customer care solutions
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NUANCE

Nuance VocalPassword™ Deployment Achieves Industry-Leading Adoption Rates

Customers of Mobile Service Provider Enjoy Dramatically Reduced Access Authentication Time

speech HOUSE

TURKCELL
GLOBAL BİLGİ

About the Company

Turkcell Global Bilgi is a 100% subsidiary of Turkcell. The company serves as a customer relationship management center to a portfolio of corporations including Turkcell, which, as of December 2011, was the leading mobile provider in Turkey with over 34 million subscribers. With operational facilities in Turkey, Belarus, and Ukraine, Turkcell Global Bilgi has over 10,000 employees and 7,500 call center seats. The company handles more than 120 million contacts each year through their interactive voice response (IVR) system and more than 1.5 billion interactions across all customer service channels.

The Business Challenge

To manage their account and conduct transactions over the phone, Turkcell subscribers needed to enter the 4-digit pass code associated with their account. Many of the callers did not have or could not remember their code, so they were unable to conduct transactions using the IVR system. These callers were transferred to Turkcell Global Bilgi call center agents, who were tasked with asking personal information to verify the callers' identity. This was a time-consuming process that obstructed the caller from quickly completing their transaction and, as a result, had a negative impact on customer satisfaction.

The Company
Turkcell Global Bilgi

Nuance Solutions
VocalPassword

Results
- As of December 2011, the Turkcell deployment had more than 4 million enrolled voiceprints, making it the voice biometrics application with the world's largest number of enrollments.
- Reduced the verification process time by at least 20 seconds, resulting in authentication being completed in just a few seconds.
- Dramatically reduced operating expenses by reducing the total call duration and agent talk time.

Turkcell Global Bilgi sought to simplify and streamline this identity verification process and identified clear benefits with a voice biometrics solution. These included:

- Reducing the overall time to authenticate a caller. The company estimated a potential 20-second reduction in time for individual subscribers and a 40-second reduction for corporate subscribers.
- Increasing the security of transactions by using the biometric features of voice for account access instead of answering questions.
- Improving the customer experience by providing a faster and easier authentication process using enhanced technologies. With voice biometrics, callers would no longer have to remember their pass code.

To select a vendor for a voice biometrics solution, the company issued a comprehensive request for proposal (RFP). To gain additional insight into technical features and potential deployment challenges, the company also did a pilot implementation of a password reset application for 7000 employees. The password reset application was developed based on a solution provided by Speechouse using Nuance voice biometric technology. The pilot enabled Turkcell Global Bilgi to get real user feedback and experience for their next implementation. It also helped to confirm the existence of local support partners.

The Solution

Following a detailed review of RFP responses and the success of the password reset pilot application, the company chose to partner with Speechouse and Nuance. Nuance provided the biometrics engine, system infrastructure and technical support, while Speechouse provided professional services.

From a technical perspective, the reasons for selecting Nuance's solution included:

- The ability to store different voice prints for different security levels
- Ease of integration
- Ability to store user data locally
- Built-in administration tools

The solution developed for Turkcell uses Nuance VocalPassword, a biometric speaker verification system that verifies a speaker's identity using acquired voice samples. Samples of the caller's voice are converted into voiceprints, or unique algorithms based on the specific characteristics of the voice, which are even more unique than fingerprints.

While the VocalPassword system can employ one of multiple biometric engines, the engine for Turkcell is text dependent. The spoken phrase for enrollment is compared to the same spoken phrase for identity verification.

"Given that VocalPassword so accurately captures the complex voice characteristics of each enrolled individual, our voice prints are infinitely more secure tokens than a credit card number or a PIN. Voice is also the only biometric that can be verified remotely over any phone, making it the most convenient biometric to use," said Dan Faulkner, vice president, product management and marketing at Nuance Communications.

Speechouse and the Turkcell Global Bilgi team worked closely in each phase of the project, including designing the caller interaction flows, development of the code, performing the installations and integrations, editing and voice coaching of the prompts, putting the system to production, and performing pre- and post-deployment calibrations all to make sure that the system helps Turkcell users make their transactions in a faster and much more efficient way.

CEO of Speechouse, Tarkan Ersubaşi, stated that their primary commitment was to serve its customers by using a technology that is most "natural", therefore fast and easy. "At Speechouse, we always aim to develop innovations that are parallel to the users' habits. Turkcell Global Bilgi, serving millions of Turkcell users, likewise has a technology vision that focuses on easily adaptable applications which provide efficiency. The partnership we established will proceed further with a view to empower most commonly used applications of the Turkcell IVR system with speech recognition technology."

The Enrollment Process

For the Turkcell 'Voice Signature' service, the process for customers to enroll is extremely straightforward. To determine if the caller is eligible to enroll, the application first checks to see if the phone number from which they are calling (their ANI) matches the number associated with the account for which they want to make a transaction. If it does, and they have not enrolled in the Voice Signature service, they are given the option to enroll when their call is being transferred to an agent.

The prompt the caller hears, translated from Turkish to English, is as follows:

> "From now on, we will acknowledge who you are from your voice without the necessity to answer security questions. The only thing you need to do is to register your voice one time. Please hold on to register your voice print. If you would like to speak to an agent, you can press 0 anytime. To generate your voice print, you only need to say 'Turkcell recognizes me from my voice' following my instructions. Now please repeat the sentence in the same way after the tone. 'Turkcell recognizes me from my voice.'"

They are asked to speak the pass phrase three times. The captured audio stream is characterized, and this unique profile, or voiceprint, is stored in a highly secure database.

Callers that leave their voice print this way are enrolled as the type 'user.' Callers of this type can only perform a limited set of transactions after being verified by their voice. During their call, if they answer additional security questions asked by the agent, their voice print is changed from 'user' to 'owner'. They can then perform all transactions following voice verification.

The Verification Process

In subsequent calls, to verify the caller's identify using their voice, the caller is asked to speak the same pass phrase used during enrollment only once. If their voiceprint matches the one stored in the database within the company's designated range of accuracy, access is permitted. The result of the attempt to match the voiceprints is also shown on the agent's desktop when calls are passed to an agent.
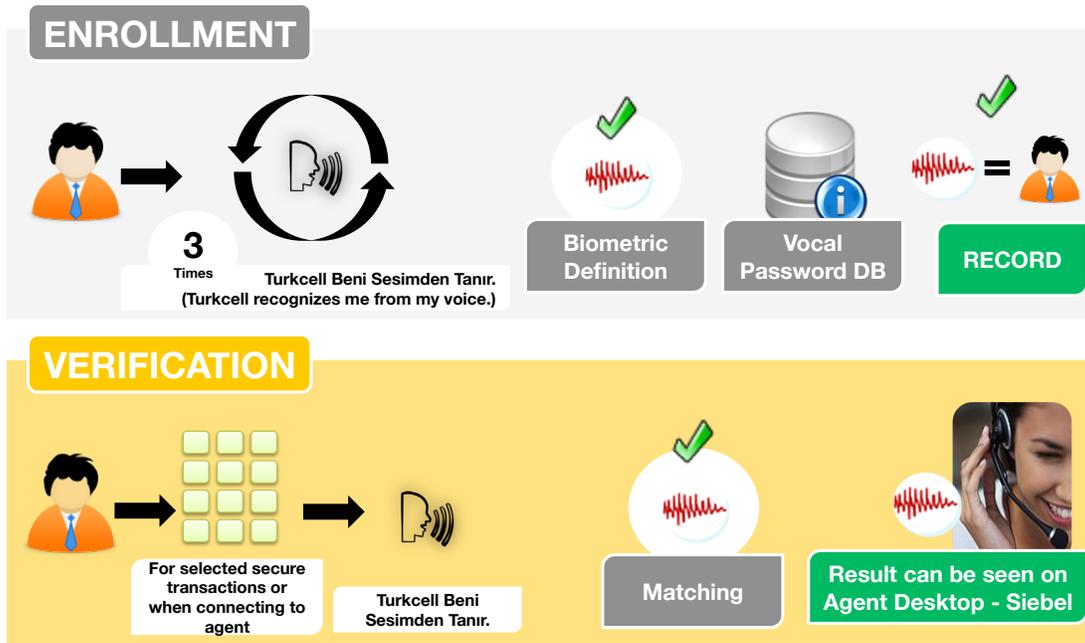
Choosing the Pass Phrase

Although companies can allow callers to select their own pass phrase with the VocalPassword system, Turkcell Global Bilgi recognized that the verification process is an opportunity to reinforce and let callers engage with a company's brand. They wanted, therefore, to choose a specific pass phrase spoken by all callers that emphasized Turkcell's key brand attributes. The selected phrase, translated as "Turkcell recognizes me from my voice," communicates that Turkcell is an innovative company with whom it is easy to do business. Choosing a singular pass phrase also simplified the caller experience by eradicating the traditional irritation of losing or forgetting a unique access credential.

The Deployment and Promoting Enrollment

To build experience and expertise prior to a full roll-out, a 15-day pilot of the Voice Signature solution was conducted with the Turkcell Global Bilgi client services team. This group provided detailed usability feedback and simultaneously created application advocates that were used to promote enrollment.

Following this 15-day internal pilot, two ports of the IVR system were initially opened to use the voice verification system. They then increased the number of ports incrementally until full production.

To promote the new voice verification system to Turkcell customers, the following tactics were employed:
- Target groups were identified as prime candidates for the solution, such as callers who frequently make transactions with agents. Outreach to these groups was then conducted through SMS messages and outbound voice messages via the IVR.
- Turkcell encouraged customers to become advocates and promote the solution other subscribers through word of mouth and social media.
- Agents promoted the solution to callers who had not yet enrolled.

To increase enrollments following these initial promotional activities, the company created a commercial with a well-known actor and posted it on their website. Also, press releases were issued and additional promotions were made through social media.

Results

Since launching the Voice Signature solution in early 2010, the number of customers enrolling and completing verification with their voice has incrementally increased. The following chart indicates the growth of enrolled customers and usage for verification.
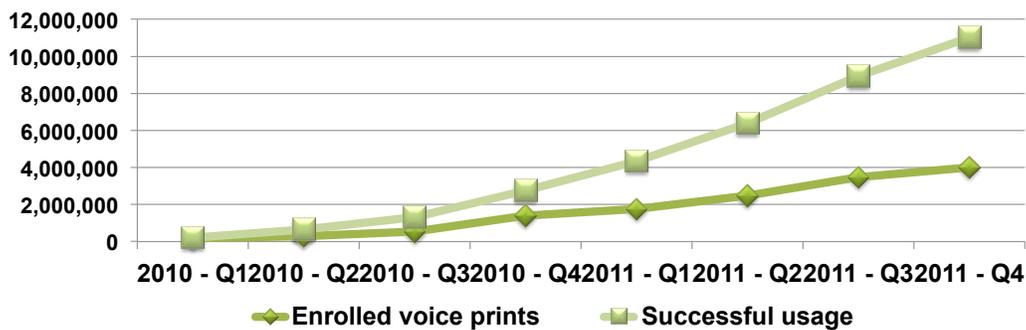
As of December 2011, the Turkcell deployment was both the world's fastest ramping voice signature application rollout and the world's largest voice biometric solution.

The impact on the caller experience and operating expenses has been equally impressive. For agents to manually verify callers' identity, it averaged 25 seconds. The VocalPassword system has reduced the verification process time by at least 20 seconds, resulting in authentication now being completed in just a few seconds. Callers appreciate the faster interaction, and the company, by reducing the total call duration and agent talk time has dramatically reduced its operating expenses.

"As a pioneer service in Turkey, we first launched this system for a limited number of subscribers, but it attracted more attention than we had expected and reached 4 million users in a short time," said Fahri Arkan, assistant general manager of information technologies at Turkcell Global Bilgi. "Customers like the very simple and fast authentication process of only 5 seconds."

About Nuance Communications, Inc.

Nuance is a leading provider of speech and imaging solutions for businesses and consumers around the world. Its technologies, applications and services make the user experience more compelling by transforming the way people interact with information and how they create, share and use documents. Every day, millions of users and thousands of businesses experience Nuance's proven applications and professional services. For more information, please visit: www.nuance.com.