The Case for Bi-modal Authentication

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Why Bimodal for Mobile

- Customer Experience
- Mobility
- Security
About SpeechPro

**SpeechPro** is the US subsidiary of the Speech Technology Center (STC)

**STC** was established in 1990 & fully Certified ISO-9001:2008

**STC** is a World Leader in Voice Technology with customers in 70 countries

**STC** has offices in US, Mexico, Germany, Finland with HQ in St. Petersburg Russia

“SpeechPro has established a leadership position in a fast-growing and potentially large sector of the voice biometrics marketplace”

Dan Miller,
Senior Analyst at *opusresearch* USA
VOICEKEY OVERVIEW

IVR

AGENT

MOBILE APP

WEB

CUSTOMER
Text Dependent & Text Independent: Allows passphrase or normal speech

Liveness Detection: Prevents replay attacks

High Accuracy: Proprietary algorithms fusion (Formant, Pitch, TV)

Speaker Change Detection: Prevents unauthenticated caller joining call

Cross-channel ID&V: Allows multi-device authentication from voice print

Signal to Noise Ratio to 7dB - High toleration of background noise

White-list: VIP clients can be authenticated without passwords

Black-list: Continuous search for known fraudsters in the stream of calls.
OnePass: How does it work?

Enroll
OnePass: How does it work?

- **Collect**: Now hold still and say: *Move the vat over the hot fire.*
- **Process**: 
- **Access**:
VOICEKEY.ONEPASS OVERVIEW
OnePass Architecture - One-Step Authentication
(for release Q2 2014)

- Authentication automatically launched from mobile app
- Camera searches for user’s face
- Audio recording launched with face detection
- Static and dynamic passphrase simultaneously
- Zero-tap process
## OnePass Evolution -

### OnePass Evolution -

<table>
<thead>
<tr>
<th>Current</th>
<th>Q1-2014</th>
<th>Q2-2014</th>
<th>Q4-2014</th>
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<td>Touchless initiation, app looks for face and self launches</td>
<td>Simultaneous static and dynamic passphrase</td>
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### iOS

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The Case for Bimodal – Market Drivers

Customer Experience
- Passwords “aren’t” anymore, must be changed, faster failure.
- 51% of consumers switched vendors due to a poor customer experience.
- 75% used online channels, 33% of these used a mobile device.
- 82% feel companies they buy from cannot be trusted with PII and financial information.

Mobility
- Apple’s Touch ID, Siri, Facebook, cameras, Google Now, toys, brings familiarity, expectation.
- Explosion in malware, Android most targeted.
- Also in iOS: iPhone users conduct mobile transactions more frequently than Android.

Security
- Voice Biometrics widely accepted, FA around 0.1%, FR under 2%.
- Face Biometrics becoming accepted, FA around 0.1, FR at 2.1.
- Fused biometrics: 0.01% FA with FR under 2%.
The Case for Bimodal – Why Voice & Face?

we need to make voice and face enlarged for focus

<table>
<thead>
<tr>
<th></th>
<th>Voice</th>
<th>Face</th>
<th>Finger</th>
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<tbody>
<tr>
<td>Pro</td>
<td>Ubiquitous hardware (all)</td>
<td>Ubiquitous hardware</td>
<td>No background noise issue</td>
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<td></td>
<td>Friction of distance</td>
<td>Noisy environments</td>
<td>Authentication time</td>
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<tr>
<td></td>
<td>Easy, familiar</td>
<td>Widely deployed</td>
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<tr>
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<td>Proven</td>
<td></td>
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<tr>
<td>Con</td>
<td>Noisy environments (below 7dB SNR)</td>
<td>Low light situations</td>
<td>Few devices with reader</td>
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<tr>
<td></td>
<td>Enrollment time</td>
<td>Privacy concerns</td>
<td>Liveness detection?</td>
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<tr>
<td></td>
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<td>Leave it everywhere</td>
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<td>Political Correctness issues</td>
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The Case for Bimodal – Why Voice & Face?
SECURITY

MULTI-MODAL APPROACH DRASTICALLY REDUCES EER

- EER 0.5% or lower for multi-modal verification
- EER 1.4-4.0% for face or voice alone
CROSS-CHANNEL CAPABILITY

Mobile

Web

Physical Access

Phone

All Use One Single Voiceprint
## How Bimodal drives the bottom line?

<table>
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<th>User transition to mobile devices</th>
<th>No additional hardware required for either mode</th>
<th>EER’s lower with two modes</th>
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<td>for transactions is inevitable</td>
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<td>Same voiceprint usable in different channels</td>
<td>AHT is reduced in contact center</td>
<td>IVR containment rate increased</td>
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<td>Captured voiceprints can become part of whitelist/blacklist DB</td>
<td>SDK allows “under the covers” implementation.</td>
<td>Simple licensing model, voiceprint licenses reusable</td>
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Thank You!!