

Office of the Government Chief Information Officer

# Mobile Apps Accessibility

Experience Sharing on Accessibility of GovHK Branded Mobile Apps

E-Government Service Delivery Division

4 December 2012



# Characteristics of Accessible Apps

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## For Apple's iOS

- All UI elements with which users can interact are accessible and can provide accurate and helpful information about its screen position, name, behavior, value, and type.

## For Android

- Accessibility measures how successfully a product can be used by people with varying abilities, including persons with disabilities such as visual impairment, color deficiency, hearing loss, and limited dexterity.

# Building Accessible Apps

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- To enhance accessibility requires
  - Understanding of difficulties encountered by persons with disabilities in using mobile devices / apps.
  - Adopting relevant standards and best practices.
  - Availability of assistive technologies in devices, such as screen readers, text-to-speech / speech-to-text engines, haptic technologies, etc.

# Experiences Learnt in GovHK Branded Apps

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- Initial comments on the GovHK Notifications and GovHK Apps were sought from some disability related organisations before launching.

# Experiences Learnt in GovHK Branded Apps (con't)

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- Concerns and Resolutions
  - **Comprehensible labels for images** – Include “Alternative Text” to images.
  - **Intuitive navigation sequence** – Re-group related elements.
  - **Comprehensive cancel buttons (e.g. in wheel picker view)** – Include cancel buttons.

# Experiences Learnt in GovHK Branded Apps (con't)

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- Concerns and Resolutions (con't)
  - **Speak Roman letters as numbers** – Include alternative number mappings.
  - **Speak date/time labels meaningfully** – Include alternative date format mappings.
  - **Speak web contents properly** – Test with popular combinations of text-to-speech engines and screen readers.

# Framework & Standards

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- Development Frameworks
  - iOS (e.g. VoiceOver is proprietary and built-in)  
[developer.apple.com/technologies/ios/accessibility.html](http://developer.apple.com/technologies/ios/accessibility.html)
  - Android (e.g. TalkBack or 3<sup>rd</sup> party solutions)  
[developer.android.com/guide/topics/ui/accessibility/index.html](http://developer.android.com/guide/topics/ui/accessibility/index.html)
- W3C Standards (mostly for browsers)
  - WCAG 2.0  
[www.w3.org/TR/WCAG/](http://www.w3.org/TR/WCAG/)
  - Mobile Web Best Practices 1.0  
[www.w3.org/TR/mobile-bp/](http://www.w3.org/TR/mobile-bp/)
  - No industry standards for native app (yet)

# Framework & Standards (con't)

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- Mobile Web Best Practices 1.0
  - Intended for web browsing on mobile devices, more related to web than native app (e.g. has no power or memory or gestures friendly tips).
  - General good practices from WCAG 2.0 also applies in mobile web browsing.
  - Suggested content adaptation aspects, such as details of markups, format of images, image sizes, color depths, etc., to suit device specifics.



# Framework & Standards (con't)

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- Mobile Web Best Practices 1.0 (con't)
  - **Default Delivery Context** defines some thresholds, such as:
    - Usable Screen Width
    - Markup Language Support
    - Character Encoding
    - Image Format
    - Maximum Total Page Weight
    - Colors

# Framework & Standards (con't)

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- Mobile Web Best Practices 1.0 (con't)
  - Adaptation can be carried out in a number of different points in the delivery of content
    - Server-side
    - In-Network
    - Client-side
  - The process of adaptation should aim at enhancing usability and thus accessibility.

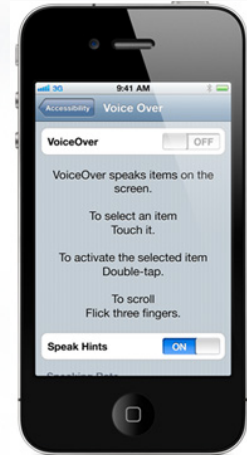
# Accessibility Features of iOS Devices

- Built-in VoiceOver screen reader
  - Multi-languages support and text echoing with each character input.
- Other features:
  - Zoom
  - White on Black
  - Mono Audio
  - Speak Auto-text
  - Voice Control
- Apply for iOS 3.0+



# Accessibility Features of iOS Devices (con't)

- Demo on Accessibility Setup
  - [www.youtube.com/watch?v=BLSNJFZ6eu4&feature=youtu.be](http://www.youtube.com/watch?v=BLSNJFZ6eu4&feature=youtu.be)
- Demo on Gestures
  - [www.youtube.com/watch?v=\\_pW1H7w9li4](http://www.youtube.com/watch?v=_pW1H7w9li4)
  - [www.youtube.com/watch?v=tPK7C7B1S1g&feature=youtu.be](http://www.youtube.com/watch?v=tPK7C7B1S1g&feature=youtu.be)



# Accessibility Features of Android Devices

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- **TalkBack** is a pre-installed screen reader.
- **Explore by Touch** is a system feature that works with TalkBack, allowing you to touch your device's screen and hear what's under your finger via spoken feedback.
- **Accessibility settings** let you modify your device's display and sound options, such as increasing the text size, changing the speed at which text is spoken.

## Accessibility Features of Android Devices (con't)

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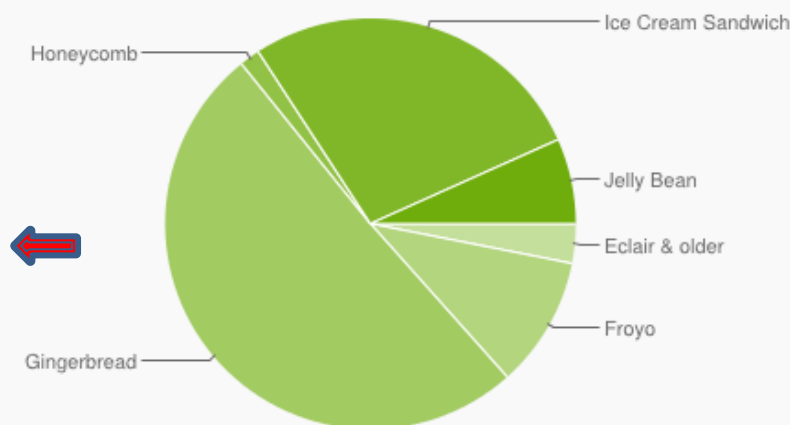
- Versions 2.2 – 4.1 (API Level 8+) have basic text-to-speech support (around 95% of all devices).
- Versions 4.0 – 4.1 (API Level 14+) have better web content text-to-speech support (around 22% of all devices), and have the “Explore by Touch” feature.
- Device-dependent assistive technology such as D-Pad (either h/w based or 3rd party s/w, e.g. Eyes-Free Keyboard).

# Accessibility Features of Android Devices (con't)

## Current Distribution

The following pie chart and table is based on the number of Android devices that have accessed Google Play within a 14-day period ending on the data collection date noted below.

Version	Codename	API	Distribution
1.5	Cupcake	3	0.1%
1.6	Donut	4	0.3%
2.1	Eclair	7	2.7%
2.2	Froyo	8	10.3%
2.3 - 2.3.2	Gingerbread	9	0.2%
2.3.3 - 2.3.7		10	50.6%
3.1	Honeycomb	12	0.4%
3.2		13	1.2%
4.0.3 - 4.0.4	Ice Cream Sandwich	15	27.5%
4.1	Jelly Bean	16	5.9%
4.2		17	0.8%



Data collected during a 14-day period ending on December 3, 2012

[developer.android.com/about/dashboards/index.html](http://developer.android.com/about/dashboards/index.html)



# Successful Examples



# GovHK Branded Apps Demo

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- **App Name : Tell me@1823**

- Platform : iOS 5

- Device : iPhone 4

- URL :

[www.youtube.com/watch?v=68O1\\_LT0mWk](http://www.youtube.com/watch?v=68O1_LT0mWk)

# GovHK Branded Apps Demo (con't)

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- **App Name : GovHK Notifications**

- Platform : iOS 6 (Beta)

- Device : iPhone 4S

- URL :

- [www.youtube.com/watch?v=-RLLfQ72bBg&feature=youtu.be](http://www.youtube.com/watch?v=-RLLfQ72bBg&feature=youtu.be)

# GovHK Branded Apps Demo (con't)

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- **App Name : GovHK Apps**

- Platforms : iOS 6 (Beta) & Android 2.3.3

- Devices: iPhone 4S and HTC Sense

- URL :

- [www.youtube.com/watch?v=sAiQ1DGXmMY&feature=youtu.be](http://www.youtube.com/watch?v=sAiQ1DGXmMY&feature=youtu.be)

- URL :

- [www.youtube.com/watch?v=3UMX7ZBgL78&feature=youtu.be](http://www.youtube.com/watch?v=3UMX7ZBgL78&feature=youtu.be)

# Lessons Learnt

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- Key Challenges on User Interface (UI) Design
  - Layout of icons
  - Layering
  - Clarity of Voice Engine
  - Web Content Rendering (text-to-speech)
  - Diversity of platforms and devices

**Thank you!**