



Current and Future Digital Transformation

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Overview of Turkey

80 M
population



young



67 %
young population

94 %
mobile penetration



mobile



62 %
smart phone penetration

48 M
Facebook followers in Turkey



social



#8
Turkey's country ranking





The Digital Bank



2nd largest private bank



15 M customers of which 10 M active
19 thousand employees



extensive distribution
937 branches & 5K ATMs



5th most valuable brand of Turkey
US\$ 1,5billion





Mobile Banking

5.5 M active users
200 different transactions
~183 M financial transaction per year



Online Banking

~2.5 M active users
>500 different transactions
~105 M financial transaction per year

95%
of all the transactions are
completed in digital channels



ATM

5.000 ATMs - **6 M** active monthly users
~30 M monthly transactions
8 languages, **5** different menu



Alo Garanti

~70 M calls per year
4,2 M product sales per year
self-service voice command transactions





New Features For Authentication on Digital Channels



Digital Banking Authentication

- Banks in Turkey must apply 2 factor authentication systems.
- Customers shall use 2 of the following

Something
You Know

Password
PIN

Something
You Own

OTP Generating Device
SMS OTP
OTP Generating App
Mobile Token

Something
You Are

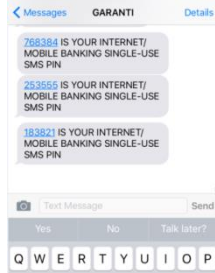
Biometrics




Restrictions

- Authentication factors must be different (2 biometric factors can not be used)
- Factors of authentication must be independent
- Validations must be performed within the bank. No offline authentication is allowed

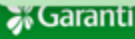
What Have We Been Using For Identification?




Online Banking Login and Transaction Signing via Mobile Notification

 GARANTI CEP now

You are logging in to 'NATURAL' session of Online Banking via this information. Safari - 14/...



MEHMET İZZET HACIALIOĞLU

 Please select your device on which Mobile Banking application is installed and matched. Approve the notification sent to your mobile device.


Last Transaction Date 14/05/2018 15:16

Last Login Failure 14/05/2018 15:09
(Last 5 Login Failure(s))

Login Method
Login via Mobile Notification

Mobile Device iPhone 6 - 14/05/2018 15:16

Session Information (Explanation) NATURAL
14/05/2018 15:16:43
Safari

 To approve the mobile notification 39 seconds left.

[SEND NOTIFICATION AGAIN](#)

Safari LTE 15:16 %88

Confirmation for Online Banking Login

You are logging in to 'NATURAL' session of Online Banking via following information. Please confirm to proceed.

14/05/2018 15:16:43
Safari

30

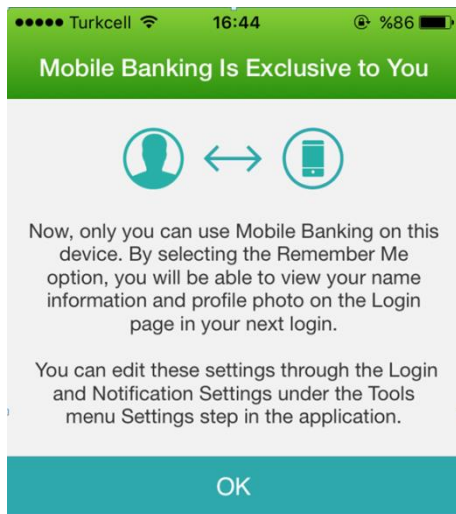
Confirm

Reject

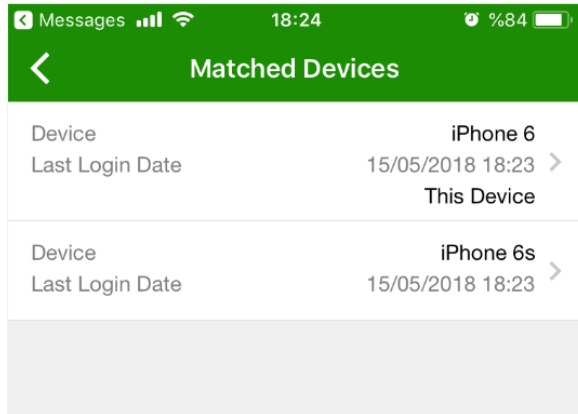


TOKENIZATION

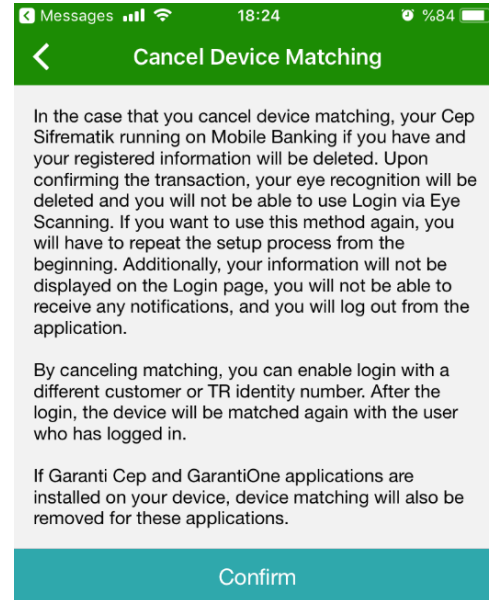
Matching



Showing



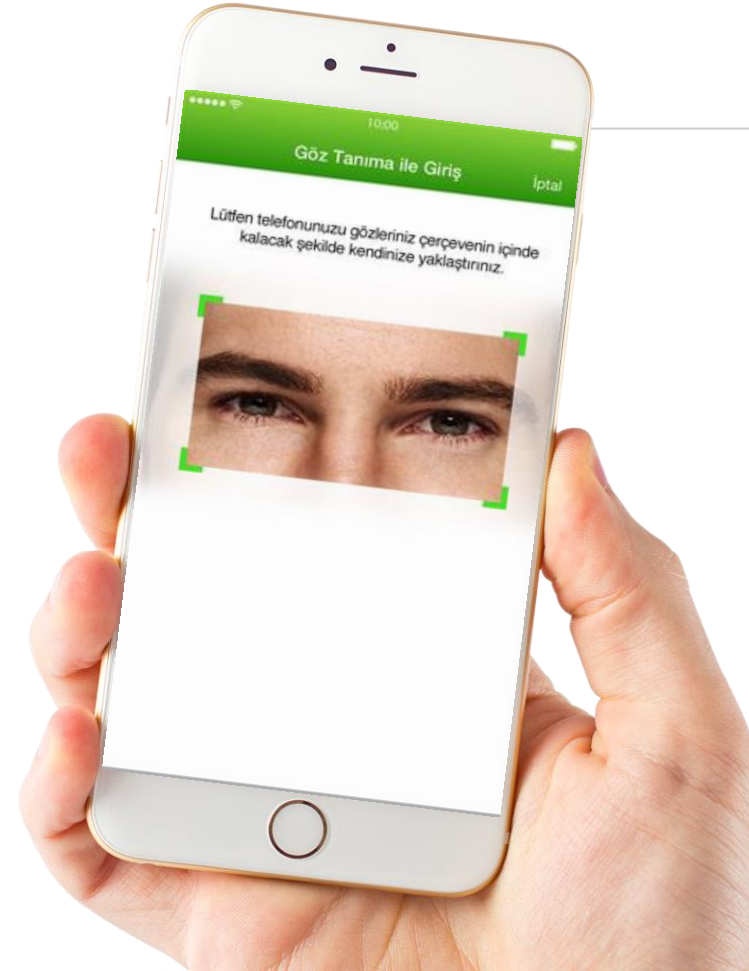
Cancellation





Biometrics - Eye Scanning

- **Easy** setup
- **Effortless** login
- Recognizing the structure of the eye





Free-speech

- **Automatically starts** in the background for agent side authentication
- Authenticates customer in **3 seconds**
- Bringing **security** and **UX** together with most convenient way

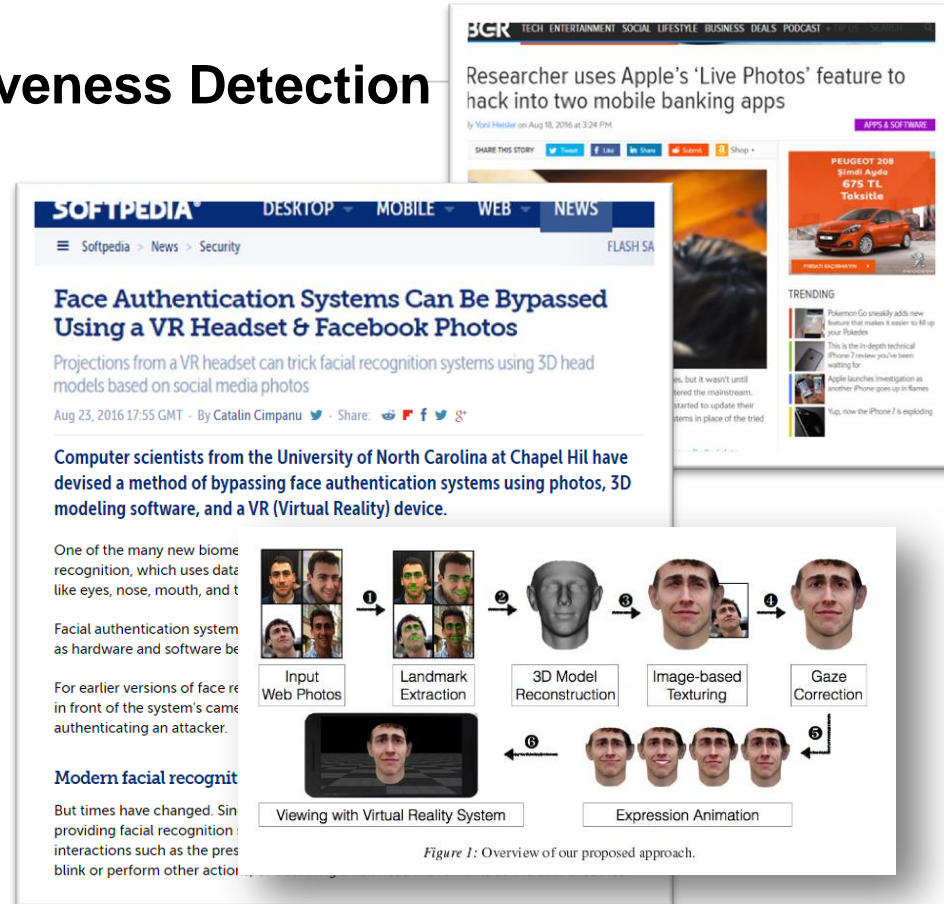




Biometrics Solutions & Liveness Detection

Increased processing power of mobile devices made a number of biometric verification techniques available. Most widely used methods are active/ passive voice verification, face recognition and fingerprint verification.

Liveness detection is a great challenge. It is very hard to tell if a biometric authentication system is verifying the real owner of biometric data or a previously captured audio/ video



Face Authentication Systems Can Be Bypassed Using a VR Headset & Facebook Photos

Projections from a VR headset can trick facial recognition systems using 3D head models based on social media photos

Aug 23, 2016 17:55 GMT · By Catalin Cimpanu · Share: [Facebook](#) [Twitter](#) [LinkedIn](#) [Google+](#)

Computer scientists from the University of North Carolina at Chapel Hill have devised a method of bypassing face authentication systems using photos, 3D modeling software, and a VR (Virtual Reality) device.

One of the many new biometric authentication systems, which uses data like eyes, nose, mouth, and ears to identify a user, is being bypassed by researchers at the University of North Carolina at Chapel Hill.

Facial authentication system as hardware and software be used to verify the user's identity. For earlier versions of face recognition, the user's face is in front of the system's camera. The system authenticates an attacker.

Modern facial recognition

But times have changed. Since the introduction of facial recognition, interactions such as the press of a button, a blink or perform other actions are required to verify the user's identity.

The researchers at the University of North Carolina at Chapel Hill have devised a method of bypassing face authentication systems using photos, 3D modeling software, and a VR (Virtual Reality) device.

The process involves the following steps:

- Input Web Photos
- Landmark Extraction
- 3D Model Reconstruction
- Image-based Texturing
- Gaze Correction
- Expression Animation
- Viewing with Virtual Reality System

Figure 1: Overview of our proposed approach.

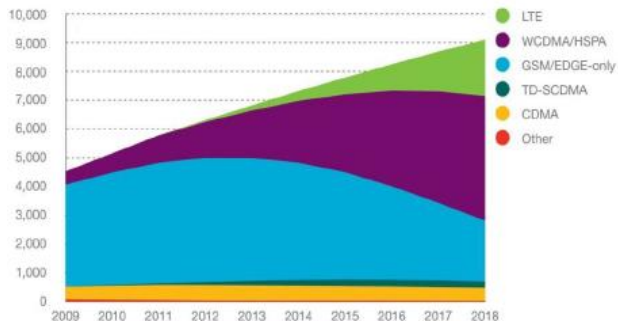


New Features For Ease Of Use On Digital Channels



Technological Advancement

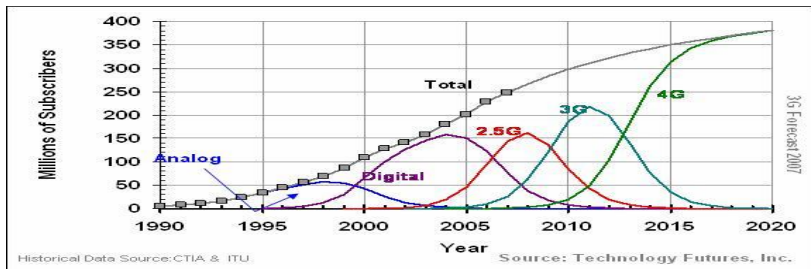
Mobile Usage by Technology



Generation	Technology	Maximum Download Speed	Typical Download Speed
2G	GPRS	0.1Mbit/s	<0.1Mbit/s
	EDGE	0.3Mbit/s	0.1Mbit/s
3G	3G (Basic)	0.3Mbit/s	0.1Mbit/s
	HSPA	7.2Mbit/s	1.5Mbit/s
	HSPA+	21Mbit/s	4Mbit/s
	DC-HSPA+	42Mbit/s	8Mbit/s
4G	LTE	100Mbit/s	15Mbit/s

DIFFUSION OF MOBILE TECHNOLOGIES

4
0



<http://kenstechtips.com/index.php/download-speeds-2g-3g-and-4g-actual-meaning>



Video Banking



Immitates face-to-face customer relationship experience.

Secure

-Attackers leave more evidence than ip adress and time stamp

AML Compliant

-A circular from German Federal Financial Supervisory Authority (BAFIN) dated 2014 suggests that if a banks employee and a customer is communicating through video transmission, the communication can be assumed a face-to-face session.

Compatible with biometric verification systems



MIA – Mobile Interactive Assistant

- **1.3 M customers** interacted with MIA
12 M times
- Received over **8,401** marriage proposals



Functions



Transactions

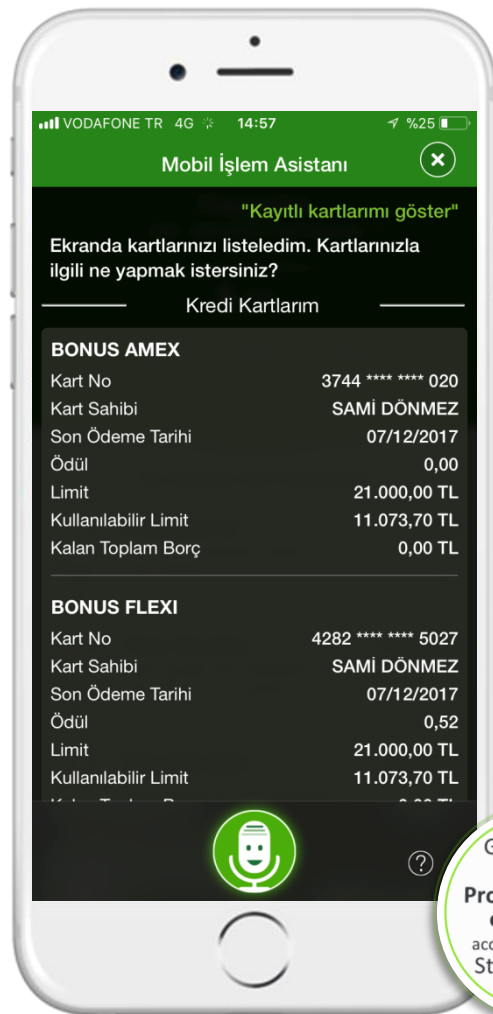


Inquiries



Navigation

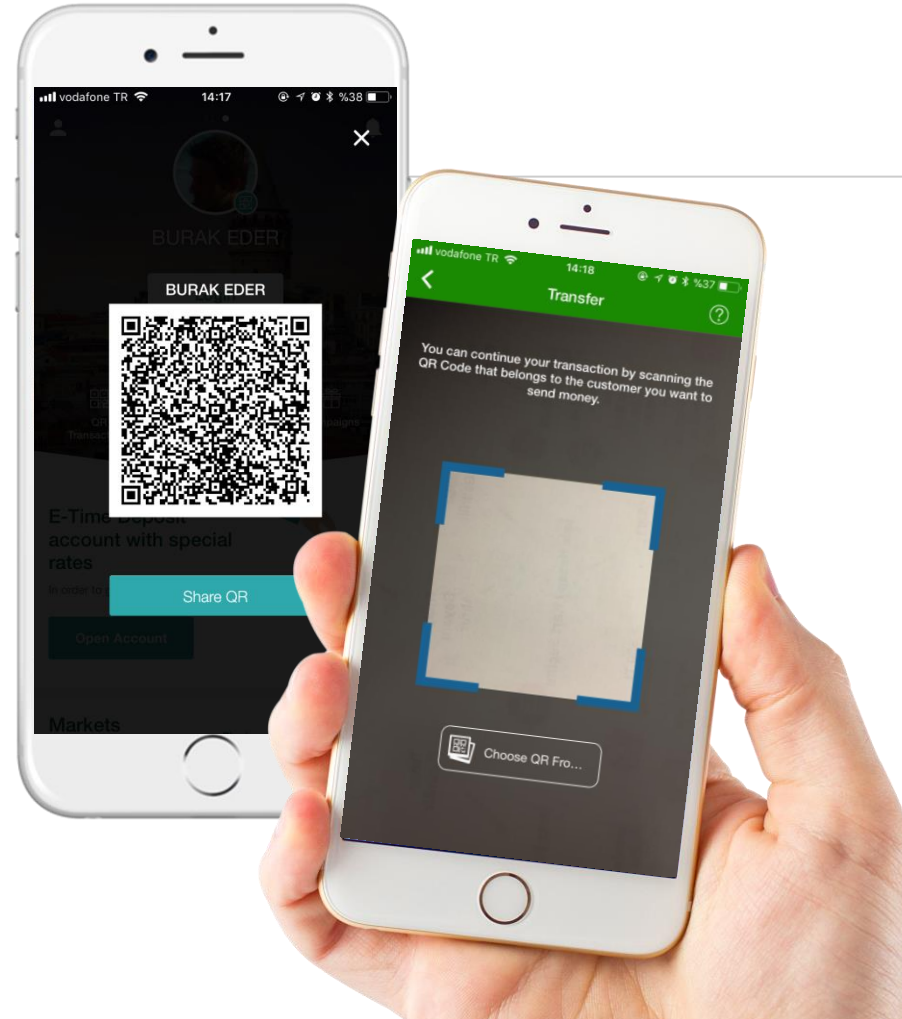
- *Eating and drinking expenses I made from my credit card in December*
- *Pay hundred Turkish Liras to my credit card*
- *Would you marry me?*





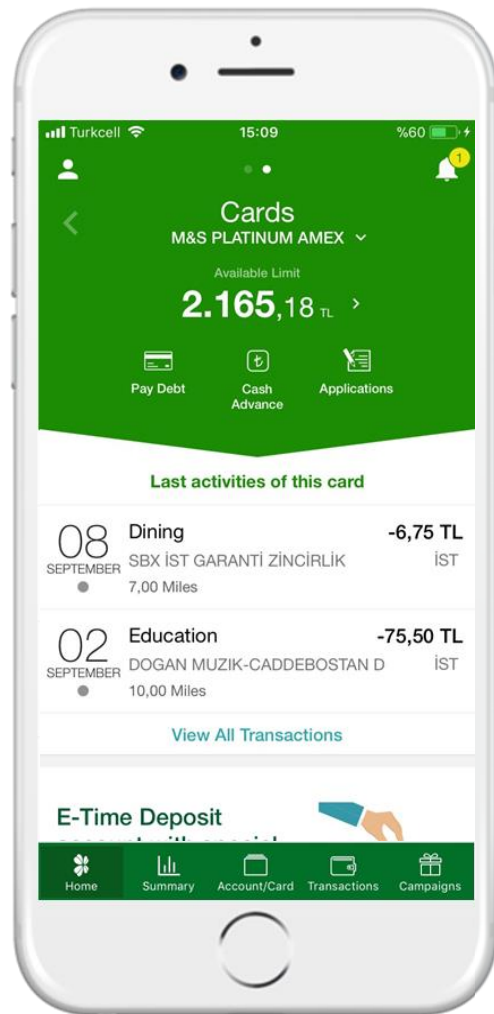
QR Money Transfer

- Easy & secure way to share account details via QR Code
- Fast money transfer without login



A New Look

- **Quick** balance view
- **Smart** and **one-click** action buttons
- **Personalized** offers
- Quick view of latest transactions

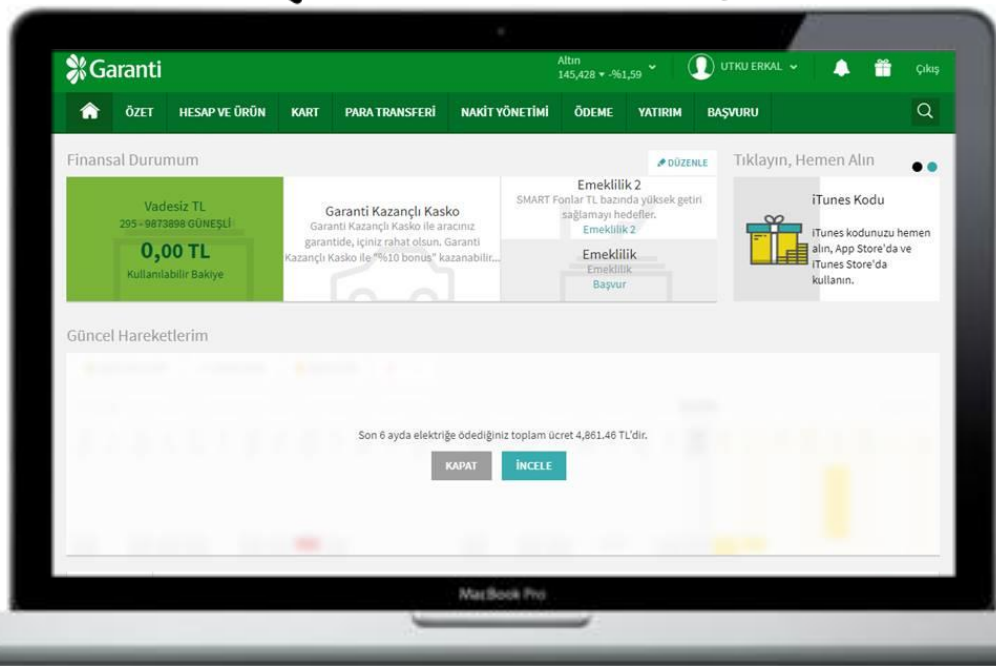


Financial Insight

- Insights regularly placed on dashboard
- Direct linking to PFM tool

You've spent
300 TL on fuel
oil this month.

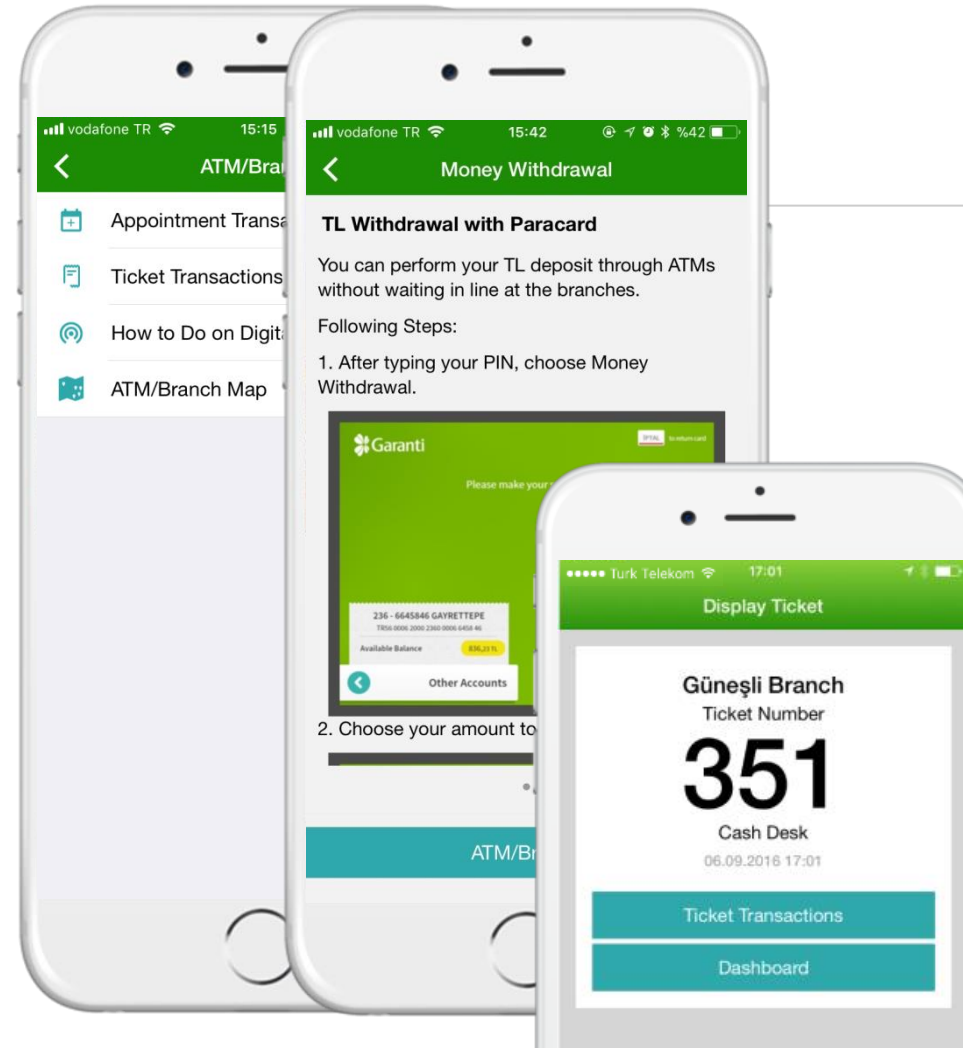
You've received
500 TL to your
accounts this
month.





Mobile Appointment System

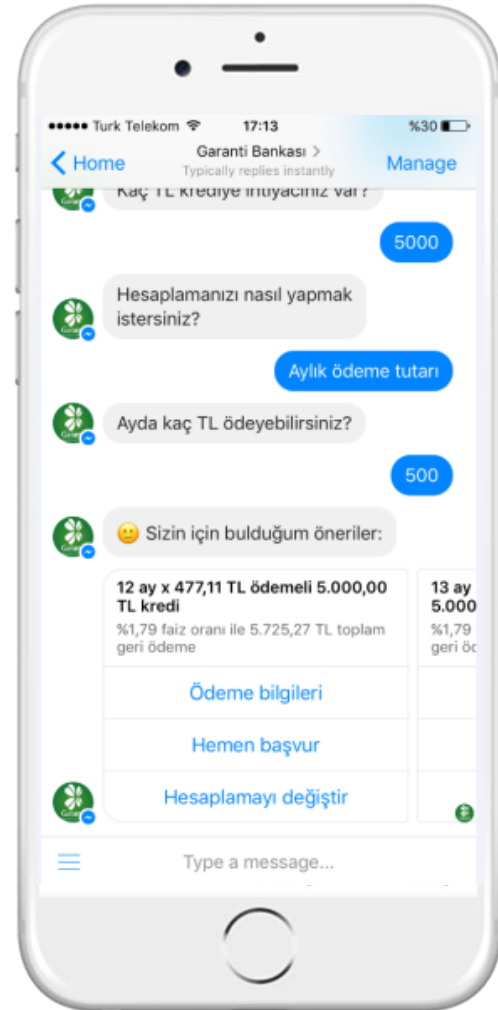
- Balance the branch density between time intervals and interbranches
- Direction to the digital channels via how – to pages



Garanti Messenger (BOT)

- Loan calculation and offer
- Loan application
- Market info
- Nearby ATMs/Branches

Make every touchpoint an opportunity





Distant Contracts on Financial Services

Regulation regarding Distant Contracts on Financial services is effective since 2015 Q1

Regulation enabled Turkish Financial Sector to design end-to-end digital products. Such that

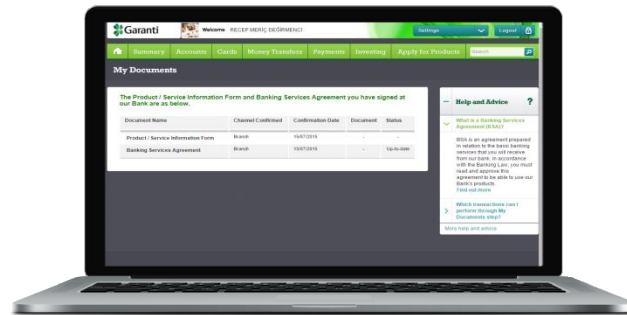
- Online loans
- Online insurance
- Investment products

Requirements

Pre-Contract information must be provided

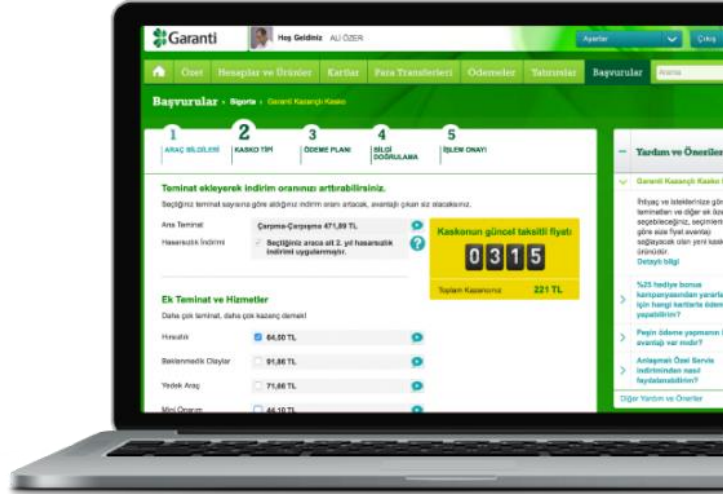
- Information may be served publicly on web page,
- Whole contract must be readable and available at the time of agreement,
- Contract must be understandable and explicit

A copy of the contract must be presented to customer in digital medium
Customers have right to withdrawal



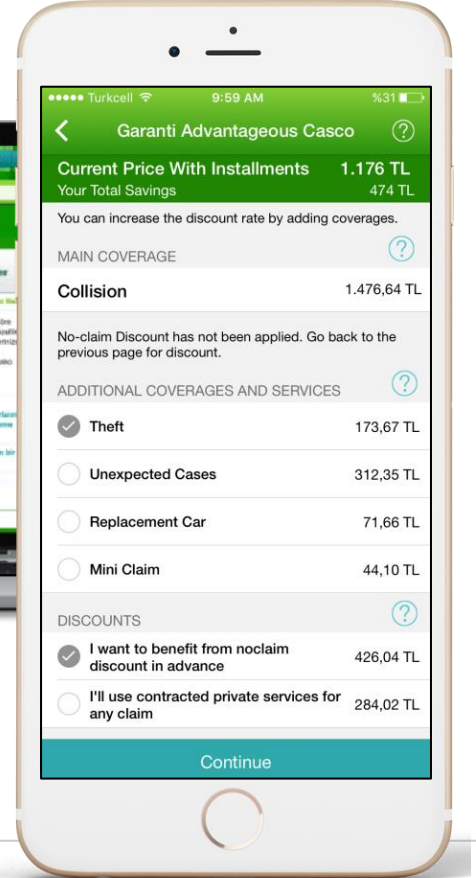
30 %

Digital Casco



2 %

Entirely Digital Products



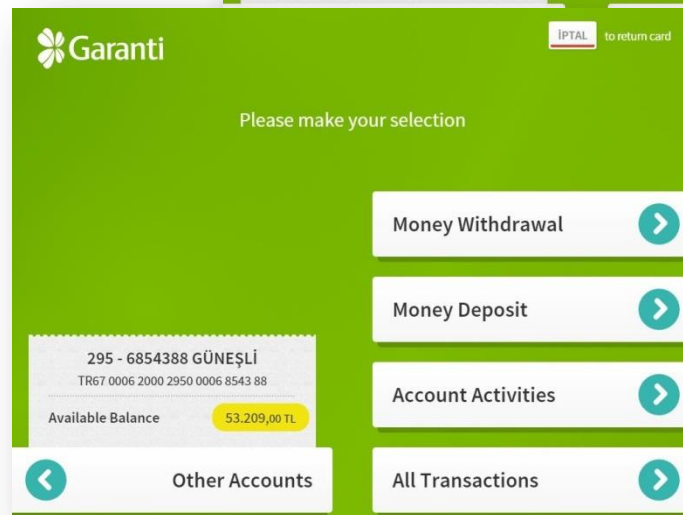
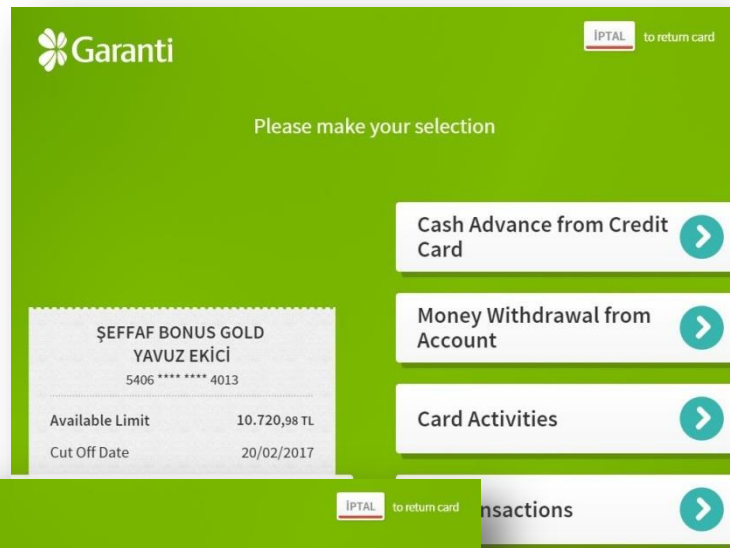


Redesigning a Ten-year-old Experience: ATM Redesign Project



Dynamic ATM dashboard

- Details Shown Changes After Login Relatively to the Card Type
- Quick Access Transactions Changes over Customer's Products





Instant & Smart Error Fields

- Instant & Smart Error Fields due to Cassette Capacity and Customer Limits

Money Withdrawal IPTAL to go back

1 2

Select the amount you want to withdraw

We can give a maximum of 200,00 TL at this time from this Paramatik.

295 - 6827611 GÜNEŞLİ	
Avail. Balance	17,00 TL
With Overdraft	1.517,00 TL

200 TL >

< 20 TL 500 TL >

Withdraw Payable Amount >

Enter a different amount >

Money Withdrawal

1 2

Enter the amount you want to withdraw

295 - 6827611 GÜNEŞLİ	
Avail. Balance	17,00 TL
With Overdraft	1.517,00 TL

20 TL

50 TL

200 TL

We can give a maximum of 200,00 TL at this time from this Paramatik.

to exit IPTAL

to correct SİL

to continue GİRİŞ

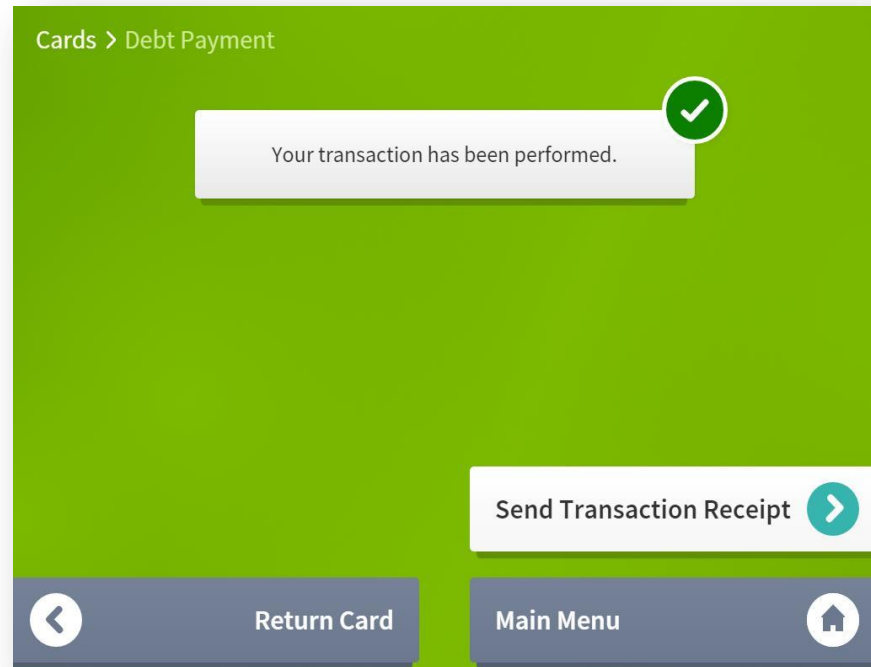
The minimum amount should be at least 10 TL.

00 , 00 TL >



Transaction Receipt Sending via E-mail

- E-receipt replaces traditional ATM receipts
- Environmental friendly



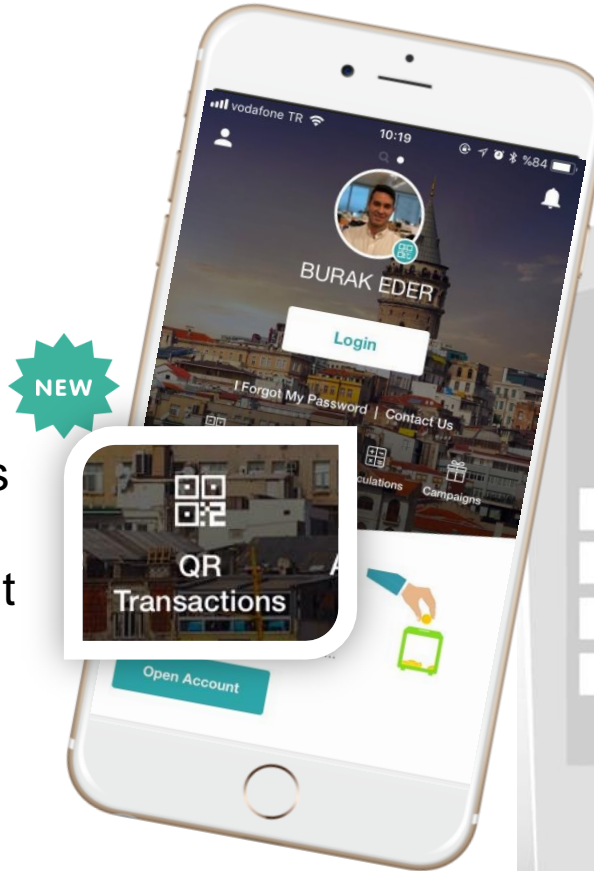


New Era on Cash Transactions: Mobile Based QR transactions

QR Transactions

2014

- **+1000K Monthly QR Withdrawals**
- **+100K Monthly QR Deposits**
- Money withdrawal and deposit with QR
- **7 seconds** to withdraw





“

Garanti Cep ile
“QR KOD” Kullanılarak
Nasıl Para Çekilir
Veya Yatırılır?

”

- How to withdraw or deposit money
using QR Code with Garanti Mobile?



0:02 / 0:10

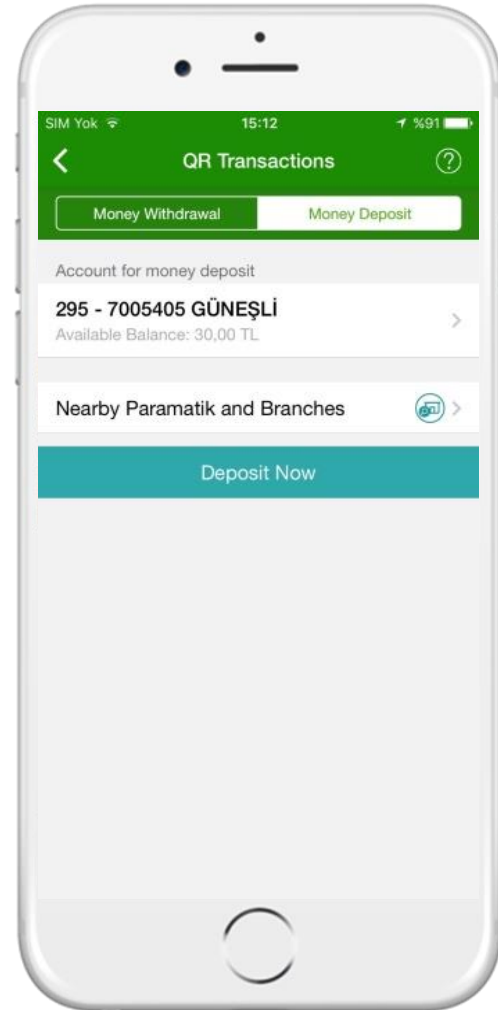
720p





QR and Illegal Bet Usage Experience

- Qr photo time limit,
- Location control,
- Root / Jailbreak detection control





Open Innovation Approach

Our Open Innovation Approach



- Agile Projects
- UX – UI Workshops
- Intrapreneurship
- Know-how exchange w/ BBVA



- GarantiPartners Accelerator Prog.
- BBVA Open Talent
- GP Entrepr. Center
- Hackathon
- Women Entrepre. Competition
- Events, Meet-ups
- Reports



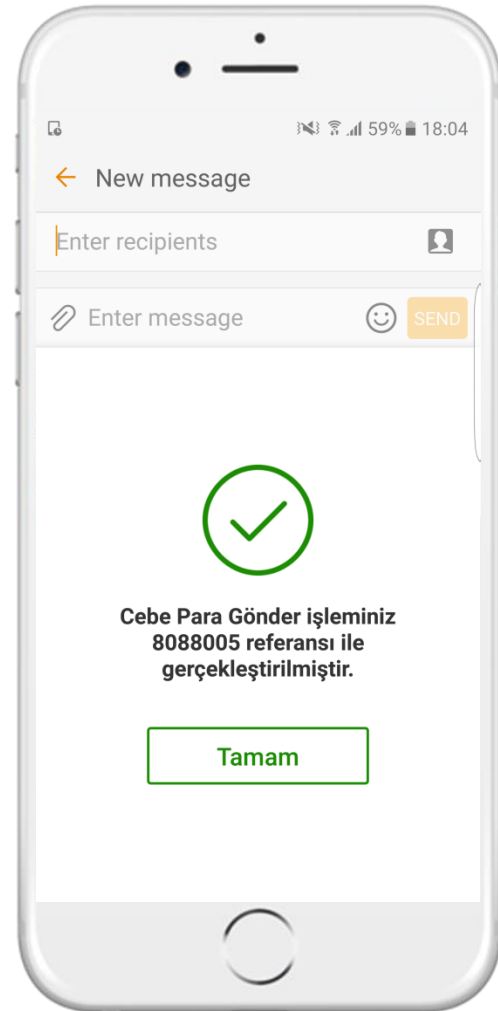
- API Store
- Access to Global (VC, Corporates, Accelerators)
- Yol Haritam
- Partnership



Garanti Keypad

Send money
without leaving whatsapp!

Make every touchpoint an
opportunity





Garanti API Market



Thanks!

questions?



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