Mobile Connect Turbocharges New Services

How Turkcell's mobile authentication service is helping Turkey's start-ups to grow

Executive Summary

This case study explores how Turkcell is harnessing the global Mobile Connect authentication solution to support its own digital transformation and enable starts ups to provide users with a better log in experience, driving greater adoption of their services.

Developed by the GSMA and its member operators around the world, Mobile Connect is a secure federated authentication solution that works by matching an individual to their mobile phone number or MSISDN. There are now more than 18 million registered customers for Mobile Connect in Turkey - 12 million of these are Turkcell SIM customers and five million are non-Turkcell mobile users.

Istanbul-based start-up Kimboo, which enables individuals to identify people with similar interests by answering poll questions, is using Mobile Connect to build consumer trust. Initially, Kimboo relied solely on Facebook Login for its authentication process. However, whilst the Kimboo download numbers from Apple's App Store and Google Play were strong, only 40% of these downloads converted to an actual Kimboo registration using Facebook social log in. The company's customer research found that some potential customers were reluctant to use Facebook Login due to concerns over data privacy.

Kimboo decided to also offer new users Turkcell's Fast Login solution, which utilises Mobile Connect. Once the user has logged in via Fast Login, they can use all the features of Kimboo, including the messaging service, which is enabled once the mobile number has been verified.

Now 65% of Kimboo users employ Fast Login as their primary log in. A further 5% log in via Facebook and use Fast Login to verify their mobile phone number. Once Mobile Connect has authenticated a user and their mobile phone number, their Kimboo account is marked as "verified", which has had a significantly positive effect on users' perceptions, according to the company. In conservative markets, such as Turkey, giving users an extra element of verification is essential to create trust in the app, Kimboo has found. This is particularly true for female users.

"We think that an authentication solution provided by local GSM partners is strong for the local ecosystem," says Kimboo CEO Denet Tezel. *"Our customers are very happy to use it and it is driving our business forward. I think that the day we start using Mobile Connect exclusively as a login method is not in the distant future."*

Live quiz app Hadi is also using Mobile Connect to authenticate players of its games, which offer cash prizes to winners. Hadi broadcasts a general knowledge quiz live to its users' mobile handsets twice a day. When it was first launched, Hadi used a one-time password (OTP) delivered via SMS for authentication. But following meetings with Turkcell and tests of authentication solutions with user groups, Hadi launched Mobile Connect in April 2018.

"Connectivity with Turkcell was completed in a day and once users confirmed they were happy, we rolled out Fast Login through Mobile Connect," says Hadi Founder Emre Ulusoy. *"It has delivered a simple customer experience and has contributed to strong growth. We will finish the year with one million unique registered users and levels of participation are high with five million uses over the past five months."*

Both Kimboo and Hadi are now looking to use Mobile Connect to help them grow further in Turkey and also expand internationally.

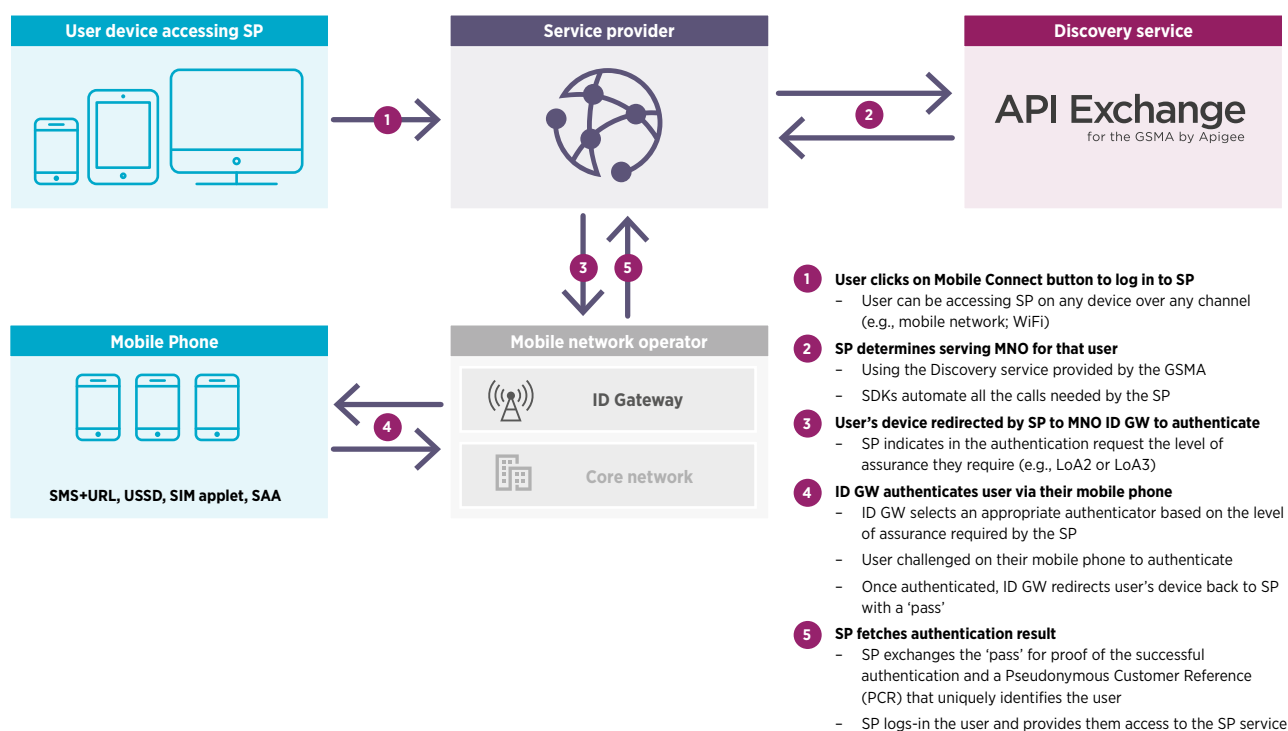# Mobile Connect Supports Turkcell's Digital Transformation

As part of its strategy to transform itself into a digital operator, Turkcell has rolled out an array of apps for consumers and solutions for enterprises that go well beyond its core connectivity proposition.

Many of these apps are available to non-Turkcell customers, as well as those with a Turkcell SIM. Aiming to secure a greater share of digital service usage and increase engagement, Turkcell's 1440 strategy has led to the rollout of a search engine, a TV platform, a media app, a music app, a payments proposition and other consumer apps. As a result, Turkey's leading mobile operator is increasing its share of the 1,440 minutes in a customer's day well beyond the 30 minutes achieved by a typical telco, according to Turkcell's research. In the enterprise space, Turkcell is offering cloud hosting, cyber security, digital advertising and other services.

Connecting the new propositions, and helping to drive rapid adoption, is a new authentication solution, Mobile Connect. Developed by the GSMA and its member operators around the world, Mobile Connect is a secure federated authentication solution that works by matching an individual to their mobile phone number or MSISDN. Turkcell verifies that the user of an app or service is in control of their mobile phone through single-factor authentication (known as Level of Assurance 2) process, using *"something I have"*: the phone. As a result, Mobile Connect can be used to easily authenticate users, facilitating quick registration and log in to websites and apps (see Figure 1).

Figure 1

How Mobile Connect works

1 **User clicks on Mobile Connect button to log in to SP**
   – User can be accessing SP on any device over any channel (e.g., mobile network; WiFi)

2 **SP determines serving MNO for that user**
   – Using the Discovery service provided by the GSMA
   – SDKs automate all the calls needed by the SP

3 **User's device redirected by SP to MNO ID GW to authenticate**
   – SP indicates in the authentication request the level of assurance they require (e.g., LoA2 or LoA3)

4 **ID GW authenticates user via their mobile phone**
   – ID GW selects an appropriate authenticator based on the level of assurance required by the SP
   – User challenged on their mobile phone to authenticate
   – Once authenticated, ID GW redirects user's device back to SP with a 'pass'

5 **SP fetches authentication result**
   – SP exchanges the 'pass' for proof of the successful authentication and a Pseudonymous Customer Reference (PCR) that uniquely identifies the user
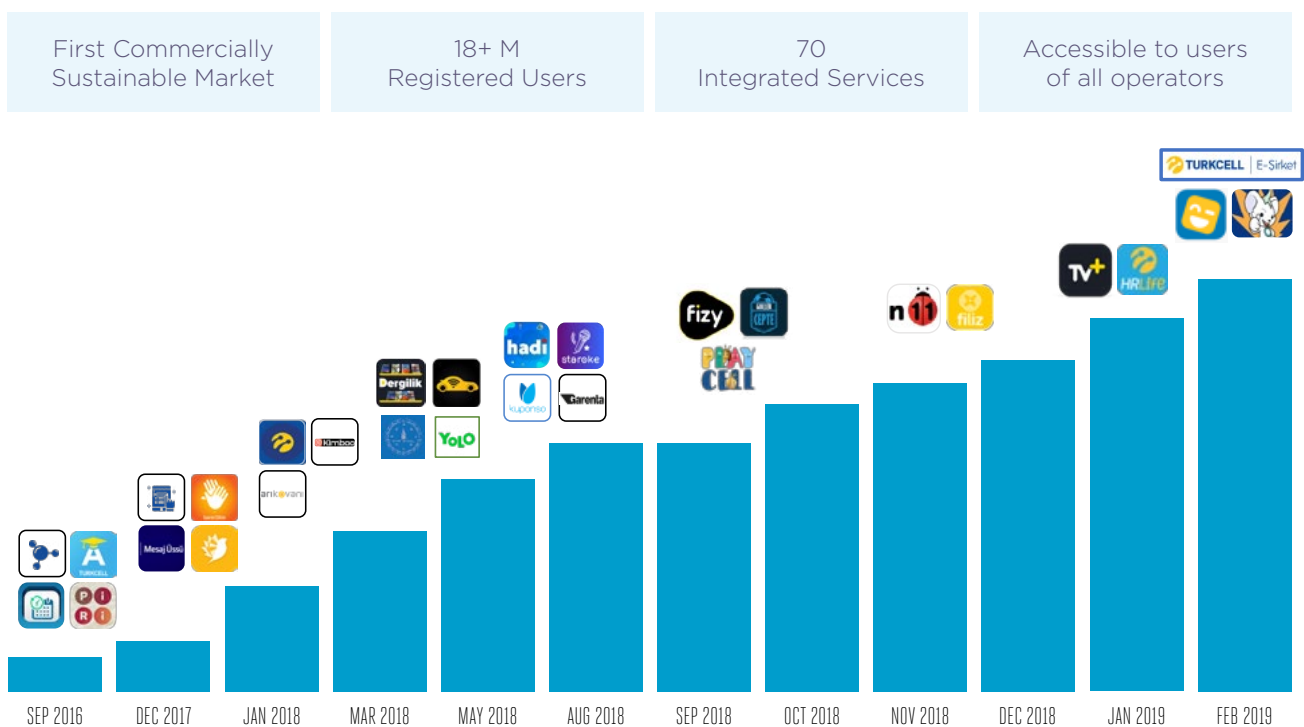   – SP logs-in the user and provides them access to the SP service

The roll out of new digital services by Turkcell has resulted in Mobile Connect being widely adopted in Turkey. There are now more than 18 million registered customers for Mobile Connect in Turkey - 12 million of these are Turkcell SIM customers and five million are non-Turkcell mobile users. In March 2019, Turkcell's customers collectively used its Fast Login service (which is based on Mobile Connect) more than 32 million times in the month (see Figure 2). Having achieved scale, Turkcell is exploring opportunities with partners to leverage the value of the Mobile Connect, which now has a large enough user base to make it attractive for merchants to leverage this strong authentication mechanism.

Figure 2

An integral part of Turkcell's digital services portfolio, Mobile Connect is seeing rising usage

First Commercially Sustainable Market	18+ M Registered Users	70 Integrated Services	Accessible to users of all operators

Source: Turkcell

Reporting its third quarter results in March 2019, Turkcell said Fast Login has 18 million registered users, adding that Fast Login has been integrated into 70 services through which around 32 million logins were facilitated during the quarter. Turkcell says that Turkey is now the first market in the world to meet the commercial sustainability criteria set by the GSMA.

In particular, Mobile Connect is making strong inroads into Turkey's live entertainment and games sector. Among the third parties adopting Fast Login solution are two start ups: social discovery service Kimboo and live-contest application, Hadi. The subsequent sections of this paper explore these deployments.

"With our Mobile Connect-compatible Fast Login solution, we make the login experience seamless and secure for the end users, while providing an essential authentication service to our corporate partners. As of today, we have integrated Fast Login into 70 services. Our target is to make our partners' lives easier and accelerate their journey towards digitalization."

Murat Erkan, CEO of Turkcell

Kimboo – enhancing the customer experience

Owned by Istanbul-based Data Birikim, Kimboo secured angel investor funding in 2015 and launched its first version in the first quarter of 2016. The company is led by CEO Denet Tezel. A highly diverse and multifaceted team, Data Birikim's partners and board members have extensive experience and expertise in multiple industries providing a unique strength in today's extreme competitive digital and mobile ecosystem.

Kimboo's core proposition is built on the insight that many consumers are interested in mass polling – they want to know what other people think. To meet that demand, it created a social discovery app. The initial model was continuously tested, developed and improved using a hands-on approach. At each stage, the app became more sophisticated, but also more user-friendly and appealing. The end result is a game based on sets of fun and thought-provoking "would you rather" questions." (see Figure 3).

Figure 3

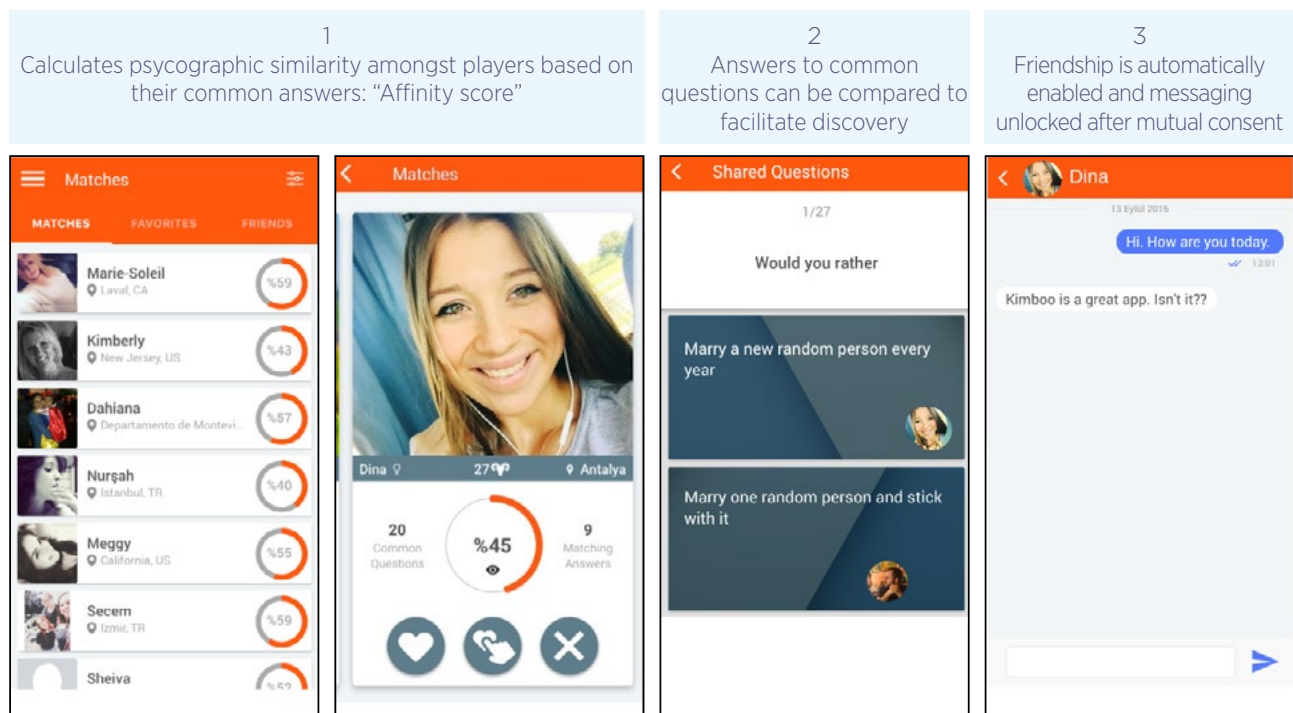### Kimboo's "Would you rather" question game
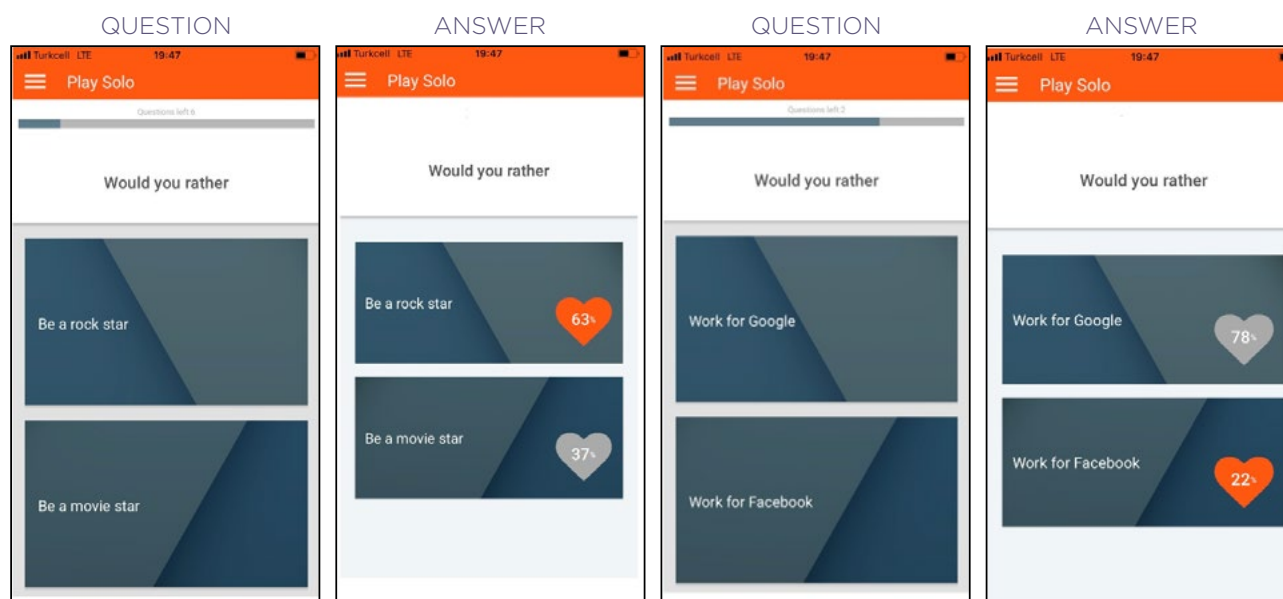
Source: Kimboo

As players answer the *"would you rather"* questions, Kimboo calculates the psycho-graphic similarity amongst users based on their common answers, allocating them a *"dynamic interpersonal compatibility score."* To enable people to find friends with mutual interests, beyond reviewing and filtering these compatibility scores, players can also compare his/her answers - one by one - with any player of their choice. At this point, two players can choose by mutual consent to become friends, thus unlocking direct messaging between them (see Figure 4).

Figure 4

How similar answers to questions can pave the way to friendship and direct messaging

| 1	2	3
Calculates psycographic similarity amongst players based on their common answers: "Affinity score"	Answers to common questions can be compared to facilitate discovery	Friendship is automatically enabled and messaging unlocked after mutual consent

Source: Kimboo

Through this process, the app can connect potential partners. Kimboo takes the view that traditional online dating services are becoming outmoded, belonging to the PC era, not the mobile era. CEO Denet Tezel's vision is to create a safe, engaging and comfortable proposition, blending the best of social media and online dating (see Figure 4).

Figure 4

Kimboo combines gamification, social media and dating in a single app

Source: Kimboo
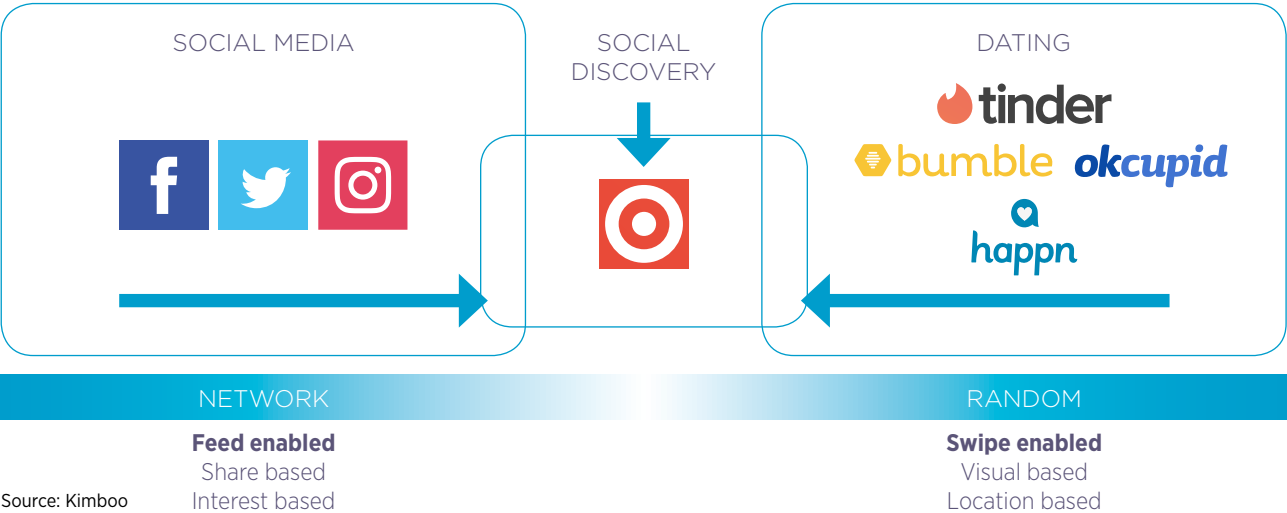
Kimboo has found that young women, in particular, consume the service as they would a quick questionnaire in a woman's magazine. They enjoy the gamification proposition that enables them to compare themselves with others and at the same time discover new people who are like-minded to them.

Initially, Kimboo relied solely on Facebook Login for its authentication process. Facebook offered an easy technical process, combined with automated retrieval of profile information: with one click users could create their Kimboo profile; a profile photo, name, gender, birthday can all be retrieved from Facebook's servers.

However, whilst the Kimboo download numbers from Apple's App Store and Google Play were strong, only 40% of these downloads converted to an actual Kimboo registration using Facebook social log in (See Figure 5). The company's customer research found that some potential customers were reluctant to use Facebook Login due to concerns over data privacy.

Figure 5

## Kimboo authentication process using only Facebook social login
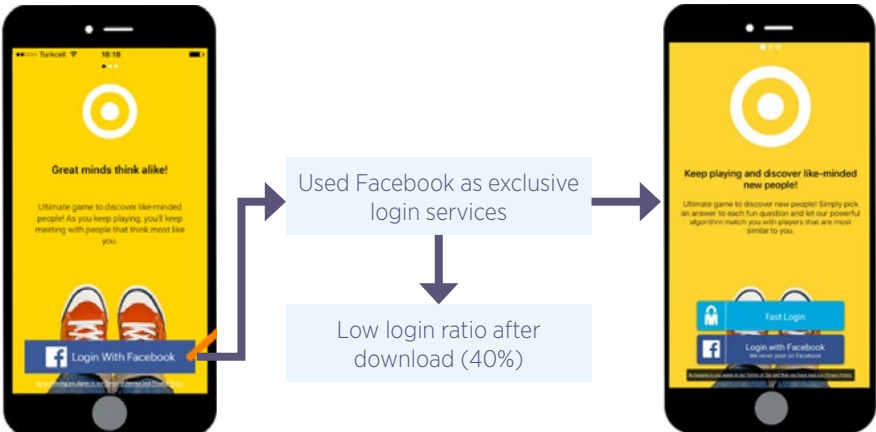
The role of Mobile Connect

By this point, Turkcell had launched its Fast Login solution, which utilises Mobile Connect, as an authentication solution for potential partners. Following discussions with the operator, Kimboo launched Fast Login as a second log in option in November 2017. If the customer chooses the Fast Login option, they are asked to enter their mobile number.

If the user is a Turkcell SIM customer registered for Mobile Connect, they receive a message via a SIM applet asking them to confirm the login by pressing "yes". If they are not a SIM customer of Turkcell, then the user receives an OTP (one time password) via SMS, which they can use to authenticate themselves (see Figure 6).
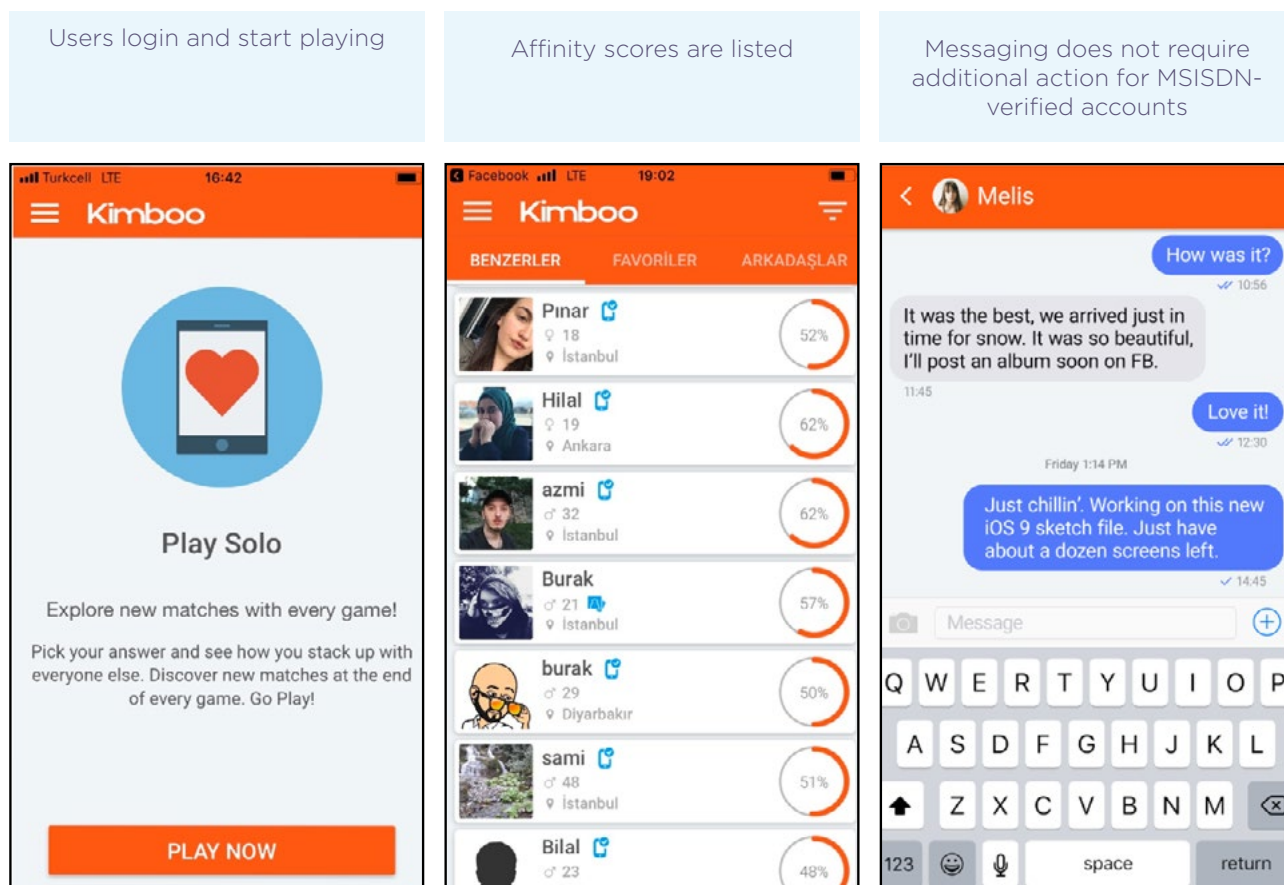
Figure 6

The user authentication experience for Fast Login on Kimboo
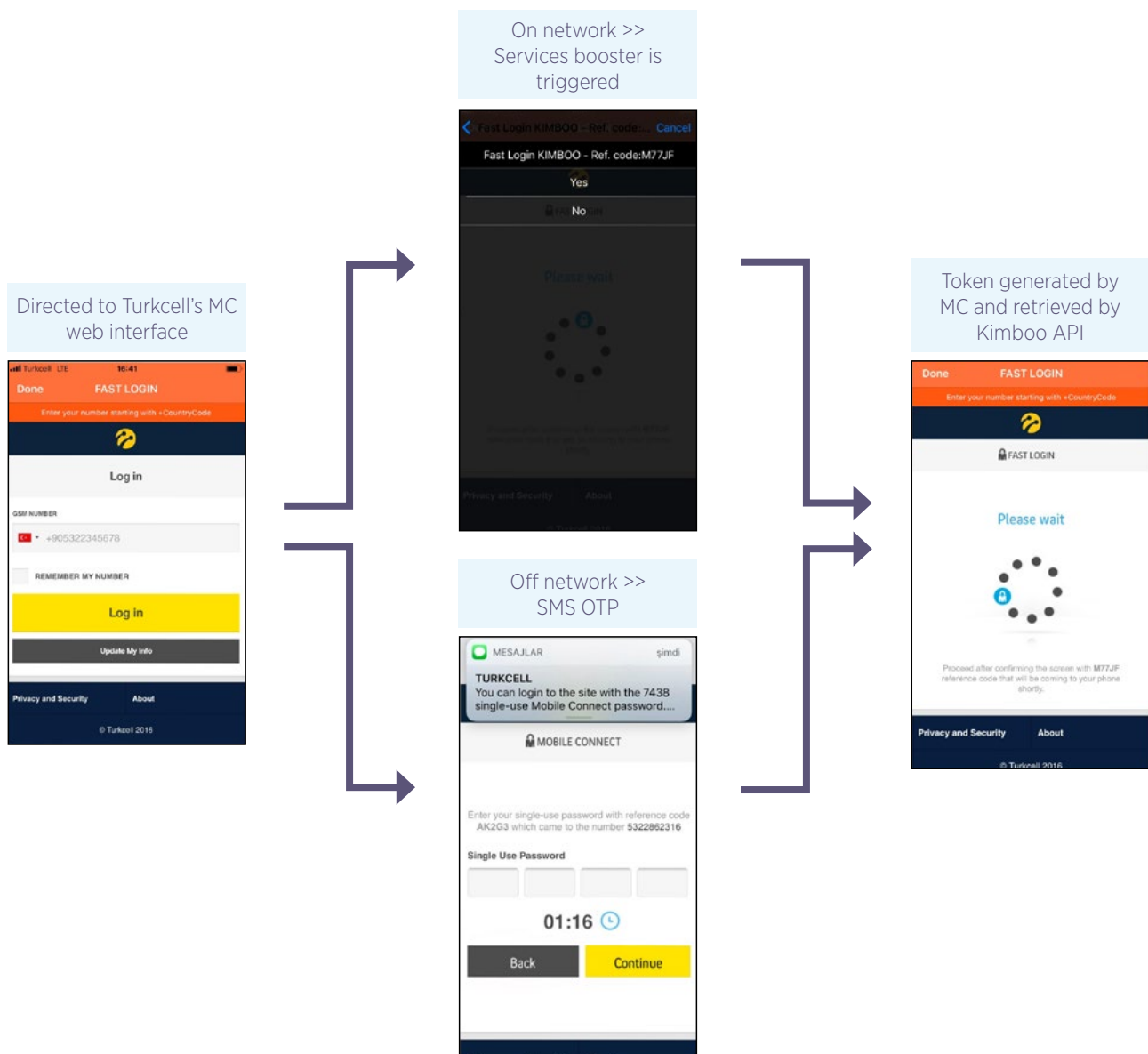
Once the user has logged in via Mobile Connect, they can use all the features of Kimboo, including the messaging service, which is enabled once the mobile number has been verified (see Figure 7).

Mobile Connect gives users access to all the app's features

| Users login and start playing | Affinity scores are listed | Messaging does not require additional action for MSISDN-verified accounts |

Source: Kimboo

Now 90% of all downloads are activated and 65% of Kimboo users employ Mobile Connect as their primary log in. A further 5% log in via Facebook and use Mobile Connect to verify their mobile phone number (see Figure 8). Once Kimboo users have employed Mobile Connect to authenticate themselves and their mobile phone number, their Kimboo account is marked as "verified", which has had a significantly positive effect on users' perceptions, according to the company.

Kimboo says that using online dating services can be perceived as risky, as people often seek to hide their identities, sometimes by creating false accounts with dating sites. Giving users an extra element of verification is essential to create trust in the app, Kimboo has found. This is particularly true for female users.

Figure 8

Mobile Connect can be used to verify a Kimboo account bolstering trust

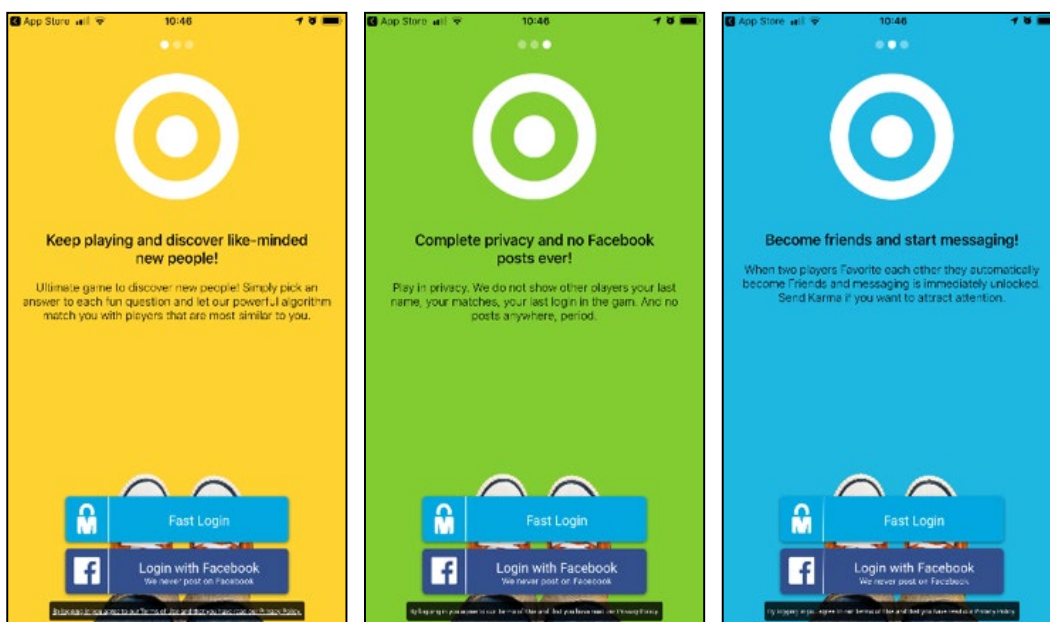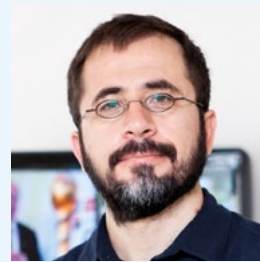Messaging disabled until MSISDN is verified
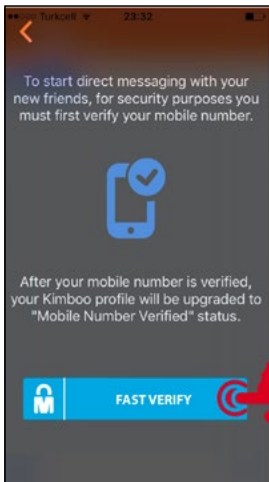
Source: Kimboo

In addition to deploying Mobile Connect, Kimboo added additional content to explain no data was shared back with Facebook in order to address users' concerns (see Figure 9).

"Kimboo is proud to be the first app deploying Mobile Connect in Turkey. The deployment of Mobile Connect was very smooth and we have subsequently built a strategic relationship with Turkcell as they build a strong digital proposition for enterprise customers in Turkey. We think that an authentication solution provided by local GSM partners is strong for the local ecosystem. Ours customers are very happy to use it and it is driving our business forward. I think that the day we start using Mobile Connect exclusively as a login method is not in the distant future."

Denet Tezel, CEO of Kimboo

Figure 9

Kimboo makes it clear that users' personal data won't appear on Facebook

Source: Kimboo

Hybrid feature set

Diverging from conventional dating apps and leaning towards social media UX, Kimboo has an added feature where users can follow players of their liking.

To facilitate social discovery further, Kimboo has added a Home page where the activities of the followed players are fed in a timeline. Similar to Twitter's feed page, Kimboo's Home consists of text content where the answers of followed players appear. Based on the answers of the followed and how they compare to the follower's, the feed content is created automatically by Kimboo. In the near future, feed content will be fully personalised for each and every player thanks to machine learning and artificial intelligence.

In its latest version, players are able to record and upload 15 second Snapchat-like videos, where they are expected to briefly explain why they preferred a specific answer and make their case. These stories will be available to everyone who has answered that question. These stories will be fed into followers' home page feed.

What's next for Kimboo?

The Kimboo team is now working on a live TV game show format that employs its app. Aiming to take *"TV viewer interactivity to new a level"*, Kimboo plans to enable viewers to compare and find their affinity scores with guest stars of the show, all the viewers participating in the show and or each participant one-by-one. Viewers will be able to make these comparisons in real-time in the app, while watching the show on their TV.

Kimboo CEO Denet Tezel is also now looking to explore global opportunities: *"We created our proposition with a global vision and given how important MSISDN verification is to users we would look to work with local GSM operators using Mobile Connect in new markets,"* he says. *"Our vision is to become a global app with localized content where we provide added value not only to our investors, but also our user base, delivering a unique format."*
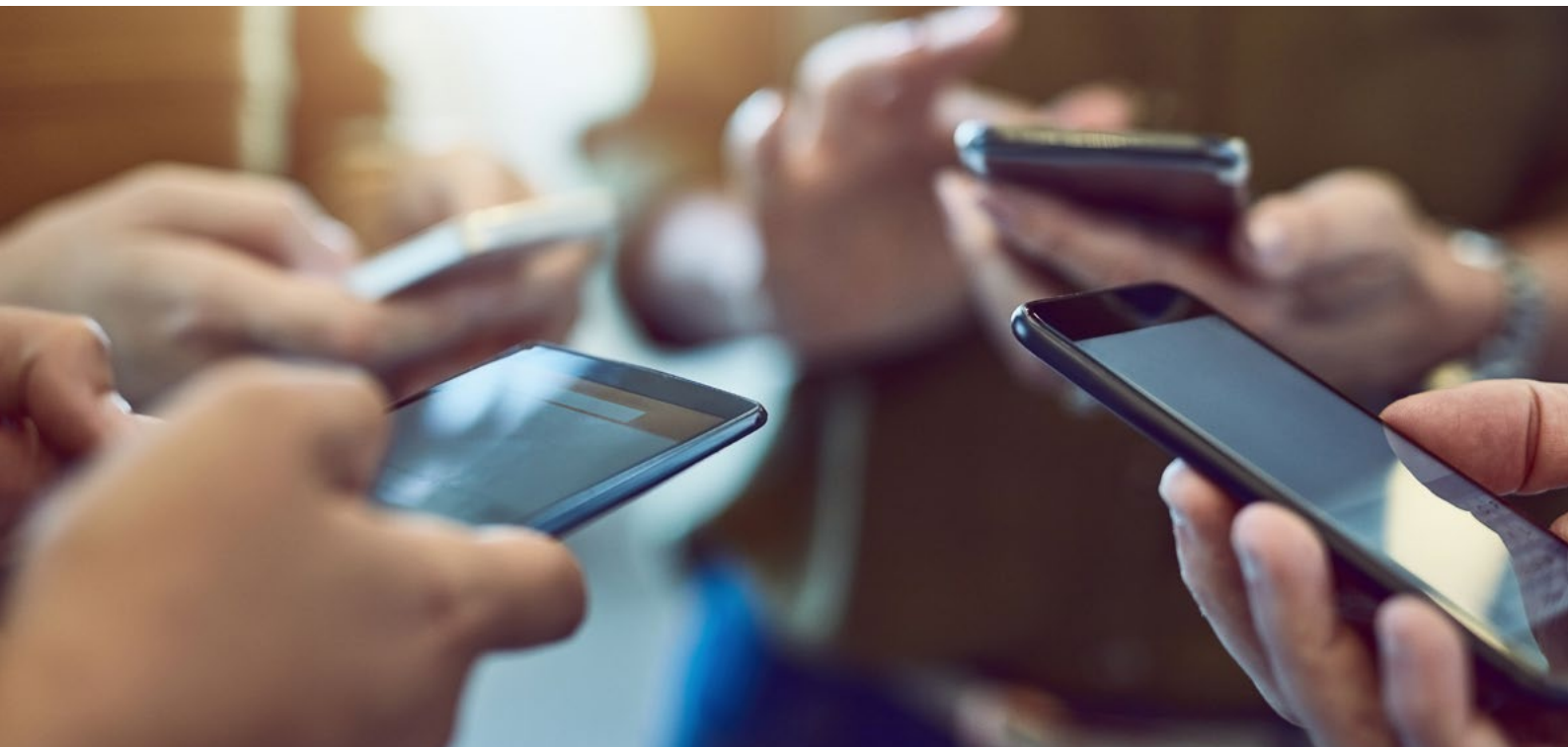
Hadi – streamlining the authentication process

Building on extensive digital product development experience from working in large enterprises in Turkey, Emre Ulusoy and Gökhan Örün founded Turkey's first interactive mobile trivia platform, Hadi, at the start of 2018.

Hadi anticipated strong consumer demand to participate in trivia quizzes that use the *"Who wants to be a millionaire?"* format. Quiz shows were already popular in Turkey, but there appeared to be an opportunity for a mobile proposition. Founders saw the opportunity and launched Turkey's first mobile interactive live trivia show which has become the Country's fastest growing application. It has achieved 8 million users in just 7 months and it continues to grow.

Hadi broadcasts a general knowledge quiz live to its users' mobile handsets at least twice a day ranging up to 20 games per week. Participants have 10 seconds to answer each of at least 12 questions. The winners equally share the prize which can vary from money to various non-monetary benefits available for that quiz. Up until now Hadi has distributed 6,5 million TL as reward. Hadi provides a platform to different target audience with its hard, medium and easy questions

from sports to music, cinema to magazine, family and gamer trivias. Each set of interactions with users generates insight which can be used to determine the contents to provide in future Hadi platform.

Hadi won and has been granted with several awards. It has also been listed among the best applications of the year on Google Play Store and App Store continuously.

Hadi has already gone far beyond being an entertaining, informative application. It has become an effective marketing field for brands. The most distinguished leading Turkish and global brands took place on Hadi as it drives measurable action and reduce lead generation costs by 50%.

Hadi is a not just a trivia show; Hadi is a next-generation live streaming interactive platform.

The role of Mobile Connect

When it was first launched, Hadi used an one-time password (OTP) delivered via SMS for authentication. But following meetings with Turkcell and tests of authentication solutions with user groups, Hadi launched Mobile Connect in April 2018.

"Connectivity with Turkcell was completed in a day and once users confirmed they were happy, we rolled out Fast Login through Mobile Connect," says Emre Ulusoy. *"It has delivered a simple customer experience and has contributed to strong growth. We will finish the year with one million unique registered users and levels of participation are high with five million uses over the past five months."*

Hadi has found that Mobile Connect achieves a good balance between simplicity and security (see Figure 10).

"Apart from a simple solution, it was necessary to be robust and easily scalable and Mobile Connect through Turkcell has been exactly this," notes Emre Ulusoy. *"The Hadi proposition also supports Turkcell's 1440 strategy, designed to encourage Turkcell customers to spend more of the digital consumption in the Turkcell ecosystem."*
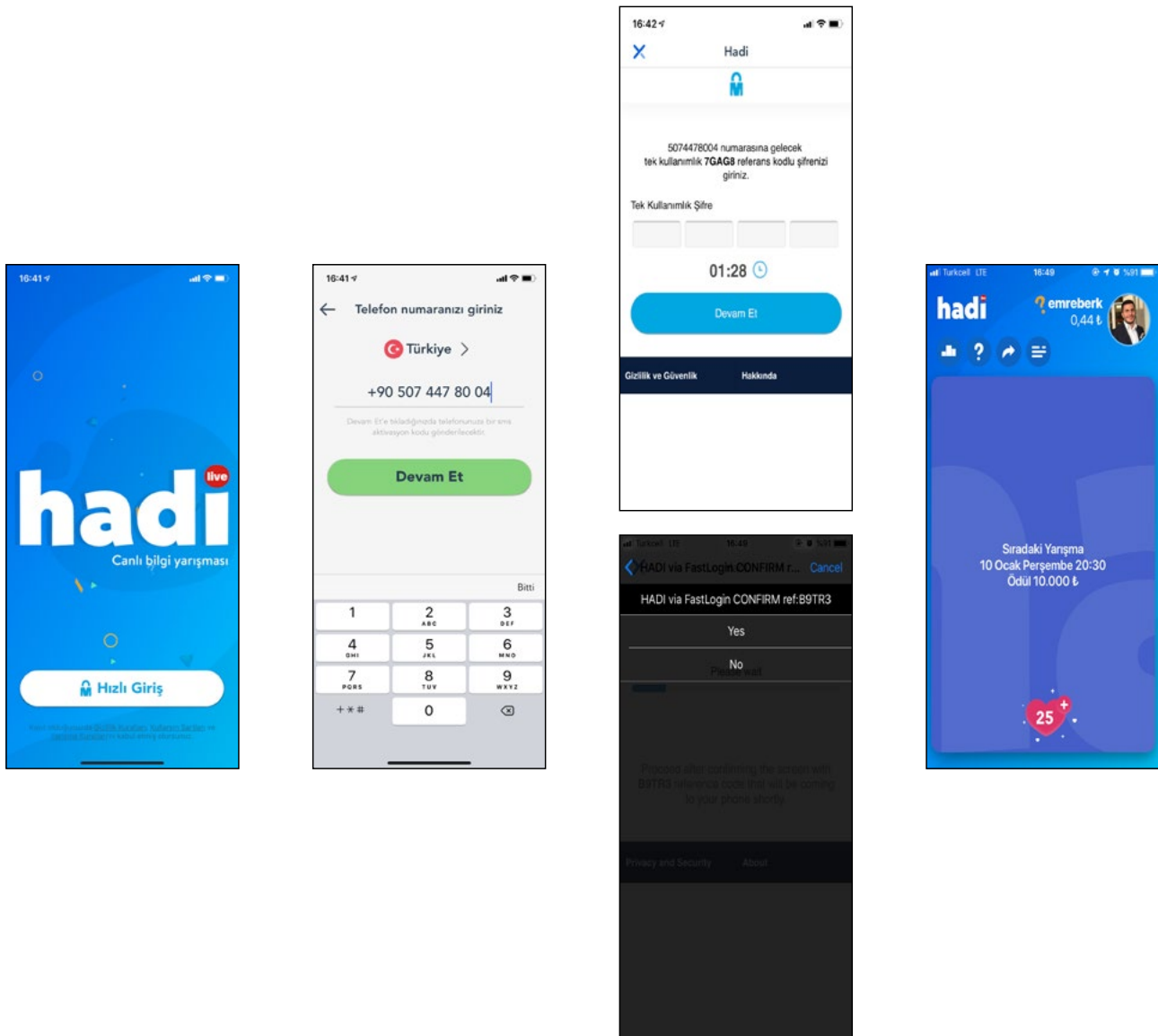
Reporting its third quarter results in October 2018, Turkcell said that Hadi makes use of Turkcell e-commerce competences and infrastructure, as well as its Fast Login authentication solution. *"Hadi trivias can last around 20 minutes per session, where to date 700.000 concurrent users have attended in a single session."*[1] Turkcell reported, underlining the ability of Mobile Connect to handle many simultaneous users.

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1. https://s2.turkcell.com.tr/hakkimizda/en/yatirimciiliskileri/InvestorReportLibrary/Turkcell-Press-Release-Q318.pdf

Figure 10

Hadi´s Mobile Connect authentication flow

What's next for Hadi?

Hadi is gearing up for aggressive growth. *"In Turkey we plan to continue our strong growth curve recruiting new users but also exploring new formats to test if we can extend usage beyond an hour per day,"* says Emre Ulusoy. *"We believe that shows delivered via mobile have an exciting opportunity."*

In addition, Hadi is exploring opportunities to take this next-generation live streaming interactive platform into other countries like the Middle East, Brazil, Germany, Greece and Mexico. *"We believe this platform and business model is transferable and are excited to explore such opportunities,"* concludes Ulusoy.

About the GSMA

The GSMA represents the interests of mobile operators worldwide, uniting nearly 800 operators with more than 300 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces industry-leading events such as Mobile World Congress, Mobile World Congress Shanghai, Mobile World Congress Americas and the Mobile 360 Series of conferences.

For more information, please visit the GSMA corporate website at **www.gsma.com**

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