



Case Studies

Voice Biometrics in Customer Care

April 2016



ALPHA READ MY LIFE

ROBO-CRITIQUE RATING SPACEY'S IMPERSONATIONS

KEVIN SPACEY HAS AN uncanny talent for celebrity impersonation. And now he's playing the oft-mimicked not-a-crook in *Elvis & Nixon*, in theaters April 22. But though Spacey's dead president and Katharine Hepburn impressions sound pitch-perfect to us, we are mere humans, with fallible ears. We wanted to know if Spacey's vocal copies sounded good to a machine. So we asked Nuance, a company that provides biometric customer authentication for banks, insurance firms, and the like, to run some clips through FreeSpeech, its program for verifying "voiceprints." It turns out that Spacey's impressions are better than most, but none can fool a robot. Why? About half the characteristics that FreeSpeech tests are based on physical attributes, like vocal cord length, mouth shape, and nasal passage size. In a sense, the software knows that Spacey can't move his lips exactly like Christopher Walken. But behavioral factors—qualities like accents, pronunciation, and rapidity of speech? Those can be imitated. So do your Jack Nicholson at the drive-thru for laughs—but don't bet on hacking into his bank account. We simplified Nuance's robot-friendly quantitative rating system to show you how Spacey stacks up against other imitators.

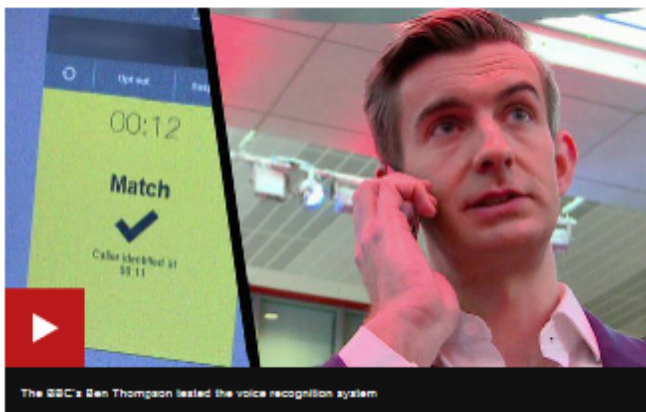
—ANDREW ROBBENLUM

Imitator	Imitators
Christopher Walken	Kevin Spacey
	Bradley Cooper
Johnny Carson	Kevin Spacey
	Dana Carvey
Al Pacino	Kevin Spacey
	Bill Hader
Richard Nixon	Kevin Spacey
	Frank Langella
Katharine Hepburn	Cate Blanchett
	Kevin Spacey



HSBC offers voice and fingerprint ID system to customers

19 February 2016 | Business



HSBC is launching voice recognition and touch security services in the UK in a big leap towards the introduction of biometric banking.

The bank says its phone and mobile banking customers will no longer have to remember a password or memorable places and dates to access accounts.

Barclays has already introduced voice recognition software, but it is only available to certain clients.

RBS and NatWest have offered finger print technology for the last year.

The move comes weeks ahead of the launch of Atom Bank, which will allow its customers to log on via a face recognition system.

HSBC says its service will be offered to up to 15 million banking customers.

First Direct's customers will be offered the voice and fingerprint recognition system over the next few weeks, followed by HSBC's in the summer.

Francesca McDonagh, HSBC UK's head of retail banking and wealth management, described the change as "the largest planned rollout of voice biometric security technology in the UK".

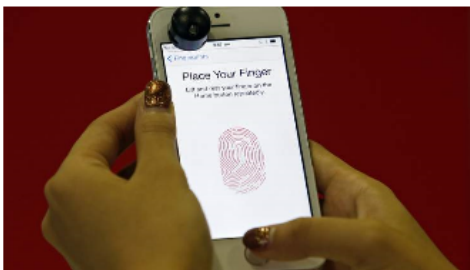
She said: "The launch of voice and touch ID makes it even quicker and easier for customers to access their bank account, using the most secure form of password technology - the body."

Touch ID is available on all Apple mobile devices for both HSBC and First Direct. Customers must download the mobile banking app and follow the instructions to link their fingerprint to it.

The future

Biometric Banking Security Hits High Street

Technology which recognises impossible to mimic biological characteristics could signal an end to forgetting your password or PIN.



The technology is already available for users of Apple's iPhone



Touch ID and voice recognition technology similar to that used on iPhones is to be introduced for bank customers.

The biometric banking system will allow First Direct customers to access their accounts using their voice and fingerprints.

Customers who opt in will have to enrol their "voice print" and will no longer need to remember or recite their current telephone security password letters or PIN.

A similar voice-activated payment system was launched last year on the ING Netherlands mobile banking app, offering an alternative to entering a pin or password.

Users say a short phrase, and the app will match up the sound recording to a file stored on the phone.



sky NEWS BIOMETRIC BANKING HSBC

Voice checked against pronunciation, speech and pitch

BIOMETRIC BANKING HSBC AND FIRST DIRECT ARE ROLLING OUT FINGER AND VOICE RECOGNITION TO STRENGTHEN THE SECURITY OF BANKING APPS

Voice Biometrics Adoption Landscape

115M+

Voiceprints in use
by our customers

3B+

Verifications worldwide



© 2014 Nuance Cc



RBC
Royal Bank

- **96% enrollment rate**
- 48% of all calls authenticated by voice biometrics within 3 months
- 42 seconds in AHT savings
- Authentication performed on 3 seconds of net-audio
- 8.8 / 10 customer sat rating

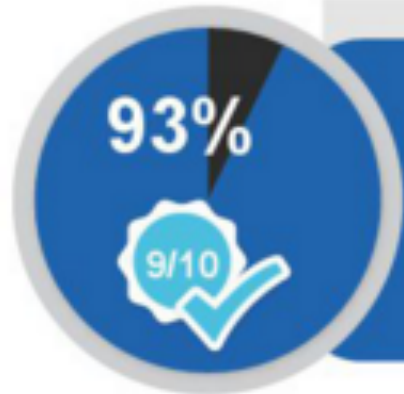
RBC voice biometrics technology rolls out

1st Canadian company to implement technology to identify client's 'voiceprint'

The Canadian Press | Posted: Oct 05, 2015 10:57 AM ET | Last Updated: Oct 05, 2015 11:01 AM ET



RBC says it is the first Canadian company to implement technology that can create and identify a client's 'voiceprint,' which consists of more than 100 different characteristics such as the client's pitch and accent, in the course of a regular conversation. (Mark Blinch/Reuters)



93 percent of customers gave Barclays a 9 out of 10 satisfaction rating for its voice authentication system.



Barclays reduced call times by 15 percent to improve the customer experience.



Barclays enrolled 84 percent of its frequent callers in less than five months.



95 percent of callers enrolled through FreeSpeech are successfully verified.

Community Bank



Key Pain Point

- Number 1 complaint in the contact center was the authentication process

Key Performance Metrics

- 0 fraudulent attempts were successful against the VB authentication system
- 96% Successful Authentication Rate with Passive Voice Biometrics
- 94% Agents find VB has helped them deliver better customer service
- 60 Seconds of AHT Reduction

“customer love the **security** of it and also the **time it saves**”

“I tell customers that it's like **adding a thumbprint** on their account. They love that!”

Increased Agent Satisfaction



94% Agents reported Voice Biometrics makes it easier to deliver quality service

60% Agents reported job satisfaction has improved since deploying voice biometrics



6%

reduction in agents absenteeism + increase in retention rate

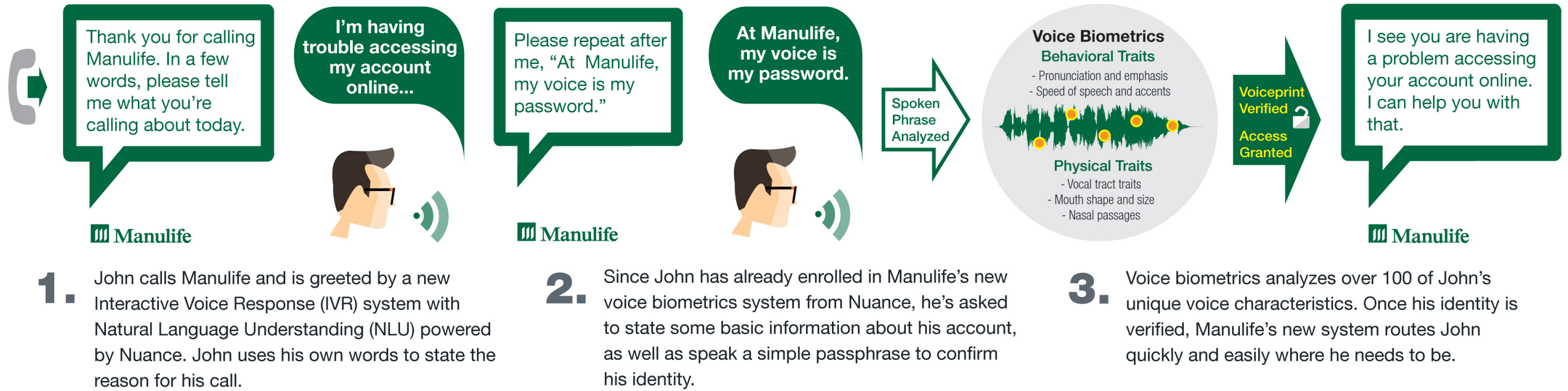
Manulife – NLU + Voice Biometrics



Natural Language Understanding and Voice Biometrics



Self-Service Interaction via Phone 



1. John calls Manulife and is greeted by a new Interactive Voice Response (IVR) system with Natural Language Understanding (NLU) powered by Nuance. John uses his own words to state the reason for his call.

2. Since John has already enrolled in Manulife's new voice biometrics system from Nuance, he's asked to state some basic information about his account, as well as speak a simple passphrase to confirm his identity.

3. Voice biometrics analyzes over 100 of John's unique voice characteristics. Once his identity is verified, Manulife's new system routes John quickly and easily where he needs to be.



You Retweeted



Rick Lunny @Rick_Lunny · 1 Dec 2015

Proud that @Manulife Bank 1st Bank in Canada to introduce voice biometrics to enhance customer service.



Retweet 11 Like 5



Voice Biometrics in IVR



Challenge

- 60-65% ID&V failure in IVR
- 1.2 minute to ID&V a caller with agent
- High operational costs related to ID&V
- Customer dissatisfaction with legacy authentication method (6-digit PIN)

Results:

- AHT reduced by 42 seconds
- High authentication success rate
- 53 agents repurposed to sales
- Over \$1M in savings in year 1
- VB generating revenue

3M+ customers enrolled in first year

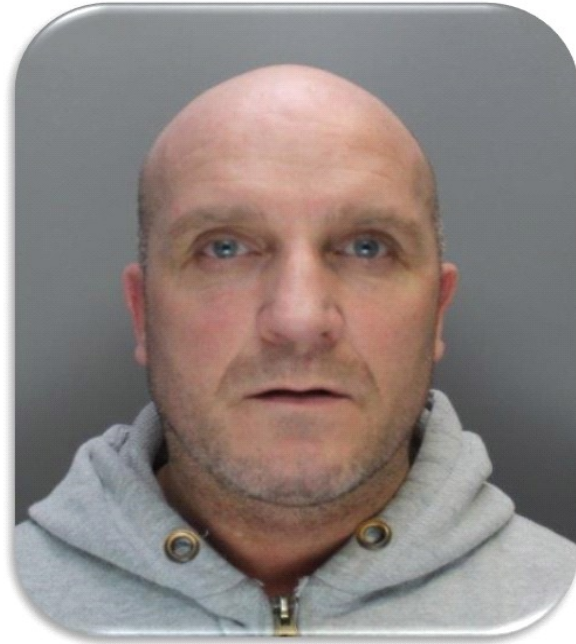


Concepción Ramírez Re

<http://youtu.be/-1kjidIDk8o>



**WATCH THIS HACKER
BREAK INTO
MY CELL PHONE ACCOUNT
IN 2 MINUTES**



Sentenced to 2 $\frac{1}{2}$ years

Name: Lee Chisholm

Age: 44

Chisholm repeatedly made call pretending to be the customer gathering personal information to allow him to take control of accounts. He then used the cards to make a variety of purchases which he would sell on. He specialised in garden furniture, Christmas hampers and hairdressing products.

Using voice biometrics, we managed to track his exploits preventing £370,000 of financial loss



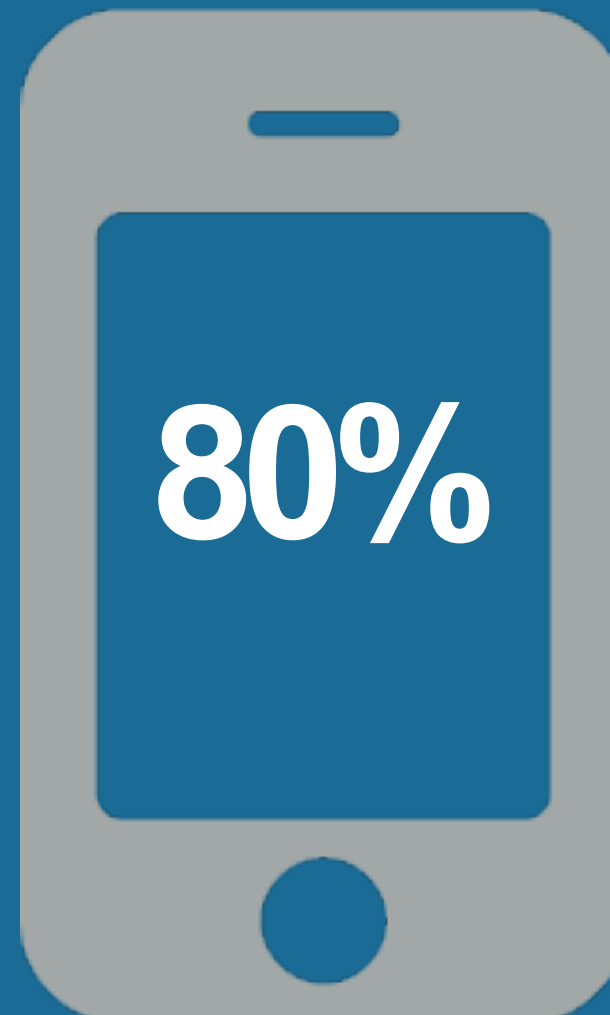
Sentenced to 7 years

Name: Maxwell Parsons

Age: 49

Defrauded the banking industry of £2.5m
Parsons devised computer software to reverse bank transactions enabling him to spend money repeatedly from a number of Banks. At the peak of their activities, police said the gang had "laundered" up to £50,000 a day.

How much fraud can VB address?



Securing Authentication

Figure: Vulnerability to Fraud

	Physical Tokens	PIN/PWD	Challenge Questions	Voice Biometrics
Theft	High	Medium	Medium	Low
Discovery/Guessing	Low	High	High	Low
Brute Force	Low	High	High	Low
Eavesdropping	Low/Medium	High	High	Low
Hacking/Cracking	Low/Medium	Medium	Medium	Low
Phishing	Low	Medium	Medium	Low
Vishing	Low	High	High	None
Smishing	None	High	High	None
Credential Sharing	Med	High	High	Low
Social Engineering	None	Medium	High	None

Voice Most Reliable Mobile Authenticator but not appropriate for all contexts

Authentication Success Rate

Method	Verification Success
Voice	100%
Password	90%
Fingerprint	80%

Yet, other factors drive preference

“Let's say I am sitting on the bus, I wouldn't wanna use my voice as my password, repeating that... it would sound weird.”



Australian Government
Australian Taxation Office

 **ato.gov.au** 
@ato_gov_au



 Follow

Join 1.5 million Australians now using their voice to confirm their identity with us! Info @ ato.gov.au/app



RETWEETS
9

LIKES
5



1:04 AM - 15 Jan 2016



Voice Biometrics at Australian Tax Office

Improves the customer experience



- ✓ Increases customer satisfaction with a simplified and seamless authentication experience



- ✓ Reduces average call handling time (AHT) – successful verification of a customer’s identity removes the need to answer security questions



- ✓ Increases community confidence in the security of their personal information

Enhances security



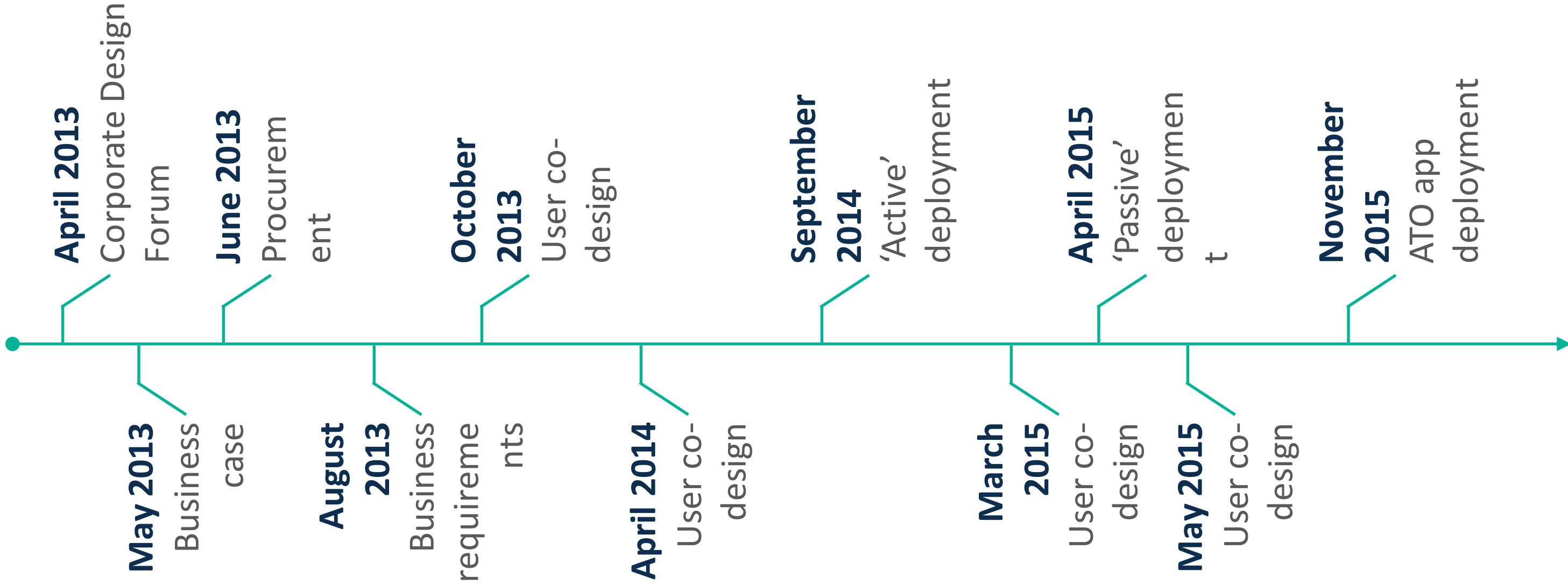
- ✓ Provides additional level of security to customer records and enhance data integrity



- ✓ Increase assurance of customer identity
- ✓ Help combat identity theft and reduce unauthorised access to records



Australian Government
Australian Taxation Office

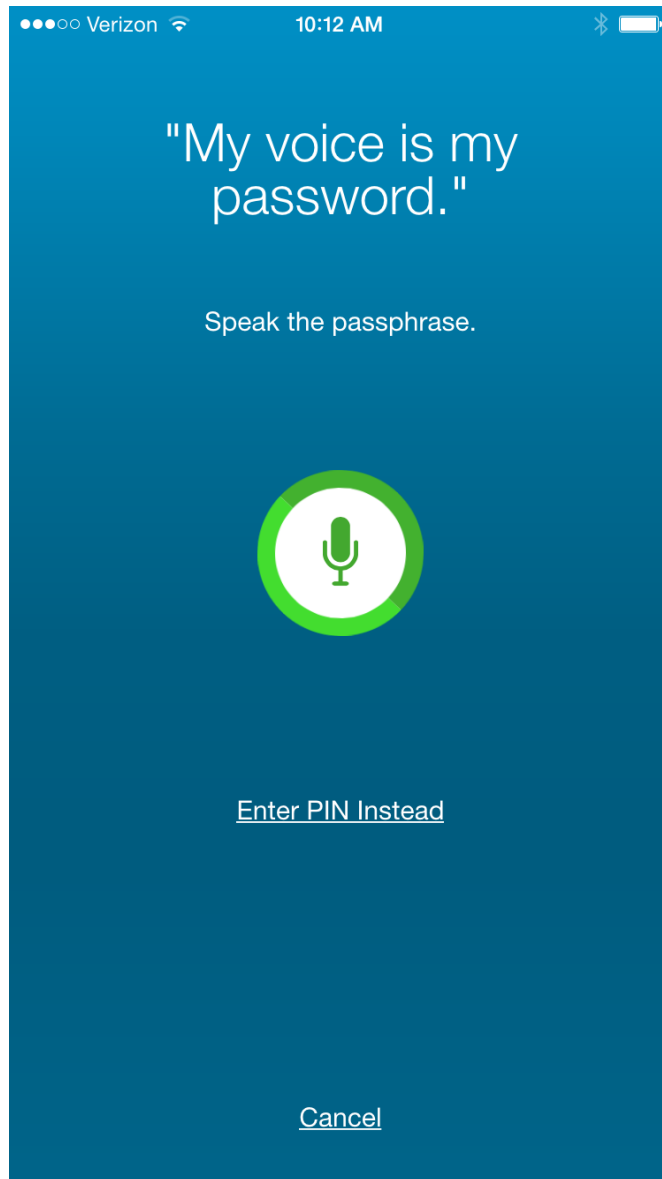




1.6 million people
have enrolled their
voiceprint

Mobile App
IVR
Contact Center

Mobile VB & Cross-Channel



- Mobile App deployments with over 1m voiceprints
- Holistic approach to mobile experience (end-to-end voice experience)
- Cross-channel deployments (mobile, IVR, web)



Virtual Assistant + Voice Biometrics



<http://www.youtube.com/watch?v=1gyvDD64eSw&index=1&list=PLFBC56144AE7F1AF0>



Our interactions with technology and organizations will become **seamlessly personalized**.

Explicit identification and verification will disappear.

It will feel like the devices, applications and organizations we interact with know who we are, **like a friend** does when they hear our voice or see our face.

Our identities will be known and validated passively through **biometrics, device identifiers** and **contextual factors**.