Leave Impersonators, fraudsters and identity thieves speechless
Mobile Speaker Authentication

Mobile Voice Conference
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Agenda

- PerSay Intro, products and technology
  - VocalPassword
- Voice Biometrics – The need
  - Linking phones with users
- Implementation architecture and trends
  - Client (Embedded)
  - Client – Server
  - Hybrid solution
- Usage
  - Sample applications
  - Multi-channel voice biometrics – VeBank Demo
<table>
<thead>
<tr>
<th>Founded:</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations:</td>
<td>Israel, US</td>
</tr>
<tr>
<td>Global Presence:</td>
<td>EMEA, NA, SA, APAC</td>
</tr>
<tr>
<td>Sample Customers:</td>
<td>Bell Canada, BT, Leumi Bank, West, Vodafone Turkey, Planet Payment, GSIS, Discount, Bank Bank Hapoalim</td>
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</tbody>
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- Over 120 Deployments Worldwide
- Largest Customer & Install base in the world
- Represented in 25 Countries
- Key references in 4 vertical markets
- 100% Customer Retention
PerSay’s Technology in a glance

Engines
• Text Dependent
  (Server/Embedded)
• Text Independent
• Text Prompted
• Language Identification
• Speaker Segmentation

Platform
• Security
• High Availability
• Scalability
• Admin/HelpDesk
• Calibration / Tuning
• Interfaces
• Databases / IDM
• Hosting/On Premise
• Multi-Engine Flexibility
• Flexible Licensing
• Multi Tenancy
• Liveness Detection
• Fraudsters Detection

Products
• FreeSpeech™
• VocalPassword™
• S.P.I.D™
• Mobile SV™
• PerSay Evaluation Studio™

IP and Capabilities
• Liveness Detection !!!
  (Patent pending)
• Real time fraudsters
detection
• Contact center (CTI\CRM)
  integration
• VoIP / TDM audio acquisition
• IDM/Security integration
• Sales/Pilot Methodology
• Database certifications
• Voice platform / VXML
  integrations
  (Avaya, Genesys, Intervoice, IBM, Nortel,
Cisco, Syntellect, Microsoft, Voxeo)
VocalPassword™ - Basic Functionality
Mobile Voice Authentication

The need
Voice Biometrics – a growing global need

- Identity theft – the fastest growing crime
- New regulation requires multi-factor authentication
- Voice Biometrics also addresses the conflicting needs for:
  - Stronger Security
  - Better Customer Service & User Experience
  - Reducing Costs, Increasing Efficiency
Voice biometrics – Works across all channels
Sensitive information, services, and apps

Lost Phone = Lost Identity
Current Security?

• Our devices are authenticated within the network
  – SIM – Provides strong encrypted authentication of our device
    (Used for Billing purposes)
  – ANI: Weak and can be easily spoofed
    • Can be used as an identifier (Claimed ID)

• Apps and services utilize:
  – No Security
    • Example – BB\IPhone users with enterprise emails unsecured
  – Passwords
    • Weak – can be easily hacked and stolen
    • Strong – cumbersome to type and remember
Competitive Advantages -> Leading Brand

1. Technical Superiority
   - Unsurpassed accuracy as proven by third parties (UC, NIST, CCIR)
   - Language, accent, and ASR independent
   - Flexibility: Text-dependent, independent, and prompted capabilities

2. Ease of Deployment
   - A rich set of advanced tools addressing deployment obstacles
   - Scalability & High Availability
   - Integrated security

3. Market Traction
   - More than 100 installations and key reference accounts in 5 vertical markets
   - Partners and VARs in 22 countries
Mobile Speaker Verification

Architecture
Mobile Speaker Verification – Client Server

- Client (recording) → Server (processing)
- Applications: Mobile payments, banking, access to content . . .
- Server can reside on cellular or Enterprise networks
- Clients developed for Symbian, iPhone, BB
Mobile Speaker Verification - Embedded

- Embedded Text Dependent Algorithms

User Verified

pass phrase
Mobile Speaker Verification - Hybrid

• Hybrid solution
  – Enrolment performed using a centralized system
  – A copy of the voiceprint resides on the end-user device

• Advantages:
  – Better accuracy (enabling centralized calibration)
  – Operator can use the centralized system for secure service or applications/content
  – Operator can use voice biometrics to fight SIM fraud
  – Operator can provide “secure access” to third parties services, possibly correlated with location info
  – Voiceprint technology can be used to secure the device, applications, content, enterprise data etc.
Voice Biometrics – Our Vision

- Identifying users by their voice will become a basic network and device functionality
Our Vision – a Phone that knows you

• The phone that authenticates the speaker using
  – A passphrase (Text Dependent )
  – Natural conversation (Text Independent)

• Enables secure interaction or access to any service provider using operator’s authentication web service

• Applications:
  – Secure enterprise communications
  – Secure access to web sites and content
  – Easy access to contact centers
  – SIM card fraud prevention
  – Mobile/credit card payments (multi-factor)
Sample Usages
Bell Canada - Accessing service

- The largest customer facing voice biometrics deployment
- The fastest growing voice biometrics deployment
- PerSay selected out of 5 vendors
- English / French, common pass phrase
- Deployed by IBM Canada
- Currently more than 3,000,000 voluntary enrolments
- Verification rate exceeds 5,000,000 a year

Timeline:
- Selection: Sep 06
- Installation & Integration: Oct 06
- App Dev: Nov 06
- Focus groups: Nov 06
- Calibration: Feb 07
- Tuning: Feb 07
- Limited rollout: Mar 07
- Launch: April 07
Sandata Enhances Fraud Prevention Capabilities with Improved Voice Biometrics from PerSay Ltd.

PerSay’s VocalPassword™ to integrate with Santrax in providing the next level of security in Time and Attendance for home healthcare services.

Port Washington, NY, December 2, 2009 - Sandata Technologies, Inc., the leading nationwide provider of information technology solutions to home healthcare and social services communities, announced today the launch of its second generation speaker verification tool and selection of PerSay as its new technology partner to provide the voice biometric engine for Santrax.

Santrax is Sandata’s patented time and attendance product and the nation’s number one telephone and web-based field management solution, delivering accurate real-time visit information on demand. Santrax is available as a stand-alone product, or as a component embedded in Sandata’s comprehensive operational home care management software, nhHome, and its jurisdictional view dashboard for Governments, Managed Care Organizations and other payors. Integrating Santrax enables home care agencies to automatically verify that their staff is in the right place at the right time and capture tasks being performed, ensuring agencies are compliant with the prescribed plan of care and that patients are receiving the highest quality of care. PerSay’s VocalPassword™ enables Santrax customers to validate the identity of field employees using a precise biometric-based multi-factor authentication process, whether they utilize a landline or mobile telephone. Voice Biometrics component enhances reporting reliability and helps prevent Time and Attendance fraud. Sandata’s patented ANI technology combined with voice biometrics make Santrax the most robust package of verification and compliance tools available for organizations that deliver home
Issuing payments

Introducing Shop BuyVoice

Our mobile shopping product, Shop BuyVoice™ is a fully managed, hosted solution that powers quick, simple and secure shopping just by speaking, using any telephone. It includes biometric-voiceprint authentication, as well as integration with existing inventory management and customer service systems. Shop BuyVoice also includes a customer-registration option for expedited shopping and delivery.
Multi-Cannel Banking (Demo)

- Authorizing money wires with Voice Biometrics through:
  - Inbound calls
  - Internet callback (out-of-band)
  - Internet un-band microphone recording
  - IPhone App
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PerSay Voice Biometrics technology – Linking phones with their owners!