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

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

**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

# VOICEKEY EVOLUTION & SERVICE OFFERINGS

**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

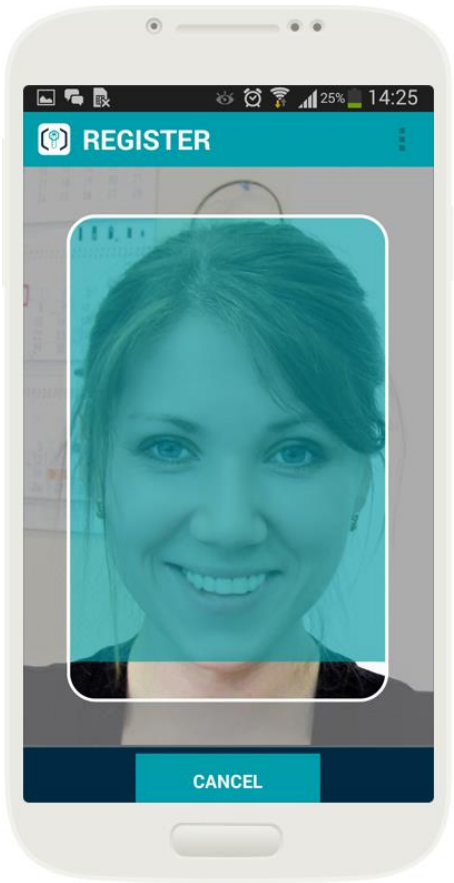
**Cross-channel ID&V:** Allows multi - device authentication from voice print

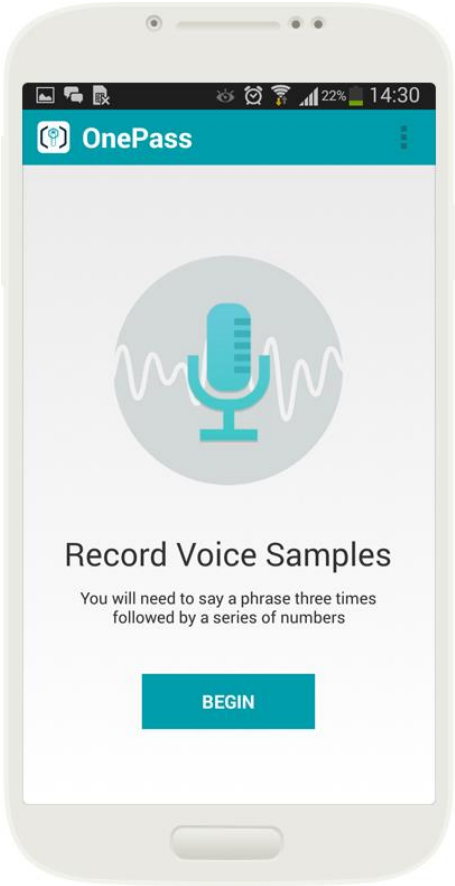
**Signal to Noise Ratio to 7dB -** High toleration of background noise

**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?

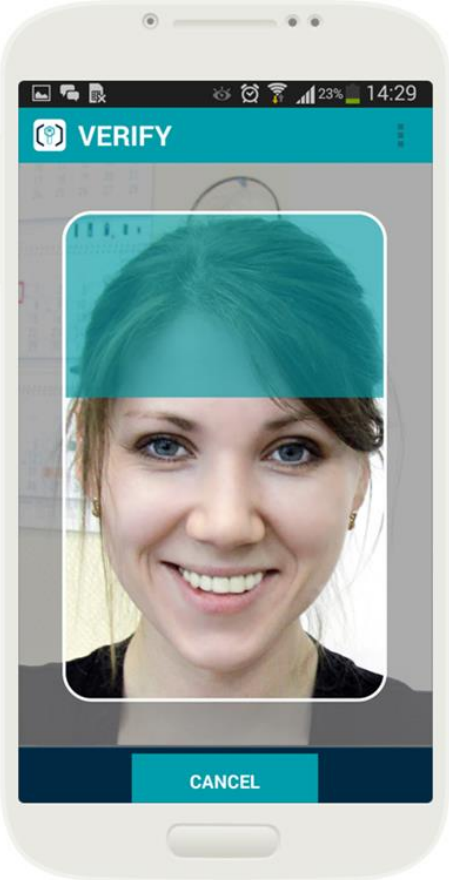


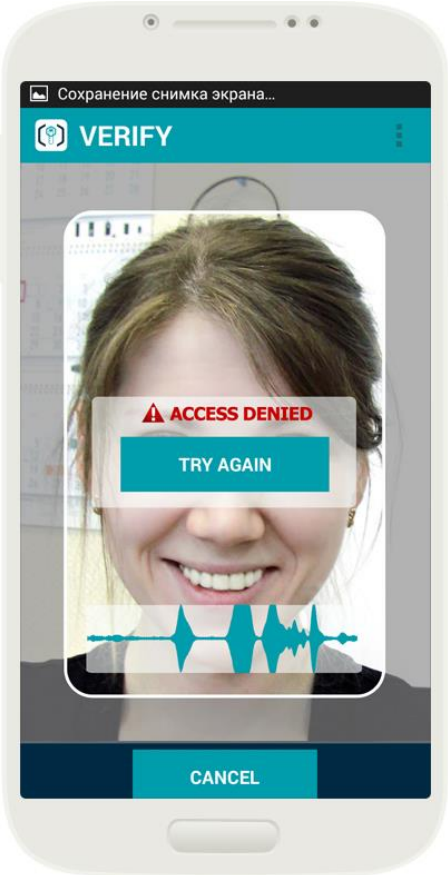

**Enroll**

# OnePass: How does it work?


**Collect**




**Process**

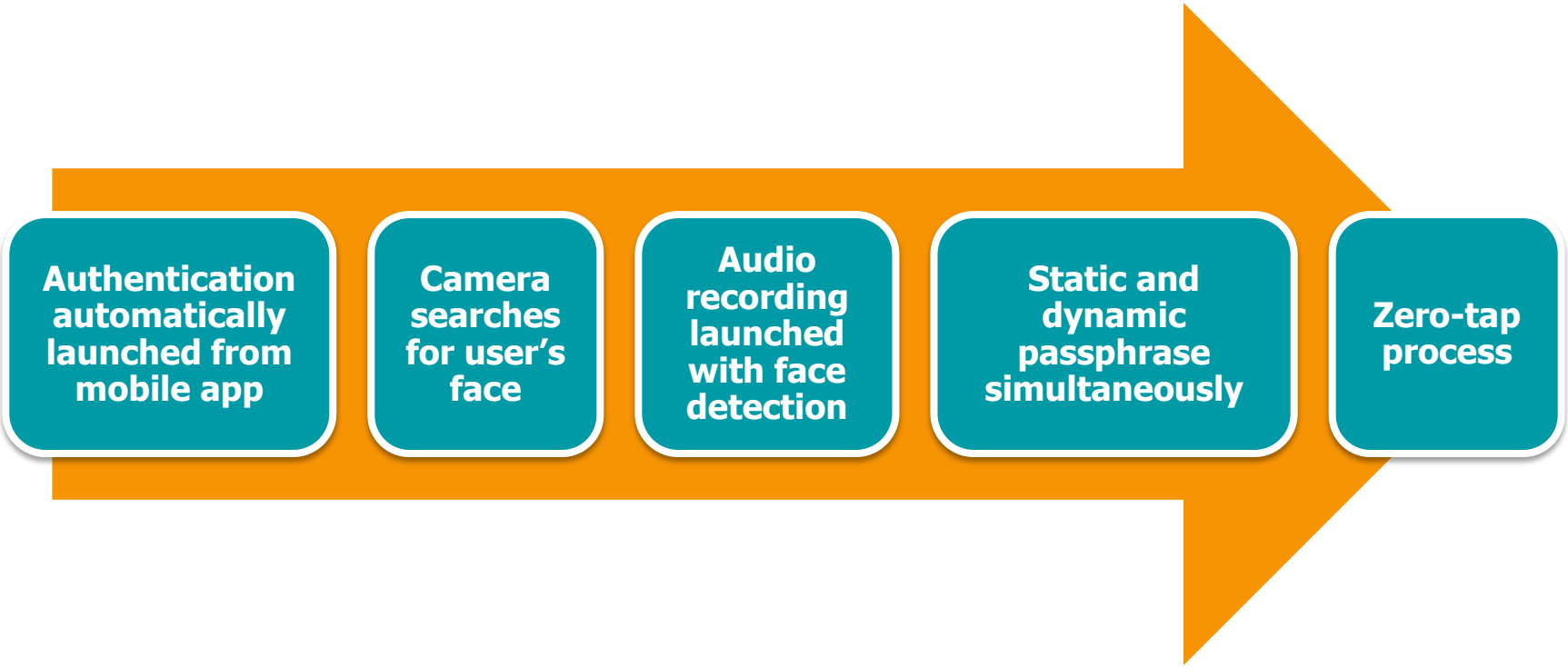



**Access**

# VOICEKEY.ONEPASS OVERVIEW

# OnePass Architecture- One-Step Authentication

## (for release Q2 2014)



# OnePass Evolution -

| Current | Q1-2014 | Q2-2014 | Q4-2014 |
|---|---|---|---|
| One-tap authentication<br>Liveness detection, face&voice<br>Fused EER | Touchless initiation, app looks for face and self launches | Simultaneous static and dynamic passphrase | TBD |
| Mobile app captures face and voice<br>Sample creation and comparison on server, face and voice | Mobile app captures face and voice, creates voice sample<br>Sample creation and comparison on server, face and voice | Mobile app captures face and voice, creates face and voice sample<br>All comparisons done on server | TBD |

iOS

| Current | Q1-2014 | Q2-2014 | Q4-2014 |
|---|---|---|---|
| One-tap authentication<br>Liveness detection, face&voice<br>Fused EER | | Touchless initiation, app looks for face and self launches<br>Simultaneous static and dynamic passphrase | TBD |
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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%

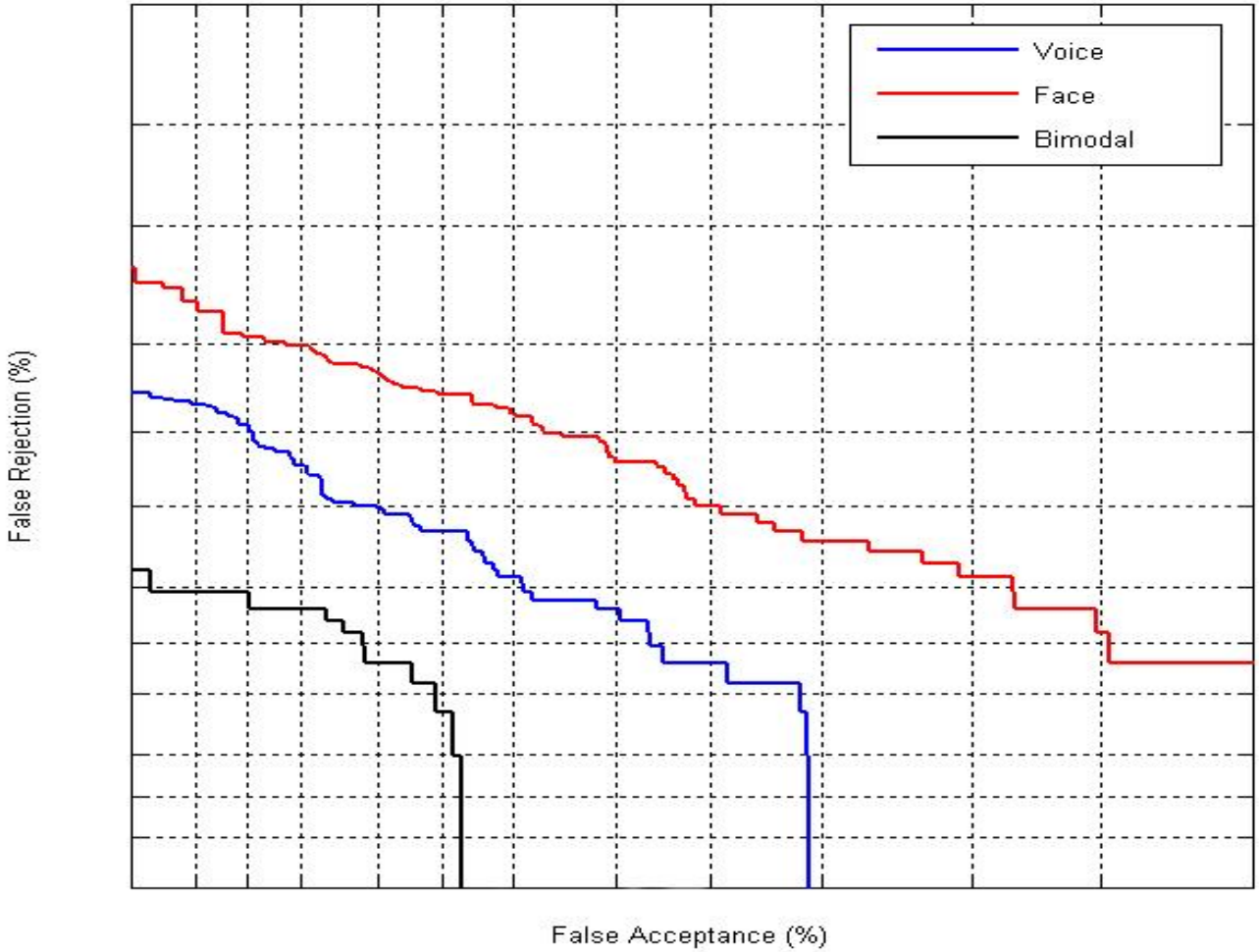
# The Case for Bimodal – Why Voice & Face?

## we need to make voice and face enlarged for focus

| | Voice | Face | Finger |
|---|---|---|---|
| Pro | Ubiquitous hardware (all)<br>Friction of distance<br>Easy, familiar<br>Proven | Ubiquitous hardware<br>Noisy environments<br>Widely deployed | No background noise issue<br>Authentication time |
| Con | Noisy environments (below 7dB SNR)<br>Enrollment time | Low light situations<br>Privacy concerns | Few devices with reader<br>Liveness detection?<br>Leave it everywhere<br>Political Correctness issues Friction of distance |

# SECURITY

## MULTI-MODAL APPROACH DRASTICALLY REDUCES EER

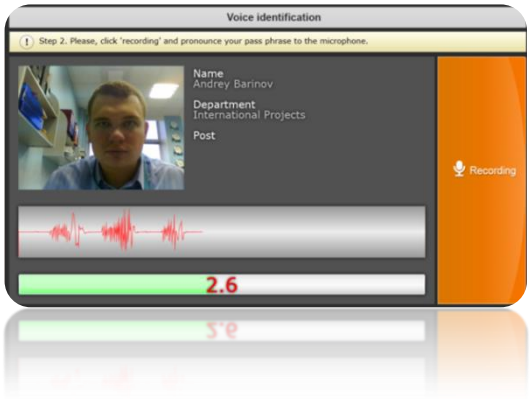



- **EER 0.5% or lower for multi-modal verification**
- **EER 1.4-4.0% for face or voice alone**

# CROSS-CHANNEL CAPABILITY

**Mobile**


**Web**




**Physical Access**


**Phone**

**All Use One Single Voiceprint**

# How Bimodal drives the bottom line?

**User transition to mobile devices** for transactions is inevitable

**No additional hardware required** for either mode

**EER's lower** with two modes

**Same voiceprint** usable in different channels

**AHT is reduced** in contact center

**IVR containment** rate increased

**Captured voiceprints** can become part of whitelist/blacklist DB

**SDK allows "under the covers"** implementation.

**Simple licensing model,** voiceprint licenses reusable

# Thank You!!

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