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## **Accessible Cell Phones**

It can be challenging for individuals with vision loss to find a cell phone that addresses preferences for functionality and accessibility. Some prefer a simple, easy-to-use cell phone that isn't expensive or complicated while others prefer their phone have a variety of applications. It is important to match needs and capabilities to a cell phone with the features and applications needed by the user.

In regard to the accessibility of the cell phone, options to consider are:

- access to the status of your phone, such as time, date, signal and battery strength;
- options to access and manage your contacts;
- type of keypad or touch screen features
- screen reader and magnification options (built in or by installation of additional screen-access software);
- quality of the display (options for font enlargement and backlighting adjustment).

Due to the ever-changing technology in regard to cell phones, new models frequently come on the market. A wide variety of features on today's cell phones allow them to be used as web browsers, for email, multimedia messaging and much more. Section 255 of the Communications Act, as amended by the Telecommunications Act of 1996, requires that cell phone manufacturers and service providers do all that is "readily achievable" to make each product or service accessible.

### iPhone

The iPhone is an Apple product. The VoiceOver screen reader is a standard feature of the phone. Utilizing a touch screen, a virtual keyboard and voice control called SIRI the iPhone can do email, web browsing, and text messaging, as well as function as a telephone. The App Store, has many products from Apple as well as a variety of third party providers, with diverse features such as money identifiers, GPS navigation, games, references, social networking, and bar code scanners. It has a camera feature that allows taking and viewing of still pictures and videos, a calendar, a contact manager, and a music player. The iPhone will synchronize with your PC or Mac. A magnification or zoom function and color inversion are available for low vision users. Braille Displays can also be connected to the iPhone.

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## Android Phones

Android phones are very similar in functions as the iPhone, but not manufactured by Apple. The android operating system was developed by Google. Most Android phones now come with some accessibility features installed, though these vary depending on the phone and the version of the operating system. The official Google Screen Access product is called Talkback and it is gesture-based similar to VoiceOver on the iPad. Google Voice along with other factory voice Apps are installed on these phones which is similar to SIRI on the iPhone. As Google is constantly working to improve their software, devices with Android version 4.1-4.2 (Jelly Bean) and up offer the best accessibility options, including support for BrailleBack which allows the phone to be connected to a growing number of Bluetooth Braille displays. Many Apps are available for the android operating system similar to what is available for the iPhone.

## Jitterbug

The Jitterbug is a flip phone originally designed for seniors and those with low vision. The phone's distinguishing feature is ease of use with a large keypad, bright LCD screen and simple menu navigation. A similarly designed smartphone is now available called the Jitterbug Touch2.

## ODIN VI Talking Mobile Phone for the Visually Impaired

The ODIN VI Talking Mobile Phone is designed for persons who are blind or visually impaired. It has a large number keypad, tactile, buttons, and text-to-speech. The ODIN VI reads aloud what is displayed onscreen, speaks keys as you press them, and provides verbal prompts to help perform various functions.

## DeafBlind Communicator DBC

The basic DBC provides three types of communication for deafblind users: face-to-face, TTY, and SMS Texting. (Other more powerful features can be activated by the user if desired) The deaf-blind person uses Bluetooth connectivity to pair their HumanWare BrailleNote mPower device to an iPhone, iPod, or iPad.

## Screen Reader and Magnification Software for Cell Phones

Some cell phones have built-in screen reader and magnification software; others allow for third party add on software. Cell phone screen readers and magnifiers work like those on computers. Users need to be sure the phone has a compatible operating system with the screen reader software.

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## Applications for iPhones and Android Phones

The number of apps is ever increasing. As mentioned above, there are a number of applications that can be loaded onto an iPhone or one of the many android phones on the market to assist individuals who are blind or visually impaired. As with the phones, it is important that individuals research the various applications available and determine which ones best meet their needs and are compatible with their iPhone or android phone. Applications that offer Optical Character Recognition (OCR) will be most beneficial in assisting individuals with low or no vision. Apps may be free or a fee is charged to download onto a phone. Many times a lite version is available for free and then the more robust full version is available giving the user and opportunity to evaluate before purchasing.

Hundreds of thousands of great apps are available through:

- iTunes App Store at <http://store.apple.com/us/browse/app>
- Android Apps at <https://play.google.com/store/apps>

A few app options include:

- ZoomReader app for iPhones allows the user to point their iPhone camera at text, and then magnify the text up to 4X, change the font and alter the background color. This app can also take a picture of the text and turn it into a more readable format for the user. Readers can either read the text themselves, or opt to have the app read it aloud to them.
- Prizmo app for iPhones combines Optical Character Recognition with text to speech and translation by adding an optional text to speech module and various language modules. Scanning and OCR are built in. An internet connection is required for translation. A variety of items can be scanned and then image processed, such as business cards, receipts, bills, documents, and white boards.  
<http://www.creaceed.com/prizmo/iphone/>
- The LookTel Recognizer app allows users with visual impairments or blindness to instantly recognize everyday objects such as packaged goods in the pantry identity cards, items in a grocery store, or CDs in a music collection. Once a library has been built, users can point the iPhone's camera at an object and the phone will recognize and describe the item. Recognizer permits users to store images of objects in a database and have the iOS device quickly "recognize" these items later, by scanning the items with the camera. A barcode scanner is also included to provide additional identification and labeling help. The user can snap a picture with an iPhone, add an

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audio message, and then save it to the database.

<http://www.looktel.com/recognizer>

- IDEAL Magnifier turns Android phones into a portable video magnifier. This app is free, but is limited to real-time magnification and color change.
- The EyeNote app was developed by the US Bureau of Engraving and Printing as a tool to increase accessibility to US paper currency for individuals who are blind or visually impaired. Built for use with the iPhone, the app allows the user to scan the bank note and communicate its value back to the user. The app is available as a free download on the Apple App Store at <http://itunes.apple.com/us/app/eyenote/id405336354?mt=8&ls=1>
- Dragon Dictation, powered by Dragon Naturally Speaking software, is an easy-to-use voice recognition app for iPhone, iPad, and iPod touch. With Dragon Dictation, the user can dictate text or email messages, or the user can send notes and reminders to themselves using their voice. <http://www.nuance.com/for-business/by-product/dragon-dictation-iphone/index.htm>
- iBlink Radio app is free from Serotek Corporation and offers radio stations, podcasts, and reading services that are of special interest to individuals who are blind or have visual impairment.

Sources of information in this document include:

American Foundation for the Blind

National Federation for the Blind

The following list of websites (although not all inclusive) provides additional information on accessible cell phones:

American Foundation for the Blind [www.afb.org/cellphones](http://www.afb.org/cellphones)

National Federation of the Blind

[http://www.nfb.org/nfb/accessible\\_home\\_showcase.asp](http://www.nfb.org/nfb/accessible_home_showcase.asp)

VisionAWARE

<http://www.visionaware.org/section.aspx?FolderID=8&SectionID=115&TopicID=516&DocumentID=3726>

Verizon <http://www.verizonwireless.com/b2c/index.html>

AT & T <http://www.att.com/#fbid=1qaxJCeDBXZ>