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Yamagata Visit, 2015

# ASSISTIVE TECHNOLOGY & MOBILE DEVICES

# Assistive Technology Resource Center (ATRC)

## **ATRC Mission:**

Ensuring equal access to technology and electronic information for CSU students and employees with disabilities as defined by the Americans with Disabilities Act and Sections 504 and 508 of the Rehabilitation Act.



# Most Popular Operating Systems

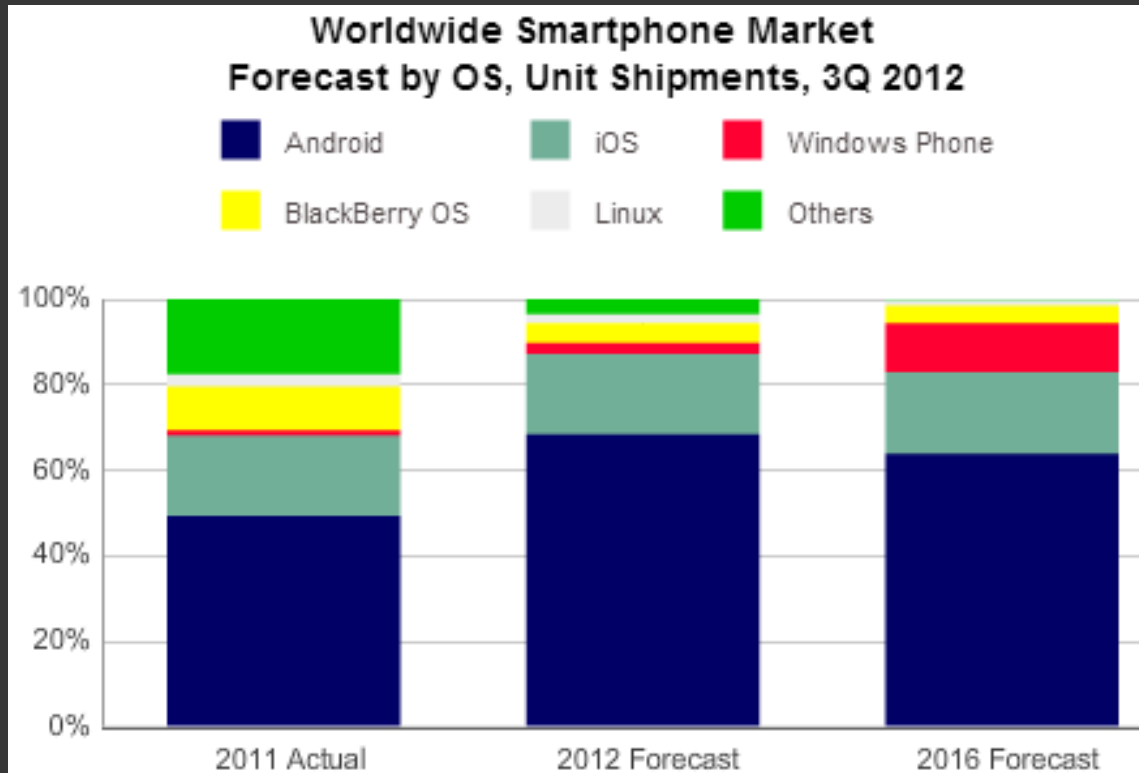


iOS



Android

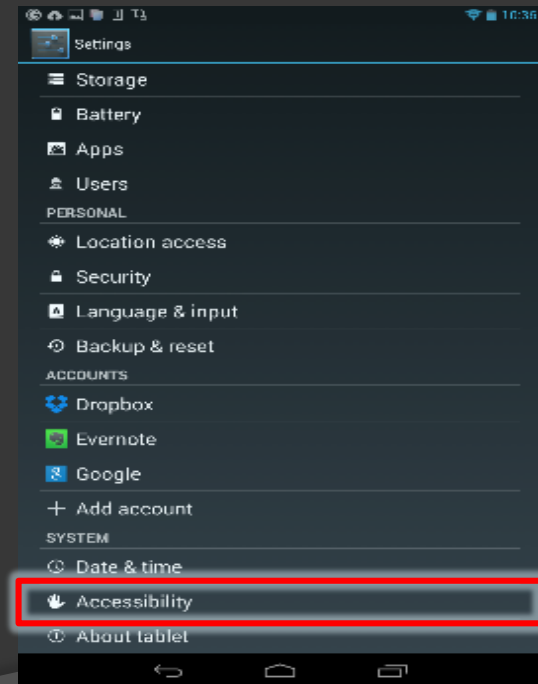
# Worldwide Smartphone Market



(International Data Corporation, 2015)

# Built-in Accessibility Features

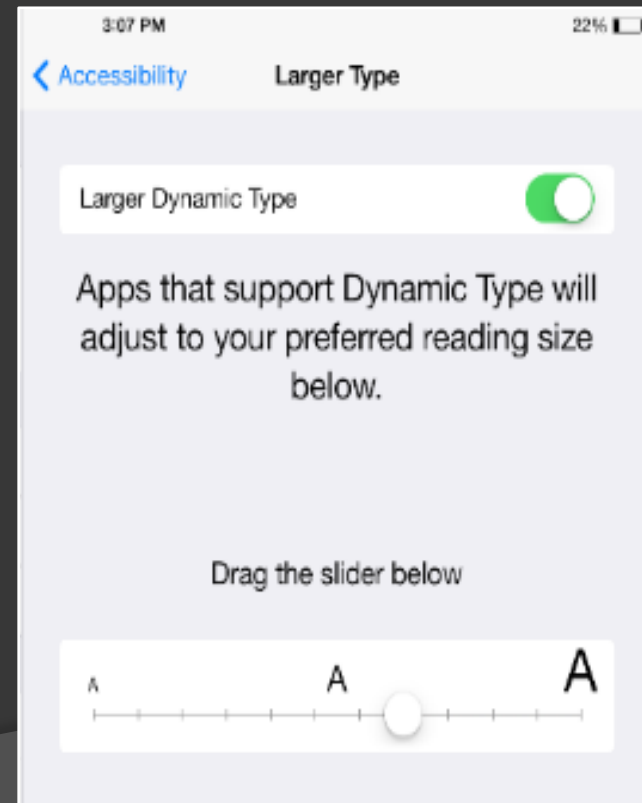
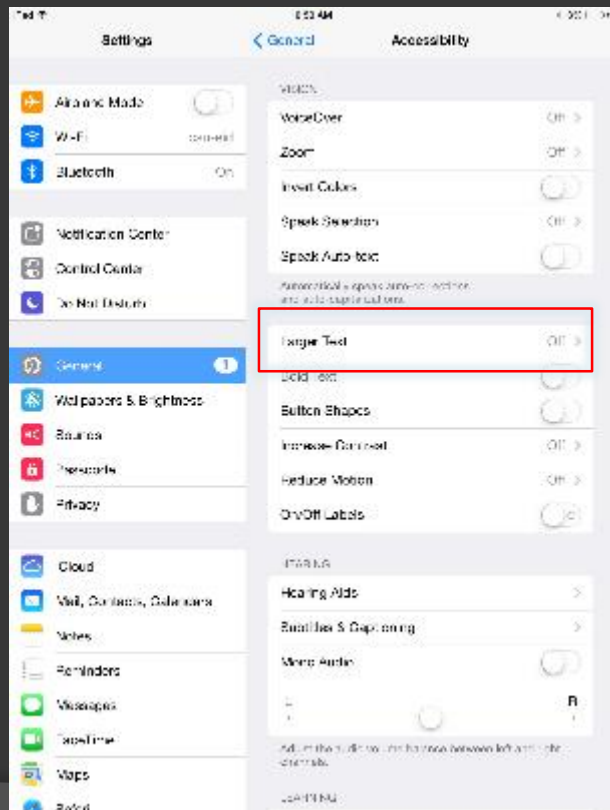
- Already installed
- Helps people with disabilities
- Helpful for everyone



# Enlarge Text Size

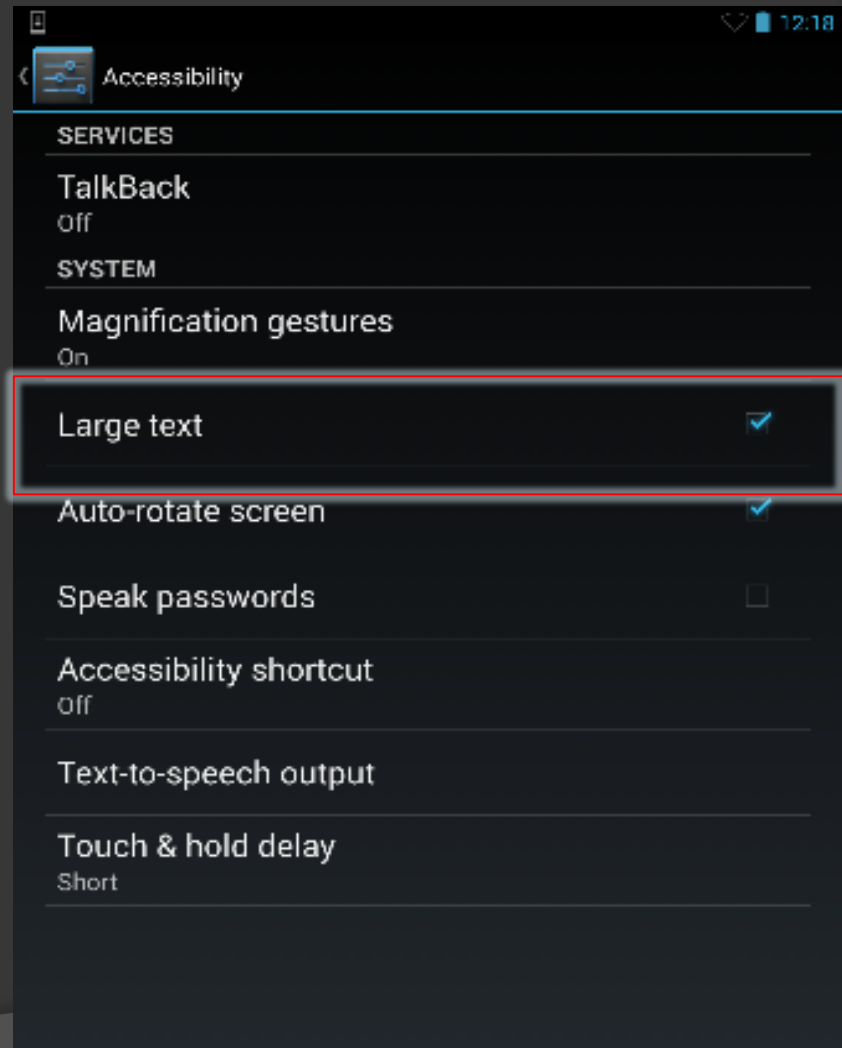
## ⦿ iOS 8

- ⦿ Accessibility → Larger Type  
→ Tap



# Enlarge Text Size

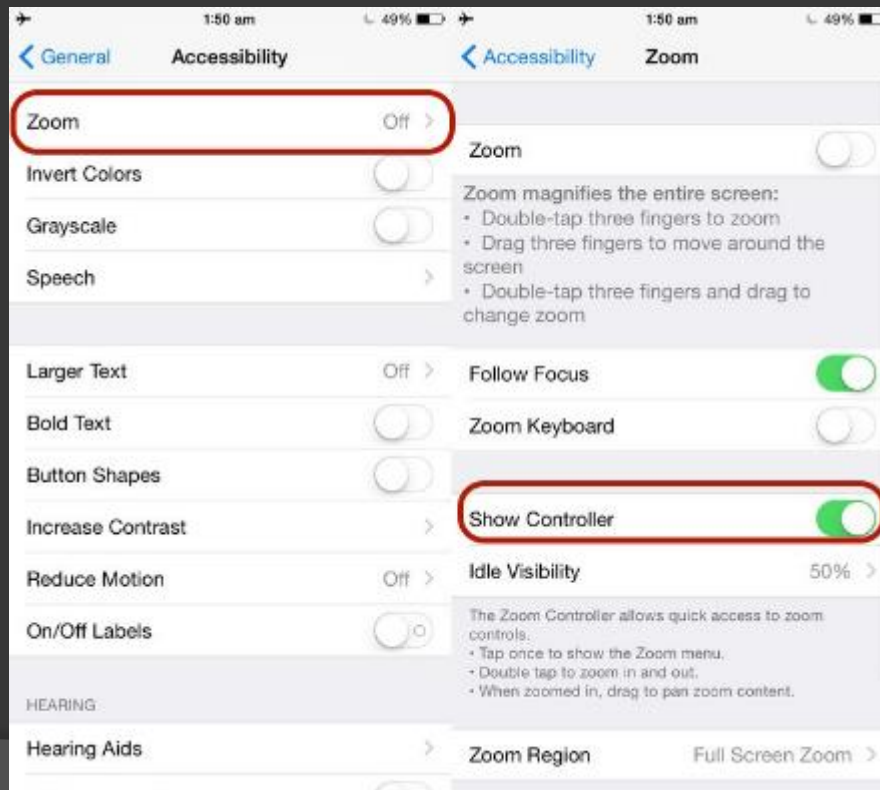
- ⦿ Android
- ⦿ Accessibility → Large Text



# Magnification

## ⦿ iOS8

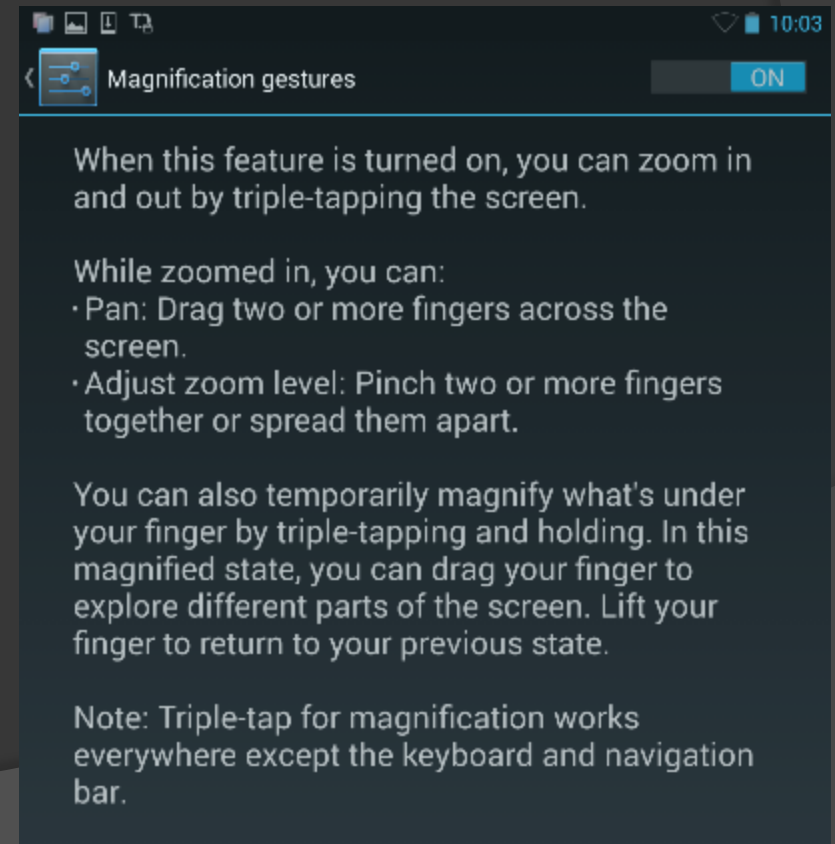
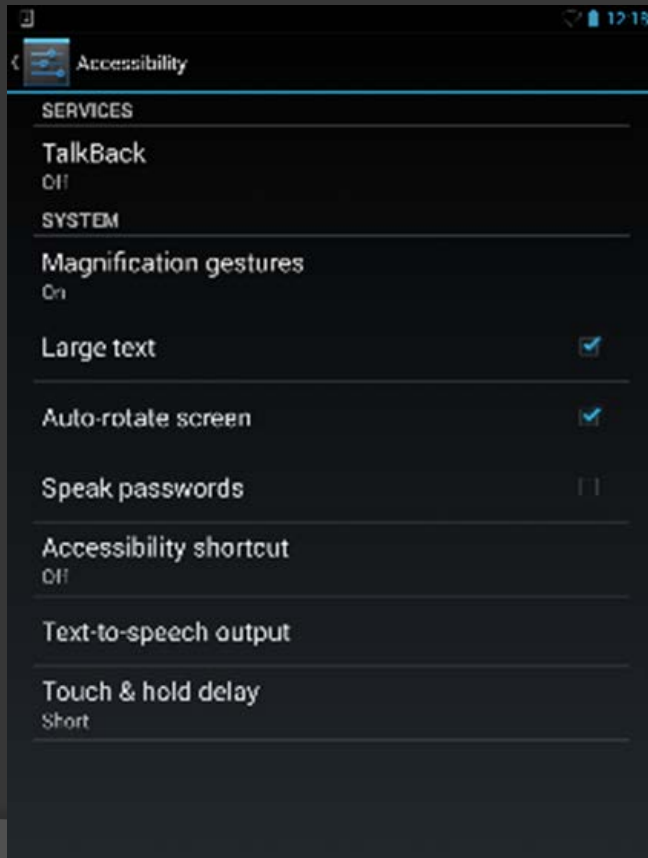
### ⦿ Accessibility → Zoom





# Magnification

- Android
- Accessibility → Magnification

A screenshot of the Android 'Magnification gestures' settings page. The title bar shows 'Magnification gestures' with a back arrow on the left and a battery icon and time '10:03' on the right. A toggle switch on the right is turned 'ON'. The main content area contains the following text:

When this feature is turned on, you can zoom in and out by triple-tapping the screen.

While zoomed in, you can:

- Pan: Drag two or more fingers across the screen.
- Adjust zoom level: Pinch two or more fingers together or spread them apart.

You can also temporarily magnify what's under your finger by triple-tapping and holding. In this magnified state, you can drag your finger to explore different parts of the screen. Lift your finger to return to your previous state.

Note: Triple-tap for magnification works everywhere except the keyboard and navigation bar.

# High Contrast

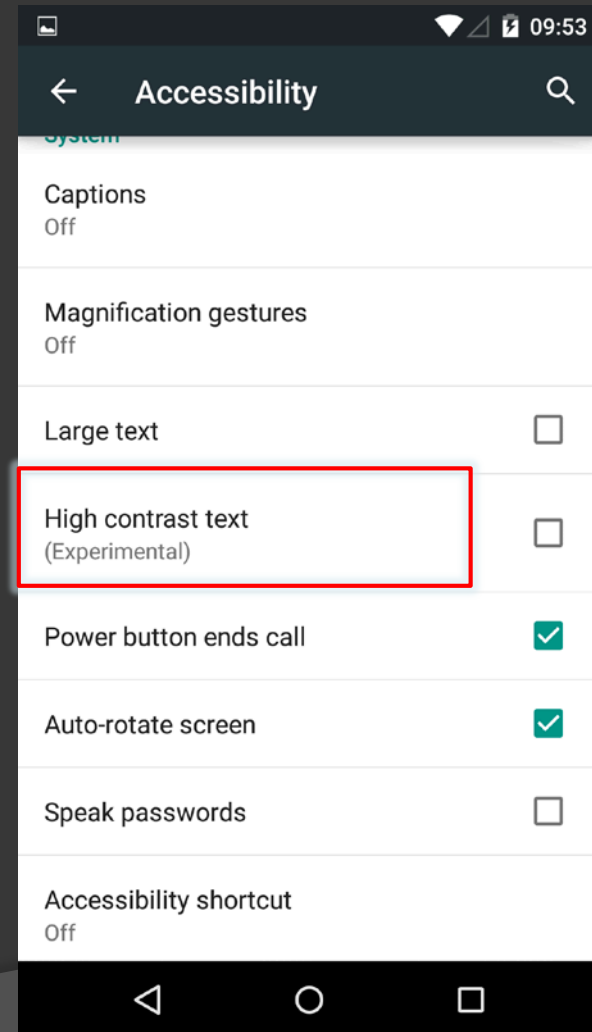
## ⦿ iOS8

Accessibility → increase contrast



# High Contrast

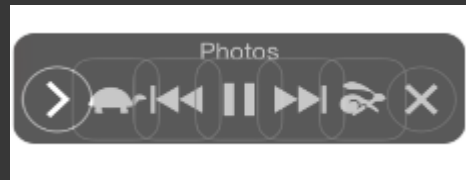
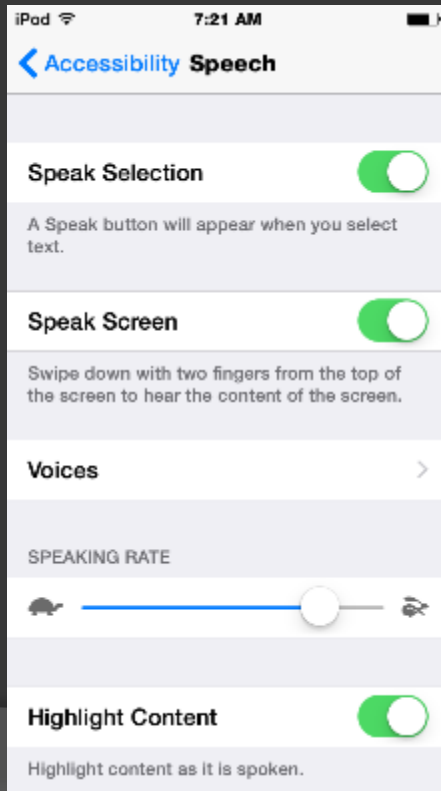
- ⦿ Android
- ⦿ Android does not have inverted color option
- ⦿ Accessibility → High Contrast



# Screen Reading

## ⦿ iOS8

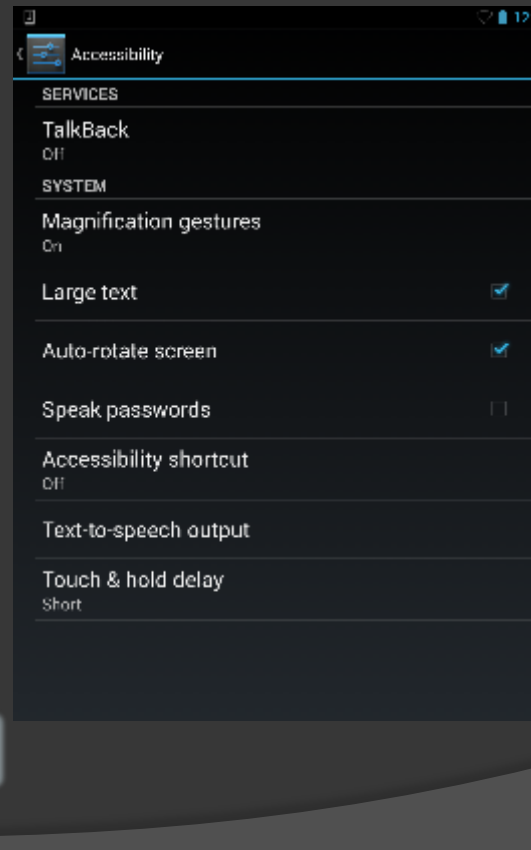
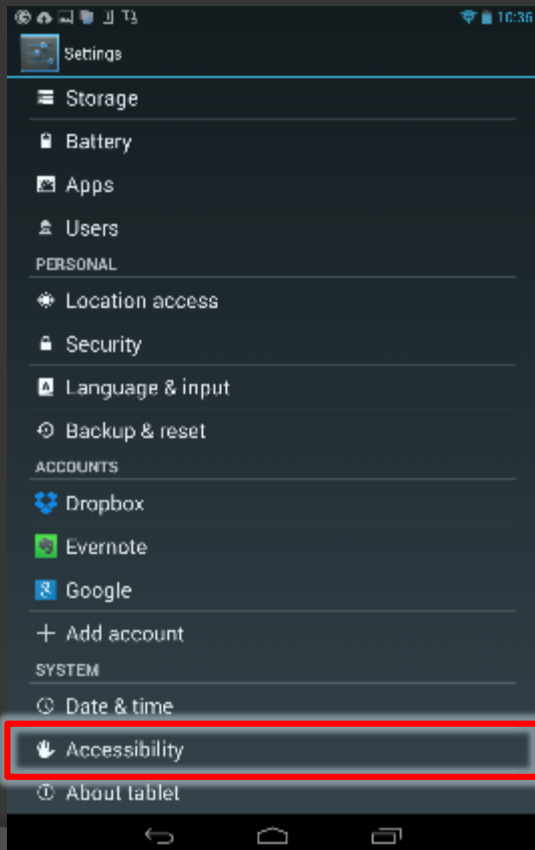
- Accessibility → Speech → swipe Speak Screen
- Accessibility → Voice Over



# Screen Reading

## Android

### Accessibility → TalkBack



users. For example, it describes what you touch,

## ▲ Use TalkBack?

TalkBack needs to:

- **Observe your actions**  
Receive notifications when you're interacting with an app.
- **Retrieve window content**  
Inspect the content of a window you're interacting with.
- **Turn on Explore by Touch**  
Touched items will be spoken aloud and the screen can be explored using gestures.
- **Turn on enhanced web accessibility**  
Scripts may be installed to make app content more accessible.
- **Observe text you type**  
Includes personal data such as credit card numbers and passwords.

Cancel

OK

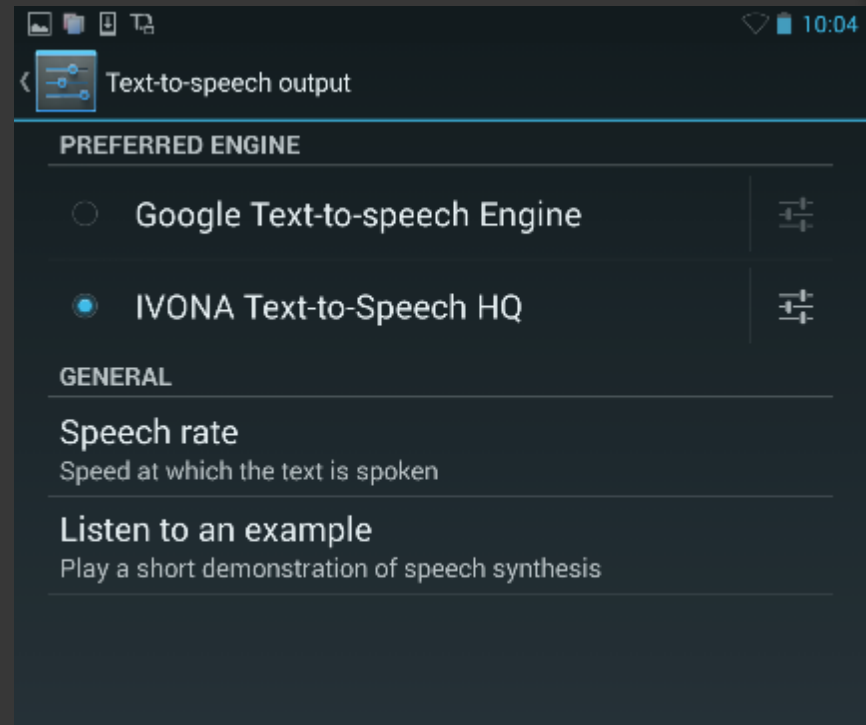
# Text-to-Speech

- iOS8
- Tap and hold messages and text for Speak



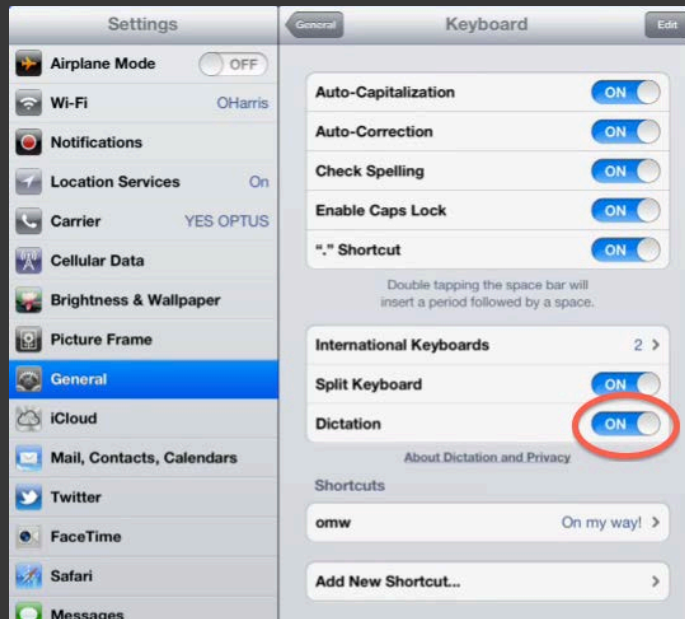
# Text-to-Speech

- Android
- Text-to-speech app needed



# Dictation

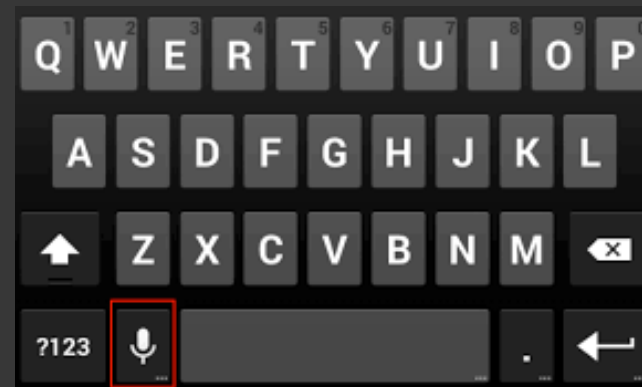
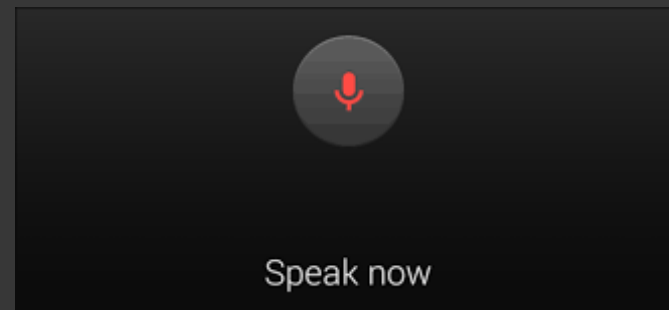
- iOS8
- Text & Audio messages





# Dictation

- Android
  - Text messages



# Additional Apps

## ◎ iOS & Android

### OnseiBunko - The Text to Speech Voice Reader for ... - Apple

<https://itunes.apple.com/...text-to-speech/id685782917...> ▾ このページを訳す

無料 - iOS

2014/01/27 - Download OnseiBunko - The Text to Speech Voice Reader for Japanese Classic Books and enjoy it on your iPhone, iPad, and ... \*If you have audio issues after updating iOS8, please reinstall the app to install voices again.

### Voice Dream Reader - Apple

<https://itunes.apple.com/jp/app/voice-dream-reader/id496177674?mt=8> ▾

★★★★★ 評価: 4 - 14 票 - ¥1,000 - iOS

... のレビューや、カスタマー評価をチェック。Voice Dream Reader をダウンロードして iPhone, iPad, iPod touch でお試しください。... 機能が強化された36のVoiceOverボイスを全言語無償で使用できます(iOS 7のみ) - ボイス「Heather」が無償付属

### iOSで使える日本語OKな音声読み上げエンジン8種(TTS ...) - Qiita

[qiita.com/shu223/items/223492e4f061032e652e](http://qiita.com/shu223/items/223492e4f061032e652e) ▾

2013/12/02 - iOS7 から AVSpeechSynthesizer クラスが追加され、音声合成(読み上げ / Text to Speech) が手軽に使えるようになりました。既に 日本語を含む36種の言語に対応したvoice が用意されていて、音質もなかなかです。ひらがなも漢字も ...

### The Text to Speech Voice Reader for Japanese Classic Books

[www.appannie.com/.../ios/.../onseibunko-the-text-to-speech-voice-reader-f...](http://www.appannie.com/.../ios/.../onseibunko-the-text-to-speech-voice-reader-f...)

Description. Download over 10,000 public domain Japanese classic books and listen to them with a natural voice on the go. \*If you have audio issues after updating iOS8, please reinstall the app to install voices again.

### iOSアプリ「Voice Reader Text to Speech」 - CNET Japan

[japan.cnet.com](http://japan.cnet.com) > ビジネスアプリセンター > iPhone ▾

★★★★★ 評価: 4 - 投稿: CNET Japan

2012/12/30 - Voice Reader Text to Speechは、画面上のテキストを英語やその他の言語で読み上げてくれるアプリだ。対応言語は、英国英語、米国英語、ドイツ語、フランス語、イタリア語などのヨーロッパ言語17カ国語で、残念ながら日本語には対応し ...

### N2 TTS - Google Play の Android アプリ

<https://play.google.com/store/apps/details?id=jp.kddilabs.n2tts&hl=ja> ▾

★★★★★ 評価: 4 - 725 票 - 無料

最新情報の確認、不具合報告、ご要望などは、以下の Twitter アカウントにどうぞ #  
<http://twitter.com/n2tts> 「N2 TTS」は株式会社KDDI研究所が開発した日本語音声合成ソフトウェア「N2」をベースとする、Android標準音声合成インタフェース準拠の日本語 ...

### アンドロイドで日本語音声出力:音声読み上げ - WisteriaHill

[foonyan.sakura.ne.jp/wisteriahill/website/jqm\\_template15/](http://foonyan.sakura.ne.jp/wisteriahill/website/jqm_template15/) ▾

アンドロイドにデフォルトで入っている音声データは日本語に対応していません。で、なんかないかと探してみ ... Activity; import android.os.Bundle; import android.speech.tts.TextToSpeech; import android.speech.tts.TextToSpeech.OnInitListener; import ...

### テキストの読み上げ(TextToSpeech)を利用する | Tech Booster

[techbooster.org/android/application/550/](http://techbooster.org/android/application/550/) ▾

テキスト読み上げ、音声合成と聞くと難しく感じてしまうかもしれませんがAndroidではTextToSpeechというクラスが用意されており、簡単に利用することができます。手順として ... 日本語音声でAndroidがしゃべる「N2 TTS」、「ささやくヤーツ」ついに登場!! | 新!