The MBTA Bus Schedule Line

Tufts University
Speech Recognition
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Outline

• MBTA
• Scenario
• Current Solutions
• Our Solution
• Usability Test
• Project Expansion
• Questions?
• 364,000 bus users daily
• 1,030 buses
• 9,000 stations/stops
• 162 routes
• 730 miles covered
Just missed the bus
Taking a different bus than normal
Current Solutions

- Paper schedule
- Website
- Mobile website
- PDA downloads
<table>
<thead>
<tr>
<th>Current Solutions</th>
<th><strong>Our Solution</strong></th>
<th>Potential Users</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allow users to call the system and receive the schedule for any MBTA bus line</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Uses technology available to most people</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>No future planning needed</td>
<td></td>
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</tbody>
</table>
• Need immediate access to schedules
• Without mobile internet access cell phones
• Without PDA’s
• No internet access
<table>
<thead>
<tr>
<th>Potential Users</th>
<th>Design</th>
<th>Features</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Allows for quick access to bus schedules</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Linear call flow</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Short prompts</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Simple language</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
• Users only need to know bus line
• Returns next three stopping times
• Can get schedule for any day
• AM or PM?
• Notifies users of alternate methods to obtain schedule
<table>
<thead>
<tr>
<th>Features</th>
<th>Implementation</th>
<th>Parsing the web</th>
<th>Demo</th>
</tr>
</thead>
</table>

- Ruby
  - ‘rubygems’
  - ‘cgi’
  - ‘builder’
  - ‘hpricot’
  - ‘open-uri’
## Schedules & Maps

### 27 - Mattapan Sta. - Ashmont Sta. via River St.

**Direction:** Inbound  
**Timing:** Weekday  
**Redisplay Time:**

<table>
<thead>
<tr>
<th>Mattapan Station</th>
<th>River St Opp Cedar St</th>
<th>Dorchester Ave Opp Adirondack Pl</th>
<th>Dorchester Ave &amp; Gallivan</th>
</tr>
</thead>
<tbody>
<tr>
<td>05:15 AM</td>
<td>05:19 AM</td>
<td>05:22 AM</td>
<td>05:24 AM</td>
</tr>
<tr>
<td>05:45 AM</td>
<td>05:49 AM</td>
<td>05:52 AM</td>
<td>05:54 AM</td>
</tr>
<tr>
<td>06:20 AM</td>
<td>06:24 AM</td>
<td>06:27 AM</td>
<td>06:20 AM</td>
</tr>
<tr>
<td>06:55 AM</td>
<td>06:59 AM</td>
<td>07:02 AM</td>
<td>07:05 AM</td>
</tr>
<tr>
<td>07:30 AM</td>
<td>07:34 AM</td>
<td>07:37 AM</td>
<td>07:40 AM</td>
</tr>
<tr>
<td>08:05 AM</td>
<td>08:09 AM</td>
<td>08:12 AM</td>
<td>08:15 AM</td>
</tr>
<tr>
<td>00:40 AM</td>
<td>00:44 AM</td>
<td>00:47 AM</td>
<td>00:50 AM</td>
</tr>
<tr>
<td>09:15 AM</td>
<td>09:19 AM</td>
<td>09:22 AM</td>
<td>09:25 AM</td>
</tr>
</tbody>
</table>
Insert audio file here
- Participants
- Task
- Results
- Redesign
• Voice talent
• Allow user to say bus stop name
• Allow user to enter all information at once
• Enter address and offer recommendations
• Approximate time between stops
• Extend to rest of MBTA
• Spanish version
Thank you