

American Council of the Blind

State of Accessibility for Mobile Phone Devices for People Who Are Blind, Deaf Blind or Who Have Low Vision

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The following comments are submitted on behalf of the American Council of the Blind (ACB.) The ACB is a national membership organization whose purpose is to work toward independence, security, equality of opportunity, and improved quality of life for all blind and visually impaired people. Founded in 1961, ACB's members work through more than 70 state and special-interest affiliates to improve the well-being of all blind and visually impaired people by: serving as a representative national organization; elevating the social, economic and cultural levels of blind people; improving educational and rehabilitation facilities and opportunities; cooperating with the public and private institutions and organizations concerned with blind services; encouraging and assisting all people with severely impaired vision to develop their abilities and conducting a public education program to promote greater understanding of blindness and the capabilities of people who are blind.

Over the past fifteen years, mobile phone devices have revolutionized the way consumers interact with their environments. Starting with the most basic phones introduced in the 1990s, today's mobile devices are capable of providing a remarkable number of features that go beyond their intended functions. The world's largest technology software and hardware manufacturers have worked to devise sophisticated operating systems and hardware systems to encompass enumerable capabilities in today's mobile devices. Today smartphones are capable of performing tasks that range from entertainment to productivity, from content creation to content consumption, and from communications to business logistics. Indeed, many industry analysts believe that the miniaturization represented in mobile phones will be capable of replacing many functions performed by today's large computing devices.

In the year 2010, therefore—with the exponential innovation in the wireless space revolutionizing telecommunications as well as computing, it is truly unbelievable that only one model of cell phone provides complete built-in accessibility to people who are blind, deaf-blind, or visually impaired. It is also a matter of frustration to the blind community that only a select few models of smart phones are even compatible with add-on text to speech software that is often more costly than the device itself. This little accessibility available to the blindness community is further restricted by the fact that it is only available on smartphones, fueled by an unfortunate underlying assumption that all blind people want access to smartphones. This assumption leaves several classes of devices such as basic phones and devices otherwise known as feature phones without any accessibility features.

While some progress has been made by a small number of cell phone manufacturers, full access to all the features that cell phones offer to the sighted population remain largely inaccessible to individuals who are blind, visually impaired, or deaf-blind. Access to features is available on a very small number of phone models. This means that blind or visually impaired users can only receive calls on phones equipped with no speech or braille output. As a result, functionality such as calling other phones is restricted to people who have memorized telephone numbers and specific key sequences. Additional features such as battery status, message indicators, caller identification, and sending or receiving text messages (including emergency information that is increasingly made available via text messages) is not available to blind or visually impaired people.

Amidst this revolution represented by smartphone devices and an array of inexpensive mobile devices available to consumers today, it is not at all surprising that the ACB is compelled to view the state of accessibility of mobile devices as nothing less than abysmal for blind, deaf-blind, and visually impaired consumers. Other than minor exceptions, it is clear to us that the nation's blind consumers have been left behind in this revolution. We cannot help but believe that there will be further erosion unless radical steps are taken to alter the state of mobile phone access for this population.

While it must be acknowledged that Apple Corporation has shown nothing less than revolutionary zeal in pursuing accessibility for consumers by making all aspects of its iPhone operating system fully accessible to consumers who are blind, visually impaired, or deaf-blind at no additional cost, this remains a remarkable exception. In introducing Android, Google's phone operating system, the company has certainly shown a willingness to look at accessibility for blind and visually impaired consumers; however, Android's model of accessibility has thus far failed to produce significant progress in accessibility—particularly when considering the operation of significant phone functions. This is especially true for consumers who are deaf-blind wishing to use phones running the Android operating system. While Apple remains a business leader for a model of providing accessibility as a part of its day-to-day business practices and Google is taking some steps toward accessibility, it is less than what can be said for companies such as Microsoft, Nokia, and Research In Motion. In fact, it was recently announced that Microsoft, in recalling its Windows phone seven operating system, was unable to introduce accessibility. As a direct result, mobile phones released by Microsoft in October of 2010 will have no accessibility features for blind, deaf-blind, and visually impaired consumers. In fact, the accessibility available similar to its prior operating systems with add-on text to speech software will not even be possible for Windows Phone 7, leaving blind consumers without an option of purchasing a Windows phone for the foreseeable future. Research In Motion, a company known for its popular Blackberry devices, has chosen to pursue a model of providing access that would pass the cost of assistive technology to its blind consumers. Like Nokia and Microsoft, access to certain Research In Motion devices are available to blind and visually impaired consumers by purchasing an add-on text to speech software that costs in excess of USD500. The cost for Microsoft, Nokia, and Research In Motion's devices can be as much as 2 to 5 times the cost of the phone itself, directly affecting blind or visually impaired consumers or businesses, enterprises, nonprofits, or government entities who employ them.

I. Features not accessible to blind, low vision, and deaf-blind consumers

As discussed above, the available mobile devices that do provide some level of accessibility—whether or not at a significant cost, — generally do provide accessibility to basic functions of the phone by using speech and braille interfaces. However this functionality is limited to smartphones. The work done by the American Foundation for the Blind while testing various cell phone features remains seminal in determining the most basic functionality that mobile devices must be able to convey to blind, visually impaired, and Deaf-blind consumers. But, considering the fact that mobile wireless devices are much more than boxes to make phone calls, it is vital that they provide full and equal access to all phone functions to all consumers whether or not they have sensory disabilities. This functionality includes but is not limited to the following:

- access all menus
- edit contacts
- read messages
- send and receive text messages
- read caller-ID
- determine battery status
- access the Internet including entertainment options available on the phone
- have access to all built-in applications that accompany the phone

To have access to this functionality is even more vital for deaf-blind consumers. As costs for smartphones and the related assistive technology software tend to be often prohibitive, additional viable options must be made available. These options do not necessarily need to come through technical innovation. Carrier policy and procedures can provide appropriate equivalence. In an increasing era of technical sophistication, the deaf-blind population is particularly vulnerable to being left behind if steps are not taken to address accessibility. Solutions such as texting and mobile access to various features by integrating braille can provide a significant level of independence to people who are deaf-blind.

II. The cost and feasibility of accessible wireless solutions

While manufacturers of hardware and software for mobile wireless devices can provide a better insight on challenges to achieving access, it is notable that ensuring access to devices is not entirely impossible to achieve. ACB believes that the thought of providing access is highly dependent on the business model chosen by the cell phone manufacturer. It is a regrettable fact that the cell phone industry has adopted an unsustainable business model that passes on the cost of providing access to the consumer. As clearly demonstrated by Apple, a different model is not only possible but should be the default for the entire industry. This model suggests that the cost for providing access is born by the cell phone manufacturer and/or the developer of the operating system. With hundreds of millions of cell phones sold in the United States each year and since the number of cell phones sold is expected to only grow, there is no justification for manufacturers to *not* distribute costs for achieving access as a part of their total business costs. Additional justifications often heard which claim that these manufacturers have no expertise further fall flat when noting the fact that the expertise does exist. In fact, such expertise happens to be outside in the form of companies developing screen reading and screen magnification solutions.

In fact, it is all the more reason for ensuring that manufacturer business models change in favor of internal business processes of ensuring accessibility. External screen reader developers cannot have the development resources nor have access to the business culture to make adequate changes to operating systems or other software needed in order to keep up with the rapid pace of development. For companies such as Microsoft, RIM, and Nokia who particularly rely on external screen reader manufacturers, it is evident that accessibility to the software made available on their respective operating systems is less than adequate. It is further evident that, when accessibility is delivered, it is often done so months or years after the fact.

However, no matter how accessibility is delivered, blind, visually impaired, or deaf-blind consumers can no longer be expected to bear the cost of access. It is simply unthinkable to believe that those who need access to hardware and software for mobile devices are expected to pay an additional cost. In particular, this business model of providing access is unsustainable due to the fact that unemployment among this vulnerable population continues to be at a historic high. It is further unthinkable that businesses, educational institutions, nonprofits, and governmental entities are also expected to bear the cost of access for mobile wireless devices when the responsibility for providing access should be the manufacturers. ACB finds that the high cost for acquiring access to cell phones is often exacerbated by additional costs related to the need to change carriers to obtain best access as well as upgrade costs for the assistive technology solutions. Contract cancellation costs as well as costs for upgrades to assistive technology can add hundreds of dollars to owning a cell phone for blind users each year—all this cost to obtain the best access. Adequate policy and enforcement of existing laws can certainly ensure that blind people are not unduly penalized for their disabilities.

For many devices, manufacturers can no longer make technical claims to avoid making their products accessible. The availability of higher processing power for mobile devices along with increasingly smart operating systems has changed the way mobile computing occurs. These resources can also be used to achieve full access to today's mobile devices. As more and more manufacturers begin to standardize operating systems on their wireless devices, the technical barriers for achieving full access disappear. And, for devices that are unable to use the standard operating system, inexpensive technical solutions such as TTS chips can make manufacturing significantly more achievable. Furthermore, open source solutions such as the Liblouis braille libraries that allow software to seamlessly connect the majority of braille devices on the market can make the lives of software developers and hardware manufacturers significantly easier.

Not only is it vital to consider pricing and technical feasibility for achieving access to moderate cost cell phones, but it is also necessary to consider access to software made available by hardware manufacturers that serves as shells on standard operating systems. Software such as Senseview made available by HTC or other software made available by Motorola or Samsung on their hardware devices fails to provide adequate access. Therefore, not only the operating system software must be addressed.

III. Policy and other solutions that FCC can provide

First and foremost, it must be made absolutely clear to all manufacturers and carriers that cost for providing accessibility must not be passed on to consumers. No matter whether the manufacturer chooses to build accessibility into mobile wireless devices or whether it chooses to use an add-on to deliver access, all costs for such delivery must be borne by the company. Indeed, it must be acknowledged that the delineation for software and hardware access must be made among the various parties who take on the manufacturing of cell phone devices. ACB certainly recognizes the fact that the interplay between hardware and software is complex; it is, however, the ultimate responsibility of the manufacturer to provide full access.

Secondly, the Federal Communications Commission (FCC) should develop, in consultation with the blindness community, guidance in the form of a list of features that blind or visually impaired persons can expect from a telephone out of the box. As discussed above, these features would serve as a minimum set of standard mobile wireless features that must be accessible on each phone. In particular, these features must be accessible on moderately expensive wireless devices. This minimum level of access is significant not only for devices that a consumer obtains via contract through cell phone carriers, but it is important for prepaid and uncontracted phones. For smartphones, however, manufacturers must strive for full access to the device. In particular, it is important that a smartphones all built-in options are fully accessible; this is true of the basic functionality as well as applications made available to perform additional tasks.

Additional policies that address disincentives for blind consumers to obtain full access must be eradicated. Carriers who do not provide sufficient choices for blind, visually impaired, and deaf blind consumers to acquire accessible wireless devices across the spectrum of pricing options—in favor of only smartphone options, must consider policy implications. These policies include costs for obtaining mobile devices, contract termination charges when the consumer must upgrade to a new phone to obtain the best available accessible options, as well as costs for upgrades to assistive technology software should there be any. Steps must also be taken by wireless carriers to inform consumers of the cell phone choices that are available with accessibility options.

It is clear to the ACB that there is a significant gap between what a wireless carrier advertises and what the actual options happen to be. It has been a well-known fact that even though some wireless carriers have offered accessible phone choices, neither their customer service departments nor retail locations for those carriers are aware of the choices available to the consumer. Sprint, for instance, in response to this particular FCC notice, has indicated a number of choices that it makes available for its consumers who are blind or visually impaired. In its response, for instance, Sprint note several features that can aid blind or visually impaired consumers. These features include dialing the phone by speaking digits. While this is indeed a feature that all consumers may find useful, it does not solve the fundamental problem inherent for a blind consumer, which is the ability to hear audio or tactile feedback when adding, editing, or deleting a contact. In addition, no where on Sprint's web site does Sprint provide a list of phones, allowing users to compare the features that are accessible for particular phones. Additionally, when visiting Sprint's retail shops, users have not found useful information regarding choices. It must be noted that the problem of awareness is not limited to Sprint retail outlets. Verizon, AT&T, and T-Mobile outlets suffer a similar lack of awareness. Sprint's response is unfortunately a sad reflection on what the carrier considers to be adequate solutions for blind consumers.

The devices and solutions listed by Sprint that would meet the blindness community's needs are completely inadequate. If, indeed, a large carrier such as Sprint shows such lack of awareness for the needs of blind and visually impaired consumers by inadequately addressing their needs in an official filing to the Federal Communications Commission, one can clearly imagine the state of accessibility today.

Deaf-blind consumers, for who access must be made available via braille, the challenge for addressing accessibility needs not only lies at the technical level but will heavily rely upon policy and procedural methods. For now, mobile wireless devices capable of supporting braille output are smartphones equipped with screen reading software. Until this changes, the need to address accessibility by using

financially viable methods is paramount. Policies that require deaf blind consumers to purchase data plans or hundreds of dollars for smartphones when all they require is basic functionality or text messaging is unduly burdensome. ACB recommends, therefore, that the FCC consider carrier policy implications that provide these disincentives.

For too long, the FCC has left the problem of accessibility to mobile wireless devices in the hands of manufacturers and consumers. The filed complaints against manufacturers have not been investigated nor have any actions been taken against manufacturers for violating the provisions of section 255. Having further discussions with manufacturers is no longer adequate to ensure that blind, visually impaired, and deaf-blind consumers will have meaningful access to increasingly sophisticated devices in a timely manner. Policies and procedures to clarify rules as well as institute standards will ensure that mobile devices will be fully accessible to consumers who require them.

The FCC must take clear, unequivocal steps to allow manufacturers, operating system developers, and carriers to understand their responsibilities when it comes to providing access for consumers who are blind, visually impaired, and deaf-blind.

ACB is committed to continuing our advocacy on this critical issue to insure that our membership attains equal access to information and communication in the mobile space.

Respectfully submitted
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