estimates were: research — 5 percent, specification and design — 5 percent, prototype to manufacturing — 8 percent, and manufacturing startup — 1 percent. The tables below show the calculations from this model.

	Program Type														
	A			B			C			D			Average		
% MIX:	31.0			48.8			20.0			.2			100 *		
		Months			Months			Months			Months			Months	
Function	HC	Min	Max	HC	Min	Max	HC	Min	Max	HC	Min	Max	HC	Min	Max
Research	2	0.5	1	4	1	3	10	3	6	20	6	12	5	1.3	3
Specs/Design	3	1	2	6	3	8	20	10	18	100	18	24	8	3.8	8.17
Proto to Manuf	3	1	5	6	5	10	20	18	24	100	24	36	8	6.4	11.3
Manuf Startup	6	1	2	10	2	8	30	6	12	160	12	24	13	2.5	6.97
Total		3.5	10		11	29		37	60		60	96		14	29.4

Note: HCY stands for head-count year.

Total Industry Development Cost (\$M)					
	Program Type				
	A	B	C	D	Total
Program Number:	2015	3172	1300	13	6500
Minimum HCY	2,183	19,032	83,417	6,760	111,392
Maximum HCY	5,877	52,867	136,500	10,920	206,164
Minimum \$	\$164	\$1,427	\$6,256	\$507	\$8,354

Maximum \$	\$441	\$3,965	\$10,238	\$819	\$15,462
------------	-------	---------	----------	-------	----------

Function	Expected Cost Increase to Comply with Guidelines
Research	5%
Specs/Design	5%
Proto to Manuf	8%
Manuf Startup	1%

Total Industry Compliance Cost (\$M)					
	Program Type				
	A	B	C	D	Total
Program Number:	2015	3172	1300	13	6500
Minimum HCY	84	978	4,561	333	5,956
Maximum HCY	289	2,273	6,825	497	9,884
Minimum \$	\$6	\$73	\$342	\$25	\$447
Maximum \$	\$22	\$170	\$512	\$37	\$741

Telecommunications Industry Association

Proposal for FCC Guidelines
for
Implementing Section 255 of the Communications Act

Discussion Draft

December 10, 1997

Implementation of Section 255 of the Communications Act
Guidelines for Equipment Manufacturers

1. General.

Manufacturer guidelines for access by persons with disabilities to telecommunications equipment and customer premises equipment.

(a) *Definitions.*

- (1) *Accessible:* Telecommunications equipment and customer premises equipment is accessible when it can be used by individuals with disabilities in its standard manufactured and shipped form without having to modify the product or purchase other equipment.
- (2) *Compatible:* Customer premises equipment (“CPE”) and telecommunications equipment is compatible if it conforms with a compatibility interface standard adopted by an accredited voluntary consensus standards body, as described in Paragraph 8, for the interconnection of such equipment with peripheral devices or specialized CPE commonly used by individuals with disabilities to achieve access.
- (3) *Manufacturer:* A manufacturer of telecommunications equipment or CPE is the division, business unit, subsidiary, or other business entity that is responsible for introducing, directly or through distribution arrangements, related telecommunications equipment or CPE into the United States marketplace in its final form or has direct control over the design and development, fabrication, and costs and expenses associated with such products.

(4) *Disability*: As applied to telecommunications equipment or customer premises equipment, disability means a current limitation affecting hearing, vision, movement, manipulation, speech, or interpretation of information which substantially limits the use of telecommunications equipment, customer premises equipment, or telecommunications services.

(5) *Readily achievable*: As applied to telecommunications equipment and CPE, an action by a manufacturer to make telecommunications equipment or CPE accessible, usable, or compatible is readily achievable if it:

(i) Is technically feasible at the time design or development activities for the telecommunications equipment or CPE commences;

(ii) Does not add much to the expense of designing or developing the telecommunications equipment or CPE or to the cost or expense of manufacturing or marketing its telecommunications equipment or CPE;

(iii) Does not add much to the time required to design or develop its telecommunications equipment or CPE;

(iv) Does not involve altering a fundamental or essential characteristic of the telecommunications equipment or CPE;

(v) Would not significantly limit the usefulness, marketability, or volume of sales of the telecommunications or CPE; and

(vi) is not inconsistent with an existing FCC regulation, technical specification or requirement, or stated policy goal and does not conflict with other applicable interface standards as described in Paragraph 8.

2. Accessibility and compatibility of telecommunications equipment and customer premises equipment.

(a) *General*. A manufacturer of telecommunications equipment or CPE shall ensure that the equipment is designed, developed, and fabricated to be accessible to and usable by individuals with disabilities, if readily achievable. Whenever such accessibility and usability is not readily achievable, such manufacturer shall ensure that the equipment is compatible with existing peripheral devices or specialized CPE commonly used by individuals with disabilities to achieve access, if readily achievable.

(b) *Ongoing obligation.* The obligation to evaluate the accessibility of telecommunications equipment and CPE is an ongoing obligation that must be accomplished at the beginning of the design and development process for new telecommunications equipment and CPE and upgrades of existing telecommunications equipment and CPE which materially affect the functionality of the equipment.

(c) *Manufacturer's discretion.* These Guidelines recognize that there will be cases where manufacturers may not be able to achieve the creation of a single product that addresses accessibility for all, or some, combinations or degrees of disabilities. Therefore, manufacturers have reasonable discretion in choosing among those accessibility features to be incorporated into telecommunications equipment and CPE. Notwithstanding the foregoing, manufacturers should consider incorporating into another comparable product, an access feature or features not addressed in other products. Manufacturers shall make good faith efforts to address the limitations which affect the use of telecommunications equipment and CPE by persons with disabilities.

3. General guidelines for manufacturers.

(a) *Adoption of a process to ensure accessibility and compatibility.*

(1) No later than twelve months following the effective date of these Guidelines, each manufacturer of telecommunications equipment or CPE should adopt a process for accomplishing the goal of enhancing the accessibility and usability of its equipment. Paragraphs 9. and 10. describe those aspects of accessibility and compatibility which manufacturers are expected to consider when evaluating whether it is readily achievable to make telecommunications equipment and CPE accessible or compatible. Third party certification of such a process shall not be required.

(2) Each manufacturer may adopt a process that is most consistent with its unique organizational and management structure, provided that the process, at a minimum, will:

(i) Identify barriers to the accessibility of the manufacturer's telecommunications equipment or CPE resulting from the limitations constituting a disability;

(ii) Disseminate information about accessibility needs and barriers to employees and others involved in the equipment design and development processes;

(iii) Consider accessibility early in the design and development processes; and

(iv) Evaluate designs to remove barriers to accessibility or to enhance the accessibility of telecommunications equipment or CPE.

(3) Each manufacturer shall incorporate into its products those designs to increase accessibility identified by its processes to the extent that it is readily achievable to do so. When designs to remove barriers to accessibility are not readily achievable, manufacturers shall:

(i) Identify applicable interface standards, adopted in accordance with Paragraph 8., governing the connection of telecommunications equipment or CPE with existing peripheral devices or specialized customer premises equipment; and

(ii) Ensure compatibility with such standards, to the extent that it is readily achievable to do so.

(b) *Adoption of measures to ensure usability.*

(1) No later than twelve months following the effective date of the Guidelines, each manufacturer shall adopt measures to ensure that individuals with disabilities are provided with usable information and documentation about its telecommunications equipment and CPE, if readily achievable. For purposes of these Guidelines, usable information and documentation shall include user guides or instructions, installation instructions for end-user installable devices, and other product support communications, including but not limited to call centers.

(2) To the extent that it is readily achievable to do so, information and documentation referred to in Paragraph 3. (b) (1):

(i) Should include information about accessibility and compatibility features;

(ii) Should be generally equivalent to information provided to similarly situated individuals without disabilities;

(iii) Should be provided, upon request, in alternate formats (*e.g.*, Braille, ASCII text, large print, audio recording, etc.) or alternate modes (*e.g.*, voice, facsimile, relay service, teletype ("TTY"), Internet posting, captioning, etc.), and;

(iv) May be packaged with the product or may be provided separately upon request, if the manufacturer has included in the product package the address of its point of contact for accessibility or compatibility information.

4. Complaints.

(a) *Informal resolution of inquiries or complaints.*

(1) Individuals with disabilities and manufacturers of telecommunications equipment and CPE are encouraged to resolve informally complaints about the accessibility or compatibility of telecommunications equipment or CPE using the following procedures.

(2) Each manufacturer of telecommunications equipment and CPE shall establish one or more points of contact for inquiries or complaints about the accessibility, usability, or compatibility of its telecommunications equipment or CPE. Within 90 days of the effective date of the Guidelines and thereafter within 10 days of a change thereof, each manufacturer of telecommunications equipment and CPE shall file with the Commission the following information regarding each point of contact:

- (i) Name or department designation;
- (ii) Address;
- (iii) Phone number;
- (iv) TTY number;
- (v) Fax number;
- (vi) Internet address; and
- (vii) Product(s) or product lines.

The Commission shall make this information available to any party upon request.

(3) Complaints about the accessibility, usability, or compatibility of telecommunications equipment or CPE must be submitted in writing (which shall include electronic communications such as electronic mail, facsimile transmission, or audio cassette) to the manufacturer's point of contact prior to the filing of a formal complaint with the Commission.

(4) A manufacturer shall respond to informal complaints submitted pursuant to Paragraph 4. (a) (3) or Paragraph 4. (b) within 60 days of receipt thereof or such later date as may be mutually agreed to by the informal complainant (“complainant”) and the manufacturer.

(b) *Commission response to premature complaints.* The Commission will only resolve complaints that could not be resolved informally between the informal complainant and the manufacturer against whom the informal complaint is lodged. In the event that the informal complainant submits a complaint to the Commission alleging that the telecommunications equipment or CPE is not accessible or compatible without having first afforded the manufacturer an opportunity to resolve the complaint informally, the Commission shall either advise the complainant to contact the manufacturer to resolve the complaint informally and provide the complainant with the appropriate method of contacting the manufacturer’s point of contact or forward the complaint to the manufacturer’s point of contact for informal resolution.

(c) *Formal Commission resolution of complaints.* Only complaints which could not be resolved informally between the complainant and the manufacturer following procedures described in Paragraph 4. (a) (3) and 4. (b) will be eligible for formal Commission resolution.

(1) Complaints submitted to the Commission for formal resolution must:

(i) Include copies of the informal complaint or inquiry submitted by the complainant to the manufacturer and any written response(s) from the manufacturer to the complainant; or

(ii) Demonstrate that the manufacturer did not respond to the informal complaint within 60 days or such other time period as mutually agreed to by the parties or has failed to provide a reasonable resolution of the complaint;

(iii) State with particularity the specific equipment features that present a barrier to accessibility, and

(iv) If known, describe a specific and applied solution to that barrier.

(2) Upon receipt of a complaint that meets the criteria of Paragraph 4. (c) (1) above, the Commission shall provide notice to the manufacturer against whom the complaint was filed and the complainant by forwarding a copy of the formal complaint to the manufacturer’s point of contact and the complainant.

5. Complaint answers.

(a) *Manufacturer's answer.* A manufacturer shall have 60 days from the date it receives notice from the Commission that a formal complaint has been filed against it, to submit its answer to a complaint. The manufacturer shall file a copy of its answer with the Commission and serve a copy of its answer on the complainant. A manufacturer's potential answers to a complaint include:

- (1) The complainant failed to exhaust the informal complaint resolution process.
 - (i) The complainant has not made the prerequisite attempt to resolve the complaint informally; or
 - (ii) The manufacturer has not been afforded 60 days from receipt of the informal complaint to respond thereto.
 - (iii) Where the complainant has failed to exhaust the informal complaint resolution process, the complaint shall be handled in accordance with Paragraph 4. (b).
- (2) The complaint fails to state a claim that Section 255 has been violated because:
 - (i) The product against which the complaint was filed does provide the accessibility or compatibility as defined in these Guidelines;
 - (ii) One or more of the manufacturer's existing products, or products in the design or development stage, with reasonably comparable features and manufacturer's price ranges provides, or will provide, the accessibility or compatibility as defined in these Guidelines; or
 - (iii) The accessibility or compatibility that is the subject of the complaint is not readily achievable.
- (3) The Commission and the manufacturer against whom the complaint was filed have entered into a consent order, as described in Paragraph 7. (a), which:
 - (i) Concerns the same or substantially similar area of noncompliance alleged in the complaint; and
 - (ii) For which the final deadline for achieving compliance under the consent order has not yet expired.

(b) *Effect of consent order.* Where such a consent order exists, the complaint shall be dismissed with prejudice. In dismissing the complaint, the Commission shall notify the complainant of the following:

- (1) The subject matter and the final deadline for compliance under the consent decree; and
- (2) That further complaints (except for complaints alleging non-compliance with such consent decree) against the manufacturer concerning the same or substantially similar areas of non-compliance are precluded.

(c) *Rebuttable presumption of compliance.* A manufacturer is entitled to a rebuttable presumption of compliance (*i.e.*, that it is not readily achievable to make the particular telecommunications equipment or CPE accessible) if the manufacturer satisfactorily demonstrates to the Commission that, with respect to the equipment which is the subject of the complaint, it has:

- (1) Adopted a disciplined process for evaluating accessibility and compatibility as prescribed in Paragraph 3. (a);
- (2) Described its process to the Commission and the complainant, either in response to the complaint or in another prior communication; and
- (3) Utilized that process consistently.

6. Replies to complaint answers.

(a) *Complainant's reply.* A complainant shall have 60 days from the date of receipt of the manufacturer's answer to submit a reply to the manufacturer's answer. The complainant shall file a copy of its reply with the Commission and serve a copy on the manufacturer's point of contact. A reply must include specific evidence that the manufacturer's contention that the complaint does not state a claim that Section 255 has been violated is without merit because:

- (1) A substitute product identified by the manufacturer does not possess reasonably comparable features and a reasonably comparable range of prices as the product complained of, or does not provide the accessibility or compatibility defined in these Guidelines; or
- (2) The accessibility or compatibility that is the subject of the complaint was readily achievable at the outset of the design and development activities related to the equipment that is the subject of the complaint; or

- (3) The manufacturer is not entitled to a presumption of compliance because it did not make the demonstration required by Paragraph 5. (c).

7. Remedies

- (a) Where the parties voluntarily agree to settle a complaint or the Commission determines that a violation of the Commission's Guidelines has occurred, the Commission shall negotiate an agreement with the manufacturer that imposes obligations on the manufacturer to undertake specific measures to remedy the alleged or identified area of non-compliance within a specified time period. The outcome of this process shall be a consent order.
- (b) Violation of a consent order, whether entered into after a determination by the Commission that a violation of these Guidelines has occurred, or in the absence of such a finding, shall subject the consenting party to any and all sanctions which could have been imposed in the proceeding resulting in the consent order if all of the issues in that proceeding had been decided against the consenting party and to any other sanctions agreed upon in the consent order. The Commission shall have the burden of establishing that the consent order has been violated in some material, but not every, respect. Violation of the consent order shall be the only issue in a proceeding concerning such an alleged violation.

8. Standards

(a) *Interface Standards.* Telecommunications equipment and CPE shall be deemed to be compatible with existing peripheral devices or specialized customer premises equipment commonly used by individuals with disabilities to achieve access if it conforms with an applicable compatibility interface standard developed by an accredited consensus-based standards development process.

(b) Consistent with the National Technology Transfer and Advancement Act of 1995, 15 U.S.C. 3701, any such compatibility interface standards shall be developed by voluntary consensus standards bodies. To ensure that such standards are established using a consensus-based process open to participation by all affected parties, accreditation by the American National Standards Institute ("ANSI"), or other similar accrediting organization with comparable accrediting criteria, shall be required of all organizations developing compatibility interface standards.

9. Appendix --Accessibility Guidelines.[#]

- (a) Telecommunications equipment and CPE shall be accessible to and usable by individuals with disabilities, as described in these Guidelines, if readily achievable.
- (b) *Redundancy and selectability.* Telecommunications equipment and CPE shall provide redundancy such that input and output functions are available in more than one mode. Alternate input and output modes shall be selectable by the user.
- (c) *Input, controls, and mechanical functions.* Input, controls, and mechanical functions shall be locatable, identifiable, and operable through at least one mode that complies with the following:
 - (1) Operable without vision. Functions shall not require user vision.
 - (2) Operable with low vision. Functions shall not require user visual acuity better than 20/70, and shall not rely on audio output.
 - (3) Operable with little or no color perception. Functions shall not require user color perception.
 - (4) Operable without hearing. Functions shall not require user auditory perception.
 - (5) Operable with limited manual dexterity. Functions shall not require fine motor control or simultaneous actions.
 - (6) Operable with limited reach and strength. Functions shall be operable with limited reach and strength.
 - (7) Operable without time-dependent controls. Functions shall not require a sequential response less than three seconds. Alternatively, any response time may be selected or adjusted by the user over a wide range.
 - (8) Operable without speech. Functions shall not require speech.

[#] Paragraphs 9 and 10 comprise appendices which contain the substantive provisions of Subparts C and D of the Architectural and Transportation Barriers Compliance Board's proposed Telecommunications Act Accessibility Guidelines. 62 Fed. Reg.19178 (April 18, 1997). These paragraphs are included in this Proposal for the purposes described in Paragraph 3. (a) (1).

(9) Operable with limited cognitive skills. Functions shall minimize the cognitive, memory, language, and learning skills required of the user.

(d) *Output, displays, and control functions.*

(1) Voice telecommunications shall comply with Paragraph 9. (d) (2) (ix) and (x).

(2) All information necessary to operate and use the product, including text, static or dynamic images, icons, or incidental operating cues, shall be provided through at least one mode that complies with the following:

(i) Availability of visual information. Information which is presented visually shall also be available in auditory form.

(ii) Availability of visual information for low vision users. Information which is provided through a visual display shall not require user visual acuity better than 20/70, and shall not rely on audio.

(iii) Access to moving text. Text, other than text output of a TTY, which is presented in a moving fashion shall also be available in a static presentation mode at the option of the user.

(iv) Availability of auditory information. Information which is provided in auditory form shall be available in visual form and, where appropriate, in tactile form.

(v) Availability of auditory information for people who are hard of hearing. Information which is provided in auditory form shall be available in enhanced auditory fashion (*i.e.*, increased amplification, or increased signal-to-noise ratio).

(vi) Prevention of visually-induced seizures. Flashing visual displays and indicators shall not exceed a frequency of 3 Hz.

(vii) Availability of audio cutoff. Products which use audio output modes shall have an industry standard connector for headphones or personal listening devices (*e.g.*, phone-like handset or ear cup) which cuts off speakers when used.

(viii) Non-interference with hearing technologies. Products shall not cause interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) of the user or bystanders.

(ix) Hearing aid coupling. Products providing auditory output by an audio transducer which is normally held up to the ear shall provide a means for effective wireless coupling to hearing aids.

(x) Availability of enhanced audio. Products shall be equipped with volume control that provides an adjustable amplification ranging from 18-25 dB of gain.*

10. Appendix -- Compatibility.

(a) When accessibility is not readily achievable, telecommunications equipment and CPE shall be compatible with peripheral devices and specialized customer premises equipment commonly used by individuals with disabilities to achieve accessibility and shall comply with the following provisions, as applicable:

- (1) External electronic access to all information and control mechanisms. Information needed for the operation of products (including output, alerts, icons, on-line help, and documentation) shall be available in a standard electronic text format on a cross-industry standard port and all input to and control of a product shall allow for real time operation by electronic text input into a cross-industry standard external port and in cross-industry standard format. The cross-industry standard port shall not require manipulation of a connector by the user. Products shall also provide a cross-industry standard connector which may require manipulation.
- (2) Connection point for external audio processing devices. Products providing auditory output shall provide the auditory signal at a standard signal level through an industry standard connector.
- (3) Non-interference with hearing technologies. Products shall not cause interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) of the user or bystanders.
- (4) Compatibility of controls with prosthetics. Touch screen and touch-operated controls shall be operable without requiring body contact or close body proximity.

* This provision is inconsistent with the Commission's existing Rules. *See* 47 CFR 68.317 (a).

- (5) TTY connectability. Products which provide a function allowing voice communication and which do not themselves provide a TTY functionality shall provide a non-acoustic connection point for TTYs. It shall also be possible for the user to easily turn any microphone on and off to allow the user to intermix speech with TTY use.
- (6) TTY signal compatibility. Products providing voice communication functionality shall be able to support use of all cross-manufacturer non-proprietary standard signals used by TTYs.

Telecommunications Industry Association

Proposal for FCC Guidelines
for
Implementing Section 255 of the Communications Act

Explanation and Supporting Rationale

Discussion Draft

December 10, 1997

Introduction

The purpose of these Guidelines is to provide guidance to manufacturers of telecommunications equipment and customer premises equipment (“CPE”) in discharging their responsibilities under Section 255 of the Communications Act of 1934 and to establish the Commission’s policy with respect to complaints about the accessibility, usability, or compatibility of telecommunications equipment or CPE.

The Telecommunications Act of 1996 (“1996 Act”)¹⁷⁵ added Section 255 to the Communications Act of 1934. Section 255(b) requires manufacturers of telecommunications

¹⁷⁵ Pub. L. No. 104-104, 110 Stat. 56 (1996).

equipment and CPE to “ensure that the equipment is designed, developed, and fabricated to be accessible to and usable by individuals with disabilities, if readily achievable.” If accessibility is not readily achievable, manufacturers must ensure that the telecommunications equipment and CPE are compatible with “existing peripheral devices or specialized customer premises equipment commonly used by individuals with disabilities to achieve access, if readily achievable.”

Section 255(a)(2) states that the term “readily achievable” has the meaning given to it by Section 301(9) of the Americans with Disabilities Act of 1990 (“ADA”), 42 U.S.C. 12181(9). Section 255(e) requires the Architectural and Transportation Barriers Compliance Board (the “Access Board”), in conjunction with the Commission, to develop guidelines for equipment accessibility (“Accessibility Guidelines”) within 18 months of enactment. Section 255(f) vests with the Commission “exclusive jurisdiction” over complaints brought pursuant to Section 255 and provides that there shall be no private right of action to enforce the provisions of Section 255 or any regulations thereunder.

1. General -- Definitions.

The following working definitions are established for the purposes of these Guidelines.

Accessible. As applied in the context of telecommunications, the word “accessible” is used to mean that the telecommunications equipment and CPE can be used by individuals with disabilities in its standard manufactured and shipped form without having to modify the product or purchase other equipment.

This definition reflects the use of the term “accessible to and usable by” in the context of the ADA. For example, with respect to new construction or alterations of an existing facility, “accessible to and usable by” means that patrons and employees of commercial facilities, including individuals with disabilities, “are able to get to, enter, and use the facility.” 56 Fed. Reg. 35544, 35574.

Compatible. Telecommunications equipment and CPE will be considered compatible if they conform with a compatibility interface standard for the interconnection of such equipment with peripheral devices or specialized customer premises equipment commonly used by individuals with disabilities that is adopted by an accredited voluntary consensus standards body. Without defined interface standards to govern the connection of telecommunications equipment and CPE with peripheral devices and specialized CPE, manufacturers of telecommunications equipment and CPE will be unable, as a practical matter, to achieve compatibility with peripheral devices and specialized CPE. Where there is no interface standard governing the connection of telecommunications equipment or CPE with a particular peripheral device or specialized CPE,

achieving compatibility between telecommunications equipment and CPE and peripheral devices and specialized CPE frequently may be not readily achievable.

Manufacturer. The term “manufacturer” is defined as the division, business unit, subsidiary, or other business entity that is responsible for introducing directly, or through distribution arrangements, related telecommunications equipment or CPE (often described as product lines) into the United States marketplace in their final form or has direct control over the design, development, fabrication, and costs and expenses associated with such equipment.

This definition of “manufacturer” is most consistent with both the complexity of modern corporate organizations as well as the ADA precedent for determinations of financial responsibility for the readily achievable removal of architectural and communication barriers. Under the ADA, when evaluating whether a specific barrier removal action is “readily achievable,” courts are instructed to consider “whether the local store was threatened with closure by the parent or is faced with job loss. . . .” House Committee on the Judiciary, H. Rep. No. 485, Part 3, 101st Cong., 2d Sess. (1990), at p. 55. The readily achievable barrier removal obligations in the ADA are not intended to result in corporate decisions to close neighborhood stores or eliminate jobs. Congress recognized that, regardless of the financial resources of a corporate entity, decisions related to local operations would inevitably reflect the financial performance of those local operations.

Similarly, the Commission, in assessing the relationship between the financial resources of a corporate entity and decisions related to equipment designs, must bear in mind that decisions to introduce new products or to continue existing ones inevitably reflect the financial performance of those individual products. For manufacturers, individual products or product lines are “units of decision,” analogous to the local store operations the Congress considered when enacting the ADA. Regardless of the size or financial resources of a corporate parent, individual product management teams, business units, or divisions are provided limited financial resources. In evaluating whether it is readily achievable to make a product accessible or compatible, product teams, business units, or divisions must consider whether, in light of these limited financial resources and the costs of incorporating additional accessibility features, a financially prudent decision would be not to introduce a product. Such an action would be analogous to a decision to close a local retail store that does not meet financial targets because of the added burdens of the ADA, an effect that Congress did not intend the ADA to have. Moreover, because small manufacturers and product teams typically established by larger manufacturers typically have similar -- and limited -- resources, the definition of manufacturer does not establish disproportionate responsibilities based on the size of the manufacturer.

The entity which introduces equipment into the marketplace in its final form should be responsible for assuring compliance with Section 255. In the case of CPE, this generally would be the firm under whose brand name the equipment is marketed. Where a manufacturer designs, develops, and fabricates equipment and introduces it into the marketplace under its own

brand name, the responsibility for compliance with Section 255 is clear. In other cases, such as contract manufacturing (where a firm fabricates equipment designed, developed, and marketed by another firm), private label arrangements (where a firm sets specifications for, and markets under its own name, equipment designed, developed, and fabricated by another firm), or license agreements (where a firm manufactures and markets equipment designed and developed by another firm), holding the firm that introduces the product in its final form into the marketplace responsible for compliance with Section 255 will provide all interested parties with a useful degree of certainty about the entity responsible for compliance with Section 255. Of course, the parties to arrangements such as those described above are free to apportion, by contract among themselves, liability for the consequences of equipment found not to be in compliance with the obligations of Section 255.

The definition of a manufacturer subject to these Guidelines does not differentiate among firms based on their location or national affiliation. Like other technical or operational requirements for telecommunications equipment sold in the United States, these Guidelines will apply to all manufacturers of telecommunications equipment or CPE sold in the United States, regardless of the location or national affiliation of the manufacturer. In accordance with long-standing Commission policy, the definition of a manufacturer does not affect telecommunications equipment or CPE manufactured within the United States for export to other countries. *See, e.g.*, 47 C.F.R. 68.4 (providing an exemption for non-hearing aid compatible telephones manufactured for export).

Disability. The term “disability” means a current limitation affecting hearing, vision, movement, manipulation, speech, or interpretation of information which substantially limits the use of telecommunications equipment, customer premises equipment, or telecommunications services.

Section 255(a) of the Communications Act of 1934, as amended, incorporates by reference the definition of “disability” from the ADA. The ADA uses a three-pronged definition:

The term “disability” means, with respect to an individual --

- (A) a physical or mental impairment that substantially limits one or more of the major life activities of such individual;
- (B) a record of such an impairment; or
- (C) being regarded as having such an impairment.

42 U.S.C. 12102(2)(A)-(C). Although Section 255 of the Communications Act incorporates the ADA definition of disability, the definition is used in a different way than it is used in the ADA.

The ADA uses this definition of disability to identify those individuals who are entitled to the protections of the statute. The second and third prongs of the definition -- a record of an impairment or being regarded as having an impairment -- were included in the ADA to extend its provisions to individuals who, although they do not have an impairment which limits a major life activity, are, nevertheless, potential victims of discrimination on the basis of at one time having

had an impairment or being regarded as having an impairment. House Committee on the Judiciary, H. Rep. No. 485, Part 3, 101st Cong., 2d Sess. (1990), at pp. 29-30.

Section 255 of the Communications Act uses the term “disability” to describe the types of impairments that manufacturers must consider when undertaking to make their telecommunications equipment and CPE accessible. In this context, the second and third prongs of the ADA definition of disability are not germane. Unless an individual has an active, current disability that “substantially limits” his or her ability to use telecommunications equipment or CPE, that individual does not need to make use of accessibility features. Inasmuch as the obligations of Section 255 apply to equipment that is marketed generally to all -- those with and without disabilities -- the Guidelines apply only the first prong of the ADA definition and those disabilities Congress intended to be included – the functional limitations of hearing, vision, movement, manipulation, speech, or interpretation of information. *See* Senate Committee on Commerce, Science, and Transportation, S. Rep. No. 23, 104th Cong., 1st Sess. (1995), p 74; House Committee on the Judiciary, *supra*, at p. 29.

Readily achievable. An action by a manufacturer to make telecommunications equipment or CPE accessible, usable, or compatible is “readily achievable” if it:

- a) is technically feasible at the time design or development activities for the telecommunications equipment or CPE commences;

- b) does not add much to the expense of designing or developing the telecommunications equipment or CPE or to the cost or expense of manufacturing or marketing its telecommunications equipment or CPE;
- c) does not add much to the time required to design or develop its telecommunications equipment or CPE;
- d) does not involve altering a fundamental or essential characteristic of the telecommunications equipment or CPE;
- e) would not significantly limit the usefulness, marketability, or volume of sales of the telecommunications or CPE; and
- f) is not inconsistent with an existing FCC regulation, FCC technical specification or requirement, or stated FCC policy goal and does not conflict with other applicable interface standards.

The obligation of manufacturers to design, develop, and fabricate telecommunications equipment or CPE to be accessible, usable, or compatible is not unlimited. Rather, the legal obligation is expressly limited to that which is readily achievable. Section 255(a)(2) incorporates by reference the term “readily achievable” from the ADA where it is defined as “easily accomplishable and able to be carried out without much difficulty or expense.” The ADA further provides that “in determining whether an action is readily achievable, factors to be considered include --

(A) the nature and cost of the action needed under this Act;

(B) the overall financial resources of the facility or facilities involved in the action; the number of persons employed at such facility; the effect on expenses and resources, or the impact otherwise of such action upon the operation of the facility;

(C) the overall financial resources of the covered entity; the overall size of the business of a covered entity with respect to the number of its employees; the number, type, and location of its facilities; and

(D) the type of operations of the covered entity, including the composition, structure, and functions of the workforce of such entity; the geographic separateness, administrative or fiscal relationship of the facility or facilities in question to the covered entity.”

42 U.S.C. 12181(9). In view of its origins, it is appropriate to look for guidance about the meaning of the term “readily achievable” in the context in which it is used in the ADA. There, the term “readily achievable” is used to describe the limits on the obligation of operators of public accommodations to remove architectural and communications barriers that are structural in nature. Barrier removal is limited to those circumstances where it can be accomplished “easily and without much difficulty or expense.” The term addresses “the degree of ease or difficulty that the business operator would experience in removing a barrier. . . .” House Committee on Energy and Commerce, H. Rep. No. 485, Part 4, 101st Cong., 2d Sess. (1990), at pp. 56-57 (“Commerce Report”). Examples of the types of actions that would be considered readily achievable include “the addition of grab bars, the simple ramping of a few steps, the lowering of telephones, the addition of raised letter and Braille markings on elevator control lights, and similar modest adjustments.” House Committee on Education and Labor, H. Rep. No. 485, Part 2, 101st Cong., 2d Sess. (1990), at p. 110. Congress intended that the ADA require an operator of a public accommodation only to take such modest actions to increase the accessibility of the public accommodation, even if the end result is something short of full accessibility.

The Department of Justice (“DOJ”) regulations implementing the provisions of Title III of the ADA that require the removal of architectural barriers in existing facilities, where readily achievable, provide numerous examples of steps to remove barriers. 28 C.F.R. 36.304(a)

and (b). None of these examples are steps which would constitute more than a small fraction of the operating expenses of the public accommodation. The DOJ recommended priorities for operators of public accommodations for barrier removal, clearly recognizing that all barriers may not be removed at once. 28 C.F.R. 36.304(c).

Based on the foregoing, the term readily achievable requires manufacturers to make telecommunications equipment and CPE accessible or compatible only to the extent that modest features that increase the accessibility of the equipment to individuals with disabilities can be implemented. It would be inconsistent with the ADA definition and DOJ interpretations to require manufacturers of telecommunications equipment or CPE to incorporate accessibility features if doing so would add much expense to the cost of designing, developing, or fabricating a product. Examples of accessibility features that generally would be readily achievable include the use of highly contrasting colors for numbers or letters and their background, making buttons as large as practical in view of the size of the equipment, and making wireline handsets that can be used by individuals with hearing aids equipped with telecoils. Other technically feasible features -- voice recognition, for example -- should not be required on simple, low-cost products because the degree of difficulty or expense of providing them currently would exceed the readily achievable threshold.

Similarly, the addition of accessibility features which add much time to manufacturers' product design and development processes for telecommunications equipment and

CPE would not be readily achievable. Nor would the addition of accessibility features which are not technically and commercially feasible at the commencement of design and development activities. Because of the competitive environment in the telecommunications industry, telecommunications equipment and CPE products have relatively short lives in the marketplace. For this reason, manufacturers are under intense pressure to design and develop new products quickly. In such an environment, the addition of some accessibility features, especially those features which require the investment of time and resources to develop new technology, can extend a manufacturer's normal product design and development time and, as a consequence, can cause a manufacturer to miss a window of opportunity in the marketplace, inevitably resulting in a significant loss of sales. Actions with this result are clearly not readily achievable. ADA precedent confirms this conclusion. DOJ clearly has indicated that actions to remove barriers to accessibility are not readily achievable if they materially degrade a public accommodation's operations or revenue. 28. C.F.R. 36.304 (f) (rearrangement of store shelves, display racks, and restaurant tables to be wheelchair accessible "is not readily achievable to the extent that it would result in a significant loss of selling or serving space.")

In applying the definition of readily achievable to a particular piece of telecommunications equipment or CPE, the Commission should not consider the incorporation of multiple accessibility features in isolation one from another. If a manufacturer incorporates features that resolve one identified barrier to accessibility, and the incorporation of features resolving additional barriers would involve efforts that, in total, would exceed the readily

achievable standard -- by, for example, adding much expense to the cost of production -- incorporation of the additional accessibility features on that particular piece of equipment would not be required. The DOJ requirements for the ADA are consistent with this approach. In addressing the obligations of operators of public accommodations to remove barriers to accessibility to the extent that it is “readily achievable,” DOJ determined that, under the ADA, it is “appropriate to consider the cost of other barrier removal actions as one factor in determining whether a measure is readily achievable.” DOJ, Final Rule, 56 Fed. Reg. 35544, at 35554.

Likewise, it is consistent with Section 255 and the ADA to conclude that the readily achievable accessibility of telecommunications equipment and CPE may be achieved without modifying each and every product or model within a product line. Several examples from the ADA context support the proposition that accessibility should be assessed across a product line, rather than on a product-by-product basis. The regulations implementing the ADA do not require hotels to make every hotel room accessible to individuals with disabilities who use wheelchairs. Rather the ADA requires hotels to make some rooms of each type (suites, regular rooms, etc.) accessible “in order to provide persons with disabilities a range of options equivalent to those available to other persons. . . . Factors to be considered include room size, cost, amenities provided, and the number of beds provided.” ADA Guidelines for Buildings and Facilities, 28 C. F. R. Part 36, App. A at 63. Likewise, the ADA Guidelines do not require theaters to make every seat accessible to persons using wheelchairs. Rather, the Guidelines require theaters and other assembly areas to provide wheelchair seating “so as to provide people

with physical disabilities a choice of admission prices and lines of sight comparable to those for members of the general public,” including the option to sit beside the companion of one’s choice.

Id. at 56.

Under the definition of readily achievable, telecommunications equipment and CPE manufacturers are not required to add accessibility features if doing so would alter fundamentally the nature of the equipment. The DOJ regulations implementing the ADA do not require operators of public accommodations to modify their policies, practices, or procedures where “the modification would fundamentally alter the nature of the [public accommodation’s] goods, services, facilities. . . .” 28 C.F.R. 36.302. For example, a manufacturer of a very small communications device intended to meet a market need for such small devices is not required to incorporate accessibility features -- for example, large control buttons or visual display on a wrist-watch sized paging device -- that would require enlarging the size of the device, thereby altering its fundamental characteristic of “smallness.” Similarly, manufacturers should not be required to incorporate accessibility features that would materially limit the mass market appeal -- and hence the volume of sales -- of a product in the general marketplace. Incorporating accessibility features that would so limit the appeal of a product would have the effect of changing a mass market product into an assistive device of limited application -- thus altering a fundamental characteristic of the product.

Finally, a feature or modification to a product is not required if it is inconsistent with an existing FCC regulation, technical specification or requirement, or stated policy goal, or if it conflicts with other applicable interface standards. For example, although it might be feasible to make a product more accessible by modifying the parameters of the product's transmitter, the modification would not be required if it is inconsistent with the Commission's rules.

2. Accessibility and compatibility of telecommunications equipment and CPE.

General. Section 255(e) requires the Architectural and Transportation Barriers Compliance Board ("Access Board"), in conjunction with the Commission, to develop accessibility guidelines for the accessibility of telecommunications equipment and CPE. In discharging its portion of this conjoint responsibility, the Access Board convened the Telecommunications Access Advisory Committee ("TAAC") to assist in developing these accessibility guidelines. Specifically, the TAAC was charged with making recommendations on the following issues: (1) types of equipment to be covered by the guidelines; (2) barriers to the use of such equipment by persons with disabilities; (3) solutions to such barriers, if known, categorized by disability; and (4) the contents of the guidelines. *See* Notice, 61 Fed. Reg. 13813. Following the publication of the TAAC's report, the Access Board proposed and sought public comment on its proposed Telecommunications Act Accessibility Guidelines. *See* Notice, 62 Fed. Reg. 19178.

By adopting the substantive provisions of this Proposal for FCC Guidelines Implementing Section 255 of the Communications Act, the Commission would discharge its portion of the conjoint responsibility imposed on the Commission and Access Board by Section 255.

Ongoing obligation: The obligation to evaluate the accessibility of telecommunications equipment and CPE is an ongoing obligation that must be accomplished at the beginning of the design and development process for new equipment and upgrades of existing equipment that materially affect the functionality of the equipment. Early consideration of accessibility in the design and development for telecommunications equipment and CPE will have the effect of enhancing accessibility. Given the speed of technological advances which quickly render existing equipment obsolete, retrofitting equipment already in the marketplace would result in a serious misallocation of resources and would stifle innovation.

Manufacturer's discretion. The solutions to accessibility barriers incorporated by a manufacturer in a given product are not appropriately considered in isolation from the solutions incorporated in its other products. These Guidelines recognize that there will be cases where a manufacturer may not be able to achieve the creation of a single product that addresses accessibility for all, or some, combinations or degrees of disabilities. In fact, products which attempt to address all disabilities, even through selectable modes of operation, may become difficult for everyone to use and can introduce problems for those with cognitive disabilities.

Therefore, a manufacturer shall have reasonable discretion in choosing among those accessibility features to be incorporated into telecommunications equipment and CPE. Notwithstanding this discretion, a manufacturer should consider incorporating into another comparable product, an access feature or features not addressed elsewhere. Manufacturers shall make good faith efforts to address the limitations which affect the use of telecommunications equipment and CPE by persons with disabilities.

The manufacturer's discretion will be exercised in an environment in which two conditions exist. First, the design of individual items of equipment to incorporate solutions to a wide variety of barriers is impractical. For example, individuals with some types of impaired mobility may benefit from a keypad that is larger than the one normally used with telephones, while others may benefit from a keypad that is smaller than the keypad normally used. The impracticality of designing a single product with both "solutions" to impaired mobility is obvious. And, second, consumers, including individuals with disabilities, have the ability to choose among manufacturers' offerings in a competitive marketplace. In the case of buildings and facilities there is little, if any, ability to choose to enter a building on the basis that meets one's unique accessibility needs; therefore all buildings and facilities must be equally accessible. In contrast, CPE generally is used by an individual or a small known group of individuals, is selected to meet the unique needs of those specific individuals or small groups of known individuals, including individuals with disabilities, and is obtained from among a variety of products available from a manufacturer. In many cases the needs of an individual with disabilities can be satisfied by

selecting specific equipment from among that generally available in the marketplace. Examples include vibrating pagers (useful both for individuals with impaired hearing and those who wish a “silent alert”), volume controls (useful for both those with impaired hearing as well as those working in a noisy environment), and speakerphones (useful for both those with certain musculatory or skeletal impairments which prevent holding a telephone receiver to the ear as well as those who participate in lengthy conference calls).

If manufacturers of telecommunications equipment and CPE were not afforded this reasonable degree of manufacturers’ discretion in choosing among a wide range of accessibility features, the cost of complying with the requirements of Section 255 would be excessive and counter-productive to achieving the goals of Section 255. For example, if manufacturers were required to demonstrate either that each product that they sell is accessible or that accessibility is not readily achievable, the result could be large, costly, compliance bureaucracies employed by the Commission and by manufacturers, and a diversion of resources from product design and development with the inevitable long-term result of reduced accessibility – both an unintended and undesired consequence.

3. General guidelines for manufacturers.

Adoption of a disciplined process to ensure accessibility and compatibility.

Recognizing that accessibility is most effectively addressed at the beginning of the product

introduction process, Section 255 requires manufacturers to ensure that equipment is “designed, developed, and fabricated to be accessible to and usable by individuals with disabilities. . . .” In addition, these Guidelines establish an expectation that, no later than twelve months following the effective date of these Guidelines, each manufacturer of telecommunications equipment or CPE will adopt a disciplined process for evaluating the means for accomplishing the goal of enhancing the accessibility and usability of its equipment.

Generally, design activities commence approximately 24 months prior to the first introduction of new CPE into the marketplace, and, in the case of telecommunications equipment, even earlier. It would be unrealistic to expect that manufacturers would be able to consider the Access Board and Commission Guidelines in their equipment designs prior to, or even immediately following, the effective date of these Guidelines. Thus, a twelve month period is established for the purpose of enabling manufacturers to: (i) develop a process for evaluating the accessibility of its product designs; (ii) identify barriers to accessibility; (iii) incorporate solutions to those barriers to the extent that they are readily achievable; (iv) communicate that process to its equipment designers and developers; and (v) train its designers and developers in the use of the process.

Each manufacturer may adopt that disciplined process which is most consistent with its unique organizational and management structure, provided that the process, at a minimum, will: (a) identify barriers to the accessibility of the manufacturer’s telecommunications

equipment or CPE resulting from the limitations constituting a disability; (b) disseminate information about accessibility needs and barriers to employees and others involved in the equipment design and development processes; (c) consider accessibility early in the design and development processes; and (d) evaluate designs to remove barriers to accessibility or to enhance the accessibility of telecommunications equipment or CPE.

Because of the wide variety of manufacturers' organization structures, the absence of generally agreed-upon approaches to identifying the accessibility barriers and solutions, and the very immature state of what could be called "accessibility engineering" principles, third-party auditing or certification of manufacturers' processes for identifying and resolving barriers to accessibility is not required.

The Access Board, at the time it promulgated its ADA Accessibility Guidelines for Buildings and Facilities ("ADAAG"), had the benefit of a decade or more of experience in discharging similar responsibilities required by the Rehabilitation Act of 1973, Pub. L. No. 93-112, 87 Stat. 355. Moreover, in the case of the construction of accessible buildings and facilities, the affected industries had a similar period in which to gain experience in constructing facilities to meet the requirements of the predecessors to the ADAAG. By contrast, no similar base of experience exists related to the accessible design, development, or fabrication of

telecommunications equipment and CPE.¹⁷⁶ In view of the uncertainty that necessarily results from this lack of experience, requiring third-party audit or certification programs is unnecessary and of little or no value.

Manufacturers shall incorporate into their equipment those designs to increase accessibility identified by their processes to the extent that it is readily achievable to do so. Paragraphs 9. and 10. describe those aspects of accessibility and compatibility which manufacturers are expected to consider when evaluating whether it is readily achievable to make telecommunications equipment and CPE accessible or compatible. They contain the substantive portions of Subparts C and D of the Architectural and Transportation Barriers Compliance Board's ("Access Board") proposed Telecommunications Act Accessibility Guidelines. Notice, 62 Fed. Reg. 19178.

When designs to remove barriers to accessibility are not readily achievable, manufacturers shall: (a) identify applicable interface standards, adopted by accredited standards bodies governing the connection of telecommunications equipment or CPE with existing

¹⁷⁶ For example, the Access Board's Notice announcing the establishment of its Advisory Committee states that the Committee will be charged with identifying the barriers to the use of telecommunications and customer premises equipment by persons with various types of disabilities and the solutions to such barriers, if known, categorized by type of disability. . . . (Emphasis added.)

peripheral devices or specialized customer premises equipment, and (b) ensure compatibility with such standards, to the extent that it is readily achievable to do so.

Adoption of measures to ensure usability. Not later than twelve months following the effective date of these Guidelines, manufacturers are required to adopt measures to ensure that individuals with disabilities are provided with usable information and documentation about their telecommunications equipment or CPE, to the extent that it is readily achievable to do so.

Because marketing and product communications are not a part of the equipment design, development, and fabrication process, they are not covered by Section 255. Nevertheless, because marketing and product communications, including user guides or instructions, installation instructions for end-user installable devices, and other product support communications like customer call centers, are an important aspect of making equipment accessible to and usable by individuals with disabilities, manufacturers have voluntarily agreed to provide such information, including information about accessibility and compatibility features, in alternate formats.

4. Complaints

General. Section 255(f) gives the Commission "exclusive jurisdiction" over Section 255 complaints. Section 255 does not permit private lawsuits to enforce Section 255 requirements.

Informal Resolution of Inquiries or Complaints. The Commission should establish a policy in favor of voluntary resolution of Section 255 complaints. In many instances, manufacturers and persons with disabilities will be able to resolve voluntarily complaints about the accessibility or compatibility of telecommunications equipment and CPE. A policy that favors voluntary resolution of complaints will conserve the limited Commission resources available for enforcement. Moreover, a cooperative approach between manufacturers and persons with disabilities is most likely to promote the goals of accessibility and compatibility established by Section 255.

Each manufacturer subject to Section 255 should be required to establish one or more points of contact to answer inquiries, to provide information, and to address complaints about the accessibility of its telecommunications equipment or customer premises equipment. Each manufacturer should provide its points of contact information to the Commission and, upon request, to individuals with disabilities or to their representatives. This will ensure that there is at least one person from each manufacturer who is responsible for receiving and coordinating inquiries and complaints from persons with disabilities or the Commission.

To implement this policy in favor of voluntary resolution of Section 255 complaints, the Commission should require that all complaints be submitted to the manufacturer's point of contact in the first instance, before they are submitted to the Commission. In order to

ensure that complainants receive a prompt response from manufacturers, a manufacturer must respond to a written complaint (which may be in electronic form including electronic mail, facsimile transmission, or audio cassette) within 60 days after receipt thereof, unless the complainant agrees to an extension.

The Commission should only consider those complaints that cannot be resolved informally between a complainant and a manufacturer. At a minimum, this mandatory attempt at informal resolution will require a complainant to submit a complaint to the manufacturer and allow the manufacturer 60 days in which to resolve the complaint or formulate a response. If a person with a disability submits a complaint to the Commission without exhausting these requirements for informal complaint resolution, the Commission should either return the complaint to the complainant with instructions about how to contact the manufacturer, including the manufacturer's point(s) of contact information, and how to utilize the informal complaint process or forward the complaint to the manufacturer's point of contact for informal resolution.

Formal Commission Resolution of Complaints.

Pleading requirements. A complaint must demonstrate on its face that the complainant is entitled to formal consideration on the merits. First, and most important, a complainant must demonstrate that he or she has attempted to achieve an informal resolution of the complaint as described in the above discussion of the informal resolution of inquiries or complaints. As a result, the complaint must either: (1) include copies of the informal complaint

submitted to the manufacturer and the manufacturer's response; or (2) demonstrate that the manufacturer failed to respond or provide a satisfactory resolution of a complaint within 60 days.

Second, in order to state a claim that Section 255 has been violated, a complaint should state with particularity the barrier to accessibility or compatibility associated with the equipment subject to the complaint. Particularity is necessary to allow both manufacturers and the Commission to respond effectively to complaints. Accordingly, a complainant should be required, at a minimum, to identify the specific feature of the equipment that is not accessible or compatible. For example, a complaint indicating that "this phone is inaccessible to me as a person with a hearing impairment" does not demonstrate sufficient particularity. In contrast, a complaint indicating that "the volume control on this phone cannot be adjusted loud enough so that I can hear" is sufficiently particular.

Additionally, a complainant should, whenever possible: (a) identify a specific known solution to the barrier complained of; and (b) demonstrate that incorporating that feature would have been readily achievable. Complainants bear the burden of proving that Section 255 has been violated. As a result, those complaints that identify specific, known, readily achievable solutions to accessibility or compatibility barriers will be the most compelling. By including such information, if known, a complainant can focus the Commission's scrutiny upon the specific alleged area of non-compliance.

Where the Commission determines that a complaint appears on its face to qualify for formal resolution, the Commission shall notify the manufacturer's point of contact and the complainant of this determination. The manufacturer then has 60 days in which to provide a written answer to the Commission.

5. Complaint answers.

Manufacturer's answer. A manufacturer shall have 60 days from receipt of the notice from the Commission indicating that a complaint appears to qualify for formal resolution in which to file an answer. In the answer, a manufacturer may raise several defenses.

A manufacturer may argue that the complainant has failed to exhaust the mandatory voluntary complaint resolution process with the manufacturer. If a manufacturer's response to a complaint demonstrates that either: (1) the complainant has not submitted the complaint to the manufacturer; or (2) the manufacturer's 60 days to respond to an informal complaint have not yet expired, then the Commission should return the complaint.

A manufacturer may argue that it is entitled to a presumption of compliance because it has adopted a disciplined process for evaluating and incorporating accessibility and compatibility issues as part of the product design process. Accessibility and compatibility can be

addressed most easily and economically if considered early in the design process, with the result that accessibility or compatibility features are more likely to be readily achievable. By establishing this presumption, manufacturers have an incentive to adopt such a disciplined process. A manufacturer may invoke this presumption if it has: (1) adopted such a process; (2) described that process either to the Commission or to the complainant; and (3) used that process consistently.

A manufacturer may assert any of three defenses on the merits. These defenses identify those circumstances where a manufacturer has complied with its obligation under Section 255 by providing equipment that is accessible or compatible, to the extent readily achievable. First, a manufacturer should be permitted to demonstrate that the product complained of is, in fact, accessible or compatible for the complainant. Situations may arise, for example, where a product is in fact accessible or compatible if used correctly, but has not been used correctly by the complainant.

Second, a manufacturer may demonstrate that one or more of its existing products, or products in the design and development stage, with reasonably comparable features and price provide, or will provide, the accessibility or compatibility required by the complainant. By permitting this defense, the Commission recognizes that the readily achievable standard does not require every piece of telecommunications equipment to be accessible to every person with a disability. Instead, Section 255 requires each manufacturer to provide a range of functionally equivalent, comparably priced products that are accessible to individuals with disabilities. The

ADA, the source of the "readily achievable" standard that defines the scope of manufacturers' obligations, provides guidance here. The ADA has been implemented with a recognition that the readily achievable definition will, in some circumstances, result in persons with disabilities having accessibility but fewer choices than the general public. *See e.g.*, Department of Justice Standards for Accessible Design, 28 C.F.R. § 36.308 (regulations governing fixed seating in public theaters and stadiums); 28 C.F.R. Part 36, App. A, § 9.1.2 (wheelchair accessibility of hotel rooms); *Id.* at § 9.1.3 (requirements related to hotel rooms and accessibility for individuals with hearing impairments). The common thread in these regulations implementing the ADA is that persons with disabilities will have a more limited number, but comparable range, of choices in comparison to individuals without disabilities.

A product family approach to compliance with Section 255 is warranted because of the varying and occasionally conflicting accessibility needs of persons with different disabilities. This approach to compliance will permit manufacturers to incorporate a range of accessibility and compatibility features to accommodate different disabilities, to the extent readily achievable, across the manufacturer's product families. This approach will maximize the types of equipment that are accessible and compatible for persons with different disabilities.

Third, a manufacturer may demonstrate that the requested accessibility or compatibility feature was not readily achievable and therefore not required by Section 255. Readily achievable is defined to mean "without much difficulty or expense." In addition, the

amount of difficulty required cannot easily be quantified. As a result, what is readily achievable and therefore required must necessarily be resolved on a case-by-case basis utilizing the criteria set forth in the discussion of the meaning of the term “readily achievable.”

Where the Commission has entered a consent order and the time for the manufacturer to comply with that order has not yet expired, the manufacturer shall be shielded from complaints raising the same or substantially the same areas of noncompliance. The goals of accessibility and compatibility established by Section 255 will best be served by a policy which favors proactive over retroactive relief. For this reason, the Commission should attempt to negotiate consent orders with manufacturers that have either: (1) been found to have violated Section 255; or (2) voluntarily agree to enter into such consent orders. Such consent orders shall require the manufacturer to undertake specific measures to remedy the identified or alleged area of noncompliance within a specified time period.

The Commission shall dismiss any complaints that raise the same or substantially the same identified or alleged areas on noncompliance as an existing consent order. In dismissing a complaint under this section, the Commission shall notify the complainant of the subject matter of the consent order and the deadline for compliance. The Commission also shall notify the complainant that subsequent complaints, except complaints alleging failure to comply with the consent order, are precluded and will be dismissed.

6. Replies to complaint answers.

Complainant's reply. A complainant shall be provided 60 days in which to reply to the manufacturer's answer. In order to rebut a presumption of compliance, a complainant should be required to present specific factual information demonstrating that the manufacturer in fact: (1) has not adopted a disciplined process; (2) has not described that process either to the Commission or to the complainant; or (3) has not used that process consistently.

Because a manufacturer's defenses on the merits are fact-based, a complainant, to overcome these defenses, shall be required to provide specific evidence that the manufacturer's claimed defense is not factually accurate in one of the following respects: (1) the substitute product identified by the manufacturer does not possess reasonably comparable features and price as the product complained of; (2) the substitute product is not accessible to the complainant; or (3) the required accessibility or compatibility was readily achievable at the outset of the design and development activities related to the equipment subject to the complaint.

If a complainant fails either to respond or to provide specific evidence refuting the manufacturer's claimed defenses, the complaint shall be dismissed.

7. Remedies.

The Section 255 goals of accessibility and compatibility are best achieved with a policy that favors proactive relief over monetary penalties for violations of Section 255. In imposing a penalty for a violation, the Commission should prefer requiring that the manufacturer undertake additional obligations to achieve accessibility or compatibility in the future, rather than requiring payment of a fine.

Therefore, the Commission should, when appropriate, negotiate consent orders with manufacturers that have been found to have violated Section 255. Such consent orders would obligate a manufacturer to undertake specific measures to remedy an identified area of noncompliance within a specified time period. In addition, in exchange for dismissal of a complaint, manufacturers may voluntarily agree to a consent order and undertake similar obligations for future remedial measures. These consent orders would be consensual in that they permit a manufacturer voluntarily to undertake a program that has been approved by the Commission as an appropriate method for remedying an alleged area of noncompliance with Section 255. In both instances, by agreeing to enter into a consent order and adhering to its terms, a manufacturer would avoid monetary penalties for noncompliance.

Consent orders should establish a specific time period or deadline for the manufacturer to fulfill its agreed upon obligations. Moreover, the manufacturer's obligations

under the consent order must be sufficiently specific so that the manufacturer's compliance with the order, and therefore Section 255, can be accurately assessed at the end of the specified period.

Where a manufacturer fails to comply with a consent order, the manufacturer should be subject to any and all penalties that could have been imposed in the underlying complaint proceeding if all issues had been resolved against the manufacturer. The Commission would bear the burden of proving that the consent order has been violated in some material respect. A manufacturer's failure to comply with a consent order is only material if it has caused significant delay or resulted in a failure to accomplish the accessibility or compatibility contemplated in the consent order. Further, proceedings to determine whether a consent order has been violated shall be limited exclusively to this issue, and shall not address any additional issues related to compliance with Section 255.

8. Standards.

Section 255 of the Communications Act requires that, when it is not readily achievable for telecommunications equipment or CPE to be accessible, it must be compatible with existing peripheral devices or specialized CPE commonly used by individuals with disabilities to achieve access, if readily achievable.

Telecommunications equipment and CPE will be deemed to be compatible with existing peripheral devices or specialized customer premises equipment if it conforms with an applicable compatibility interface developed by a voluntary consensus-based standards development process. The purpose of this provision is to ensure that all manufacturers, including manufacturers of telecommunications equipment and CPE and manufacturers of peripheral devices and specialized CPE, have a reasonable degree of certainty regarding the technical means of achieving the interconnection of their equipment and an opportunity to participate in the development of standard means of interconnection. Without the certainty afforded by defined interface standards, manufacturers of telecommunications equipment and CPE will be unable, as a practical matter, to achieve a significant and predictable degree of compatibility with peripheral devices and specialized CPE.

Consistent with the National Technology Transfer and Advancement Act of 1995, 15 U.S.C. 3701, any technical specifications and practices, comprising compatibility interface standards for the interconnection of telecommunications equipment or CPE with peripheral devices or specialized CPE used to achieve access, should be developed by private, voluntary standards-setting bodies. The telecommunications industry (comprising manufacturers of telecommunications equipment and CPE and service providers) has a long history of developing standards to ensure the interoperability of the many distinct elements of a modern telecommunications system using voluntary, accredited, consensus standards organizations such as the Telecommunications Industry Association (TIA) and American National Standards Institute

(ANSI) Committee T1. The ANSI program for accrediting voluntary standards development organizations is well-developed and widely recognized. ANSI provides an opportunity for public review and comment on all applications for ANSI accreditation and limits its accreditation to those standards-setting organizations that are open to participation by all affected parties, foster the development of a consensus position among those affected parties, and operate in accordance with generally accepted principles of openness and “due process.”

In addition, the ANSI accreditation program includes two mechanisms to ensure that, once accredited by ANSI, voluntary standards development organizations continue to operate in a manner consistent with their ANSI accreditation: ANSI has an appeals mechanism that can be used by any materially affected party with a complaint about an accredited organization’s standards development process and has implemented a program for auditing accredited organizations on a regular basis to ensure that their activities conform with both their own accredited procedures and with the current ANSI requirements.