Sue Ellen Reager, CEO
Patent Holder
What do these have in common?

- Embedded applications
- Telephone and telecom
- IVR applications
- Software & navigational
- TTS devices
- Voice products
- Kiosks and on-screen
- Talking machines
- Web sites
- Flash
What do these have in common?
What do these people have in common?
What do these have in common?
Welcome to the future of our industry,
speech technology globalization
Ultimate personalization

BOSTON BANK

Welcome, Mr. Tao. Enter your PIN:
Until now...

Why has localization and personalization been so expensive?

Code, cost and risk.
Case Study

Telecom app for India
Case Study

Unified messaging
Case Study

Hotel Telephone system: messaging, wake-up, room service
<table>
<thead>
<tr>
<th>Language</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English</strong></td>
<td>You have &lt;number&gt; messages in your mailbox.</td>
</tr>
<tr>
<td><strong>Japanese</strong></td>
<td>Your basket in (2-ken) message there is.</td>
</tr>
<tr>
<td><strong>Malay</strong></td>
<td>In your basket (2) message message.</td>
</tr>
<tr>
<td><strong>Portuguese</strong></td>
<td>You have (2-feminine) messages in your mailbox.</td>
</tr>
<tr>
<td><strong>Arabic</strong></td>
<td>You have twmessagi (blank) in your mailbox.</td>
</tr>
<tr>
<td><strong>Hungarian</strong></td>
<td>You (2-neutral) messages have.</td>
</tr>
</tbody>
</table>

- 21 in Russian
- 14 in Japanese
- 11 in Mandarin
- 2 in English
- 7 in Spanish

**English:** Message received **on June 4th, 2005 at 3:45 PM.**

**Asia:** Year 2005 6 month 4 day on PM 3 hour 45 **at** message received.

**German date with weekday:** Nachricht **am** Montag, **den zweiten** Januar geschickt.

**German date no weekday:** Nachricht **am zweiten** Januar geschickt.
The User Experience (presentation layer):

- Text on screen
- Words
- Language
- Translation
- Voice files
- Music files
- Text to speech
- Voice recognition
- Subtitling for the hearing impaired
- Subtitling for language translation
- Other elements
Replaced with this:

loadGCTableDriver(Entry#22)
getGCTDList(Entry#22)
unloadGCTableDriver(Entry#22)
Software translation, personalization

Same code block: software menus and messages
Personalization

Visual translation, personalization
Kiosks, scanners, appliances
Client Application
Sends basic info to Table Driver and asks “What do I do?”

Client Application
Does whatever needs to be done.

Text to Display
Wav name list
Generated IVR Grammars
Text to send to TTS

TABLE DRIVER

Extract English
Extract Spanish
Extract Japanese

Or one extract with all languages

more...
One code block returns:

3 buffer example:

1. **Audio file list:** Deposited.wav, on_June.wav, 4th.wav, 2005.wav
2. **Screen text:** Deposit received: 6/4/05
3. **TTS text:** “deposit posted june four two thousand five”
Voice response code internationalization

;orig:   ?SEF_LIB_UM_UH~0.01
;orig:   ?([i'd (i would)] like to give ?some)
;orig:   feed back

?SEF_LIB_UM_UH~0.01
[
  (?KEY_NEED   KEY_giveFeedback)
]
?SEF_LIB_UM_UH~0.01
Another version of template:

?articles
KEY_landmarkName

Another version of template:

?articles
KEY_landmarkName
?KEY_prepositions
Original language: Peachtree Street Northwest

Auto reordering: street Peachtree northwest

Auto translation: calle Peachtree noroeste

Speaking telephone numbers according to the language:

<table>
<thead>
<tr>
<th>Style</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digit by digit</td>
<td>7-7-2-4-4-1-6-0-0-0</td>
</tr>
<tr>
<td>USA style</td>
<td>7-7-2, 4-4-1, 6-thousand</td>
</tr>
<tr>
<td>UK style</td>
<td>double7 – 2 – double4 – 6 – tripleOh</td>
</tr>
<tr>
<td>European</td>
<td>7 hundred 72 - 44 - 16 - 23</td>
</tr>
<tr>
<td>Single Digit Hund</td>
<td>7 - 72 - 44 - 16 - 23</td>
</tr>
</tbody>
</table>

And shows them on screen in proper punctuation:

(770) 414-4600
77.04.14.67.00
7704 / 144.600
+1 770.414.4600 ...
How Customization Works

Language hierarchy

- **Client Application**
  - **English**
  - **Spanish**
    - Tex-Mex
    - Mexican
    - Neutral Spanish
  - **Mandarin**
    - Californian Mandarin
    - Mainland China Mandarin
  - **Retail**
    - Store 143
    - Headquarters
    - Base
  - **Sales**
    - Hot Deals
    - Promotions
    - Southeast
    - Standard

- Home Depot
- Southern USA Customized
- Broadcast Accent
- X

- Store 143
- X

- Headquarters
- X

- Base
- X

- Southeast
- X

- Standard
- X

- Hot Deals
- Promotions

Home Depot
Hot Deals
Promotions
Southeast
Standard

X

X

X

X

X

X
Empowering Your customers and employees with speech technologies

SpeechTEKI 2006
The Voice Solutions Showcase

Thank You

GlobalConcat™
System Localizer