

Speak to me nicely and I'll tell you who you are

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Allied Irish Bank (AIB) had an all-too-familiar and costly problem two years ago: its employees kept forgetting their passwords. The bank's service desk had six full-time employees dedicated to dealing with 160,000 requests for new passwords a year. At peak times the number of staff increased to eight.

Today, head office employees can reset their passwords at any time of the day and need not queue for up to three minutes on the phone: their calls are answered straightaway.

The dramatic turnaround was the result of implementing a voice biometrics system that identifies the voice of the person phoning in. The bank is one of a growing number of companies to use voice biometrics systems. Its use goes beyond helping employees change passwords, however: it is increasingly being deployed by financial services companies in the battle against fraud.

The system is relatively easy to set up. At AIB, its 10,000 head office employees enrolled in the system by calling a number and repeating some words, which enabled the VoiceVault biometric system to capture a "voice print": a digital representation of the unique characteristics of the caller's voice. After that, resetting passwords is automatic.

While AIB has seen rapid returns on its investment by reducing the number of hours its help desk spends resetting employees' passwords, the biggest interest is coming from businesses that want to use voice biometric systems to authenticate the identity of customers.

According to Steve Cramoysan, a research director at Gartner, the research firm, current authentication methods on the phone are inadequate.

"The standard practice is to ask a series of questions: they ask for name, account number, address, date of birth and social security number. All those things are discoverable, and sometimes people don't like giving out all that information."

While voice biometric technology has been around for a long time, it is only in the past year that its accuracy has reached a level that makes it feasible for use with customers.

The other main technical development driving adoption, says Martyn Eley, chief executive of VoiceVault, is the increase in computer processing power: "We have processors now which are running 10 times faster than they were four or five years ago. So we can implement algorithms that would have taken 10 seconds to run in 2000, but now take one second to run, and can be used commercially."

Accuracy can now be very high: Mr Eley says that in a trial with a UK bank, VoiceVault managed to achieve an error rate of below 2 per cent. Modern systems can differentiate between identical twins and correctly identify someone even if they have a heavy cold. The most common difficulty arises if there has been a long period (say, two years) between someone registering on the system and using it: the voice can age during that time, and the user may need to re-register.

And there is an inevitable trade-off: most banks would rather reject a handful of bona fide callers than let through a fraudster, so there will always be a small proportion of genuine callers who will need to be put through to an operator for verification.

Organisations generally combine voice biometric technology with another security measure. When bank ABN Amro piloted a voice biometrics system with external customers, those people, after dialling in and giving an account number, heard their own voice asking them a secret question, such as: "What is your mother's maiden name?"

The technology has another potential security use: in the US, the health provider Wellpoint has adopted voice biometrics as a way of generating legally binding digital signatures. "When you speak, we can generate a biometric signature from your voice, which would be associated with the transaction. When the

agent has completed your health application over the phone, you can "sign" it using your voice, so you don't have to sign the documents when they come through the post," says Mr Eley.

So far, voice biometrics implementations have been small scale, says Mr Cramoyson. But he is confident of their future: "It's difficult to say that now is the tipping point, but we're getting close."

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