The Accessibility Divide in the Mobile Phone Market

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Salimah LaForce
Rehabilitation Engineering Research Center for Wireless Inclusive Technologies
CACP is an R&D policy unit at the Georgia Institute of Technology, with a focus on advanced communications. CACP is the home of the Wireless RERC which aims for a transformative future that will increase inclusion of people with disabilities.

**Our process:**

Research • Accessible Product Development • Neutral Authority to Inform Policy
Provide evidenced-based regulatory recommendations regarding the state of mobile phone accessibility.

- The Federal Communications Commission (FCC) 2018 biennial evaluation of the impact of regulations that implement the Twenty-First Century Communications and Video Accessibility Act of 2010 (CVAA).

- Requested stakeholder “input on the state of accessibility of “mobile” or wireless services, including basic phones and feature phones (collectively referred to herein as non-smartphones), as well as smartphones.”

- 2017 Mobile Phone Accessibility Review.
Why?

Policy
- Proposed rules
- Final rules

Industry guidance and standards
- Tech development
- Business practices

The market
- Accessibility features in mainstream wireless technologies

The user experience
- Improved access to and utility of devices and services
- Increased adoption and decreased abandonment
Mobile Phone Accessibility Features

214 Mobile Phones evaluated
Presence of 26 features

Accessibility by Provider Type
Five Lifeline Carriers
Four Wireless Carriers
One Prepaid Carrier

Accessibility by Phone Type
Smartphone
Non-smartphone

Accessibility by Type of Disabilities
Visual Disabilities
Hearing Disabilities
Cognitive Disabilities
Mobility Disabilities

Carrier Type
Lifeline
Tier 1

WEA-Capability

Methods
Study Limitations

- Features included in the review are not an exhaustive list.

- For many of the features, information about whether it was included in the phone could not be found.

- We cannot conclusively state that the features are or are not present.
Results
Operating Systems

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Android</td>
<td>50%</td>
</tr>
<tr>
<td>Proprietary</td>
<td>32%</td>
</tr>
<tr>
<td>N/A</td>
<td>12%</td>
</tr>
<tr>
<td>iOS</td>
<td>5%</td>
</tr>
<tr>
<td>Windows</td>
<td>1%</td>
</tr>
<tr>
<td>BlackBerry OS</td>
<td>0%</td>
</tr>
</tbody>
</table>
Phone Type

- Smartphones: 59%
- Non-smartphones: 38%
What is the tradeoff?

- Bluetooth
- Touch Input
- Voice Input
- Adjust Font
- Headphone Jack
- 2 Way Video
- Contrast Adjustment
- Built-in TTS
- Captions
- Simple Display
- Full access screen reader
- Biometric Log-in
- FM Radio
- Near Field Communications (NFC)
- Vibration Adjustment
- Braille access
- Mirror Link
- Infrared (IR)
- Physical QWERTY?
- Procure TTS
- Physical # Keypad?

Non-smartphones
Smartphones

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Accessibility Features
### Accessibility Features for Mobility/Dexterity Disabilities

- **Voice Input**: 66%
- **Simple Display**: 34%
- **Biometric Log-in**: 27%
- **Near Field Communications (NFC)**: 27%

### Accessibility Features for Cognitive Disabilities

- **Voice Input**: 93%
- **Built-in TTS**: 89%
- **Contrast Adjustment**: 83%
- **Simple Display**: 63%
- **Biometric Log-in**: 59%
- **Full access screen...**: 53%
- **Procure TTS**: 1%
WEA-Capable Sub-Sample
Longitudinal Comparison of WEA-Capable Handsets
## Tier 1 Phones v. Lifeline Phones

<table>
<thead>
<tr>
<th>Feature</th>
<th>Tier 1</th>
<th>Lifeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bluetooth</td>
<td>100%</td>
<td>85%</td>
</tr>
<tr>
<td>USB</td>
<td>99%</td>
<td>95%</td>
</tr>
<tr>
<td>Voice Input</td>
<td>90%</td>
<td>100%</td>
</tr>
<tr>
<td>Smart Phon.</td>
<td>90%</td>
<td>90%</td>
</tr>
<tr>
<td>Adjust Font</td>
<td>90%</td>
<td>88%</td>
</tr>
<tr>
<td>Built-in TTS</td>
<td>90%</td>
<td>84%</td>
</tr>
<tr>
<td>Headphone Jack</td>
<td>90%</td>
<td>79%</td>
</tr>
<tr>
<td>Contrast Adjustment</td>
<td>90%</td>
<td>78%</td>
</tr>
<tr>
<td>2-way Video</td>
<td>88%</td>
<td>72%</td>
</tr>
<tr>
<td>WEA</td>
<td>84%</td>
<td>63%</td>
</tr>
<tr>
<td>Biometric Log-In</td>
<td>50%</td>
<td>22%</td>
</tr>
<tr>
<td>Captions</td>
<td>40%</td>
<td>17%</td>
</tr>
<tr>
<td>Simple Display</td>
<td>53%</td>
<td>8%</td>
</tr>
<tr>
<td>Full Access Screen Reader</td>
<td>26%</td>
<td>20%</td>
</tr>
<tr>
<td>Braille Access</td>
<td>37%</td>
<td>21%</td>
</tr>
<tr>
<td>Near Field Communications (NFC)</td>
<td>22%</td>
<td>12%</td>
</tr>
<tr>
<td>Vibration Adjustment</td>
<td>22%</td>
<td>17%</td>
</tr>
<tr>
<td>FM Radio</td>
<td>17%</td>
<td>49%</td>
</tr>
<tr>
<td>Mirror Link</td>
<td>8%</td>
<td>43%</td>
</tr>
<tr>
<td>Physical # Keypad?</td>
<td>9%</td>
<td>38%</td>
</tr>
<tr>
<td>Infrared (IR)</td>
<td>1%</td>
<td>30%</td>
</tr>
<tr>
<td>Physical Qwerty?</td>
<td>0%</td>
<td>16%</td>
</tr>
<tr>
<td>Procure TTS</td>
<td>0%</td>
<td>9%</td>
</tr>
</tbody>
</table>
In the aggregate, the accessibility of mobile phones is improving. Accessibility features are not uniformly available in all phone models.

On average, only half (or less) of accessibility features were found when the data were parsed.

Lifeline provider phones in the sample had diminished levels of accessibility.

It is essential that Lifeline providers participate in WEA and that their devices are accessible.

A more inclusive mobile market would allow individuals with disabilities to select from more devices.
Contact & Connect

Salimah LaForce, Sr. Policy Analyst - Salimah@cacp.gatech.edu
Coauthors:
Dara Bright, Research Technician III
Andrew Garcia, Graduate Research Assistant (former)

http://www.wirelessrerc.gatech.edu/

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Accessible Technology Policy Group

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