

Applications for Visually Impaired

Visually impaired people have to constantly go through challenges to perform their everyday tasks. Communicating and understanding simple things often becomes a huge problem for them. Before a few decades we could not even imagine that we could advance in the field of assistive technology so much. This era is called the technological age for the very right reasons. Nowadays and especially in times of COVID - 19, smartphones have been to the rescue for most of us in getting important things done remotely.

According to Statista, the current number of smartphone users in the world today is 3.8 billion, and this means 48.16% of the world's population owns a smartphone. In the past few years, with innovative assistive technology and various apps available, the use of Smartphones have increased among Persons with Visual Impairment.

Earlier, Persons with visual impairments used to have difficulty in reading the small displays of mobile phones. The keypad based phones which required a separate screen reader for output are replaced by touch phones with built in accessibility features. In the early 2000s, "universally designed" models, featuring large font sizes, speech output, and other assistive technologies, became popular.

The Apple iPhone operating system, known as iOS, was the first smartphone to include a complete suite of accessibility features for users with visual impairments. All the features are available in all android devices in the settings section specially named as accessibility.

It is divided in sections like Screen reader, Visibility enhancements, Hearing enhancements, Interaction and dexterity features. Below table shows all the available features under these sections:

IOS features for accessibility	Android features for accessibility
<ul style="list-style-type: none">● VoiceOver,● VoiceOver + Braille,● Magnifier,● Spoken Content,● Zoom,● Hover Text,● Reduce Motion,● Audio Descriptions,● Text Size,● Display,	<ul style="list-style-type: none">● Use a screen reader:<ul style="list-style-type: none">○ TalkBack○ TalkBack braille keyboard○ Select to speak● Change your display:<ul style="list-style-type: none">○ Display size and font size○ Magnification○ Contrast and color options● Interaction controls:<ul style="list-style-type: none">○ Lookout

<ul style="list-style-type: none"> ● Accessibility Keyboard ● Dictation ● Accessibility Shortcuts, ● Dark Mode, ● Dictation ● Siri ● Sound Recognition ● Headphone Accommodations ● Live Listen ● RTT (Real Time Text) ● Scribble ● Closed captions 	<ul style="list-style-type: none"> ○ VoiceAccess ○ Switch Access ○ Action Blocks ○ Time to take action (Accessibility timeout) ● Use a Braille Display: <ul style="list-style-type: none"> ○ BrailleBack ● Audio & on-screen text: <ul style="list-style-type: none"> ○ Captions ○ Live Captions ○ Live Transcribe & Sound Notifications ○ Sound Amplifier ○ Hearing aid support ○ Real-time text (RTT) during calls
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There are many mobile apps designed for helping people to cope with visual impairment at the same time being in touch with the day to day happenings. One of such example is given below for better understanding,

Mobile Apps for Accessibility:

BlindSquare:

BlindSquare is the world's most widely used accessible GPS-app developed for the blind, deafblind and partially sighted. Paired with third-party navigation apps, BlindSquare's self-voicing app delivers detailed points of interest and intersections for safe, reliable travel both outside and inside.

Features:

- Location:
 - BlindSquare gathers information about your surroundings on Foursquare and OpenStreetMap
- Favorites:
 - Mark your saved places
- Voice Over
 - Uses Acapela voices in many different languages to announce information about your environment.
- Social Media

- BlindSquare can access your account so you can check into your favorite venues by simply shaking your device.
- Interests
 - Determine information such as popular cafes, post offices or libraries
- Navigation
 - Shake your device to hear your current address and details about the nearest intersection and venues around you.
 - Track your destination and periodically announce the distance and direction
 - Mark your position to find details later
- Languages
 - Available in 186 languages

People have found new hope in these assistive apps to navigate things. It gives them a chance to be confident and do something on their own. It is surely the success of technology in achieving this and empowering millions of people worldwide with these innovations.