Voice Authentication On-Demand: Your Voice as Your Key

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relationship management

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Convergys Corporation

A Global Leader in Relationship Management

Worldwide Capabilities

- 75,000 employees
- 85 customer and employee contact, service and data centers worldwide; focused on optimizing employee and customer experience
- Clients in 70+ countries speaking nearly 35 languages

A Leading Public Company

- $2.8 billion in revenues
- Listed on NYSE, S&P 500, Fortune 1000
- A *Fortune* Most Admired Company for eight consecutive years
- Serve more than half of the Fortune 50 as clients

Key Facts About Convergys

- Host more than 1 billion customer interactions annually
- Support more than 3 million employees and retirees worldwide
- Billing for 350+ million communications subscribers worldwide
- Named to the Top 10 for Innovative Use of Technology by *InformationWeek* (2007)

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On-Demand Voice Authentication - Agenda

- Market Overview: Needs & Dynamics
- Voice Authentication Flash Demo
- Business Drivers: security, cost, revenue
- On-Demand Voice Authentication Infrastructure
- Live Demo
- Conclusion

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Voice Authentication Market Dynamics

- Consumers are experiencing increasing concern about security and identity theft
- Governing agencies are providing guidelines and requirements for multi-factor authentication
  - Banking (FFIEC)
  - Medical (HIPAA)
- Voice authentication can now be leveraged in IVR, web, and agent transactions.

Voice Authentication Adoption Hurdles

Voice authentication technology is ready, but traditional deployment:

…takes too long,

…requires capital expenditure,

…and has required a speech IVR.

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Increase in Phone-based Fraud

- "Mail and phone-based incidents rose dramatically, from 3% of ID fraud in 2006 to 40% in 2007"

- "As consumers shift more financial transactions to secure online arenas, fraudsters have become more creative in utilizing land and wireless telephones to access information"

- "Address changes are among the most popular methods of attack. A criminal may call and claim he wants to change the address on an account. Using stolen data to verify his identity, he may gain access without ever possessing a card."

JAVELIN STRATEGY & RESEARCH

2008 Identity Fraud Survey Report:
Identity Fraud Continues to Decline,
But Criminals More Effective at Using All Channels
February 2008

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Voice Authentication Market – Gartner & OPUS

OPUS Key Findings

- Voice biometric solutions are maturing
- $80M in 2006 → ~$800M in 2011

Factors propelling growth

- Evolution of technology → products
- Integration with existing infrastructure
- Multiple pricing and delivery options
- Password reset proves its value
- Enrollment has not been a problem
- Mandates for strong authentication
- Gov't will drive large deployments
- Mobile users to drive next apps

Gartner Key Findings

- 60% of banks plan to strengthen authentication
- >50% of online banking consumers consider extra security features "extremely" important.
- 23% of online banking consumers think answering challenge questions is a waste of time.

Recommendations

- Implement non-PC-based user authentication for high-risk, online transactions.
- Implementing secret questions to verify callers significantly adds to call center costs.
- Consider voice biometrics for stronger caller authentication.

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Value for you and your Customers

Why should you Use VA?

- Meet Industry Guidelines
  - Regulatory support for technology
  - FFIEC Multifactor Authentication "Guideline"
  - VA is a fit for 2nd factor
  - Contact center cost savings
    - Reduce AHT
    - Automate PIN/PW reset
- Employee Applications
  - Ensures security for company sensitive information
  - Lower cost for secure transactions

Why will customers adopt VA?

- Security
  - Belief that identity theft is a threat
  - Perception that biometrics work
  - Acceptance of voice over other biometrics
- User Experience
  - Voice authentication reduces or the need to remember a PIN/password
  - VA saves time compared to answering challenge questions.
  - Contributes to greater mobility

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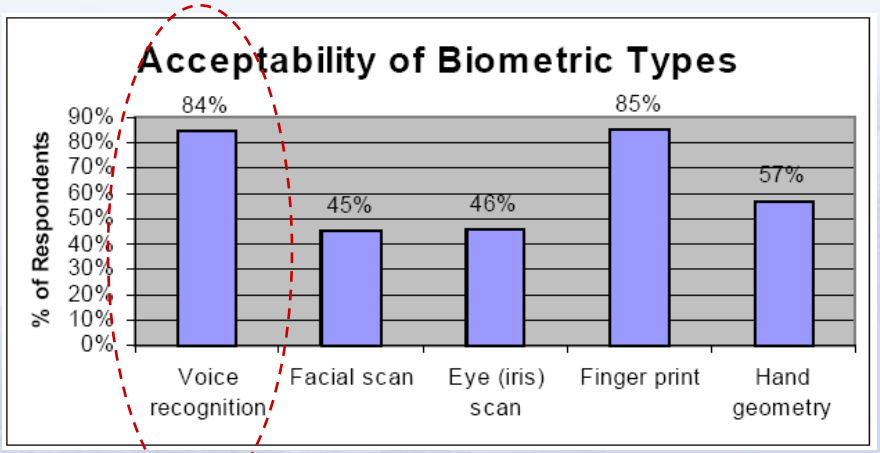
Voice Biometrics – Ready for Prime Time

Pros :

- Equivalent in accuracy to Eye Scans and Fingerprints
- Low cost implementation; incremental to pre-existing IVR investment
- Non-invasive: uses a familiar mode of interaction → speech
- Easy to integrate with IVR apps; supports both phone or POS use
- Can be utilized across channels (Live-agent, IVR, Web and Mobile)
- Can combine with behavioral data to improve *overall* performance

Cons :

- Must deal with channel & device distortions
- Must manage user performance and perception, anywhere, on any phone



Sources :)

1. Bell Canada presentation, VioceBioCon, 2008

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Drivers for On-Demand Voice Authentication

Card Issuer: Reduce Fraud

- Pain Points
  - ❖Customer Fraud; e.g., change of address, funds transfer
  - ❖Agent time for authenticating callers
- Use Case Profile
  - ❖Enroll customer at card activation
  - ❖Include VA for some/all call transactions

- Business Case Drivers
  - ❖ Reduce existing fraud: 90%+
  - ❖ Reduce agent AHT: 10+ sec.
  - ❖ ROI: <6 months

Health Insurer: Gain Revenue

- Pain Points
  - ❖Only 10% of new "enrollees" sign/mail policy

- Use Case Profile
  - ❖Allow policyholders to enroll & use "voice signature"
  - ❖Use for HIPAA-compliant transactions
- Business Case Drivers
  - ❖Increase sales rate closure
  - ❖Saves 9:1 in processing
  - ❖Accelerates policy renewal anniversary

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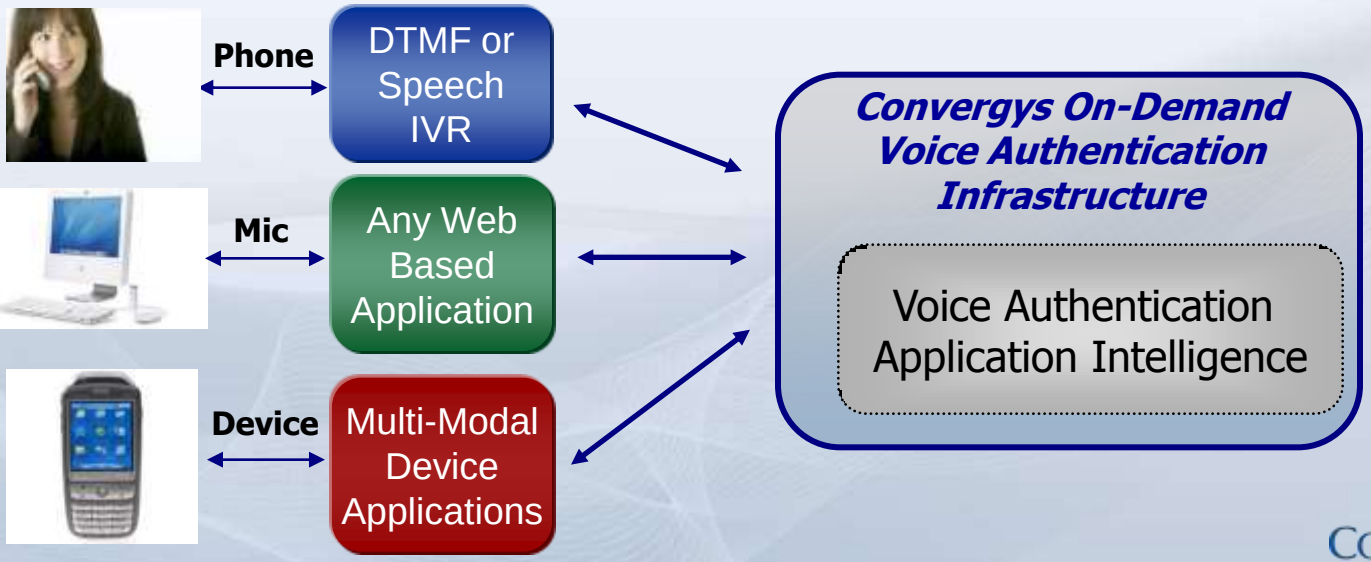
Client Benefits of an On-Demand VA Solution

- Software as a Service
  - *No capital expenditures*; pay-as-you-go pricing
  - No speech or biometric software for client to install
- High-availability web services-oriented architecture
  - Fast Implementation for Customers
  - Allows seamless interface from IVR and Agent applications & platform

Customer Authentication Infrastructure



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Convergys Value Prop

- Deployment Benefits
  - Make it easy and fast to implement
    - From any IVR or Web app
  - Apply CVG's expertise in large-scale hosting
    - Quick to market and low cost
  - Offer Voice Authentication Service On-Demand
    - High-available, scalable

- Technology Benefits
  - Core technology is robust, but need applications
    - Differences are in:
      - Business rules on top of Voice Authentication
      - Ease of integration and deployment
      - User interface design and sophistication
  - CVG – Labs has vetted vendor products and services over the past four years

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Voice Authentication Business Value Drivers

- Operational Cost Savings
  - Reduce AHT via automated authentication
- Fraud
  - Reduce fraudulent transactions
- Retention
  - Increase customer satisfaction
  - Retain higher percentage of customers
- Marketing
  - Grow customer base via promotional marketing
    - "you're secure with us"
- Sales
  - Increase close rate by offering immediate contract
  - Drive wallet share to increase card usage and revenue

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Voice Authentication Use Case Demos

- Demo 1 (Flash) :
  - Two factor Authentication – userID/Password + Voice
  - Three modes of user interaction
    - Outbound phone call to user
    - Inbound phone call from user
    - Access from PC
- Demo 2 (Flash) :
  - Multi-modal and Multi-channel interface
    - Voice authentication from a multimodal PDA
    - Out-of-band voice authentication – voice unlocks access to web
- Demo 3 (Live) :
  - Control access to secure financial transactions with VA
  - Seamless Integration with IVR application

On-Demand Voice Authentication: Ready for Launch

- The Market appears poised to consume voice authentication
- Convergys brings agent, multi-channel, and large-scale hosting
- Convergys Advantages:
  - One Stop Voice Authentication solution
  - Complementary Customer Service solutions
  - Automated Self-Service
  - Complementary business decisioning software
  - Live agents

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Questions, Comments, Insights?

Appendix

Voice Authentication: Performance Metrics

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Voice Authentication Market – Gartner - June 2008

- Key Findings
  - To authenticate online banking customers, most U.S. banks rely on desktop cookies, and secret questions and answers. However, these recently deployed methods are already obsolete in the face of malware-based attacks.
  - Most U.S. banks use weak methods to authenticate call center callers, but nearly 60% of surveyed banks plan to strengthen their authentication methods during the next two years.
  - More than half of U.S. consumers consider extra security features "extremely" important in influencing their decision to bank online.
  - Of the consumers who have to answer secret questions to bank online, 77% say they don't mind answering the questions, but the other 23% do, or they think the questions are a waste of time because they believe the questions provide little added security.

- Recommendations
  - Recognize that using secret questions and desktop cookies to authenticate online consumers raises the "security" bar, but those methods can be easily defeated by determined criminals.
  - Start implementing non-PC-based user authentication and transaction verification for high-risk, online transactions. These methods can stop the damage from attacks launched from user browsers and desktops.
  - Be cautious about implementing secret questions to identify call center callers — they may significantly add to call center operational costs.
  - Consider automated PIN entry and/or voice biometrics for stronger caller authentication, although voice biometrics is still largely unproven in call centers with millions of customers.

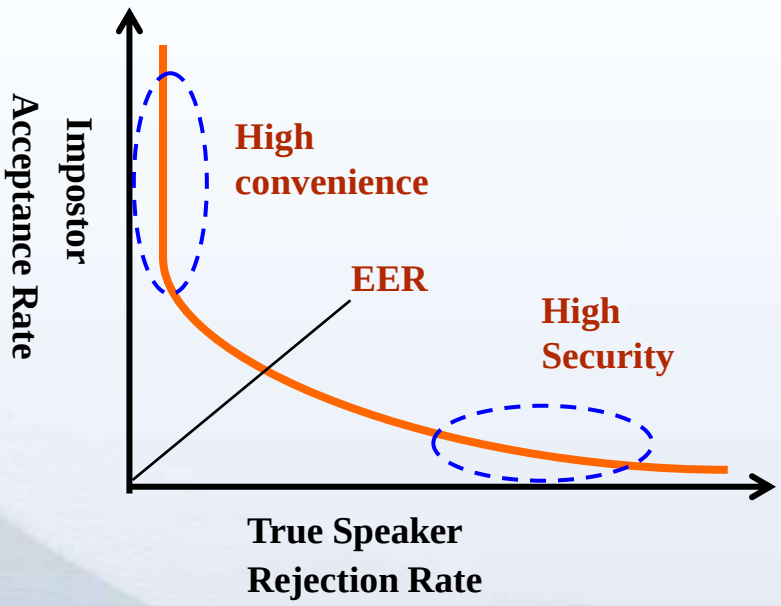
Voice Authentication Market - OPUS Research 2008

Key Findings:

The market for voice biometric-based solutions is maturing, having generated nearly $80 million in licensing and application revenue in 2006. The market will grow modestly in the coming year, then grow to approach $800 million in revenue by 2011. Factors propelling growth include:

- **The evolution from "technology" to "products"** – For selected applications (like password reset) in specific enterprise settings (like contact centers and "Help Desks") voice biometric-based authentication has proven value as a solution to well-defined problems.
- **Better interconnection and interaction with existing security infrastructure** – The product of greater acceptance by corporate security officers, as well as general IT implementers.
- **Support from larger integrators and resellers** – Larger firms, such as EMC's RSA Security division and IBM Global Services, have added speaker verification to their range of products and services
- **Multiple pricing and delivery options** – Solutions have moved beyond premises-based solutions (with pricing based on ports, servers or seats) to include hosted delivery of services driven by enrolled users and, ultimately, transactions.
- **Password reset (PWR) proves its value** – Deployments of this mainstay of speaker verification continue to grow as a result of more mainstay of speaker verification continue to grow as a result of more stringent security policy and the availability of "mature" solutions.
- **Enrollment has not been a problem** – Several firms that installed voice-based verification customer care contact centers have been pleased to find the large majority of callers choose to enroll.
- **Mandates for hardened authentication for financial services** – Largely driven by regulatory bodies in North America and Western Europe.
- **Largest deployments will be government-driven** – Consensus is building that voice biometrics will play an important role in making e-government services accessible and for hardening authentication where transfer payments are involved.
- **Mobile users to drive next wave of applications** – Access control for both employees and customers using mobile phones create readymade opportunities for speaker verification solutions.

Voice Authentication – Performance Metrics



- Equal Error Rate
  - Simple measure of performance
  - ~1% indicates high performance
- Type I (FR), Type II (FA) errors
  - Tradeoffs determine operating point
  - Good target:
    - type I : 0.5 – 1.0 %
    - type II : 1.0 – 3.0 %
- Enrollability rate :
  - % of users who can be enrolled successfully
  - ~ 95% is an achievable goal
- Verifiability rate :
  - % of users who can use the service with consistent success
  - ~95% is an achievable goal
- ~5% of users may need alternate means (agent?)

Operational Analysis: Call Center Impact

- Voice Authentication can reduce current fraudulent calls by 98.9%
- Leverage authentication by alternative means in other 1.1% of calls
  - Additional questions built into the Voice User Interface
  - Live operators
  - Web-based questions for online applications

Assumptions	
Total calls	1,000,000
Fraudulent calls	0.05%
FAR	1.00%
FRR	1.00%

Type of Call	Number of Calls	% of Total Calls
Before VSS		
Genuine calls	999,500	99.950%
Fraudulent calls (falsely accepted)	500	0.050%
After VSS		
Calls correctly accepted	989,505	98.951%
Calls correctly rejected	495	0.050%
Calls falsely accepted	5	0.001%
Call falsely rejected	9,995	1.000%
Totals	**1,000,000**	**100.000%**