Geographic Infrastructure and Analysis in CRM

Aren HADDELER
Vice President

CRM Marketing Data Mining and Optimization Department
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II. About Akbank

III. CRM Capabilities and Transformation

IV. CRM Analytic Architecture

V. Geocoding

VI. CRM Geocoding Infrastructure
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   - Maps.Akbank
   - Optimization
   - Mobile Applications

VII. Roadmap
Turkey - Growth potential

- 18th largest economy in the world and 7th largest in Europe (incl. Russia) with US$ 720 bio GDP
- Robust long term growth potential fuelled by favourable demographics
- Easy access to 1.5 billion customers in Europe, Eurasia, the Middle East and North Africa
- Sustainable and relatively strong GDP growth of 3.6% between 2002 and 2014
Turkey presents a challenging and exciting environment for banking

Economical Condition

- Scale advantage (US$ 720 bio, 79 mio population)
- Rising prosperity (GDP/Capita tripled in less than a decade)
- Rising wealth of middle class

Populational Overview

- Young population, 50% under the age of 29
- 41 mio broadband internet subscribers
- 58,2 mio credit card users in 2015, up from 17 million in 2002
- 73,2 mio mobile phone subscribers
- 37 mio mobile internet users
- 181,1 mio airline passengers
Strong Growth in Last Decade

- Total Assets (In constant prices based on 2001)
- Loans and Receivables (In constant prices based on 2001)
- Deposits (In constant prices based on 2001)
- Number of Branches and Employees (Thousand)

Legend:
- Number of Branches
- Number of Employees

[Graphs showing growth in assets, loans, deposits, and number of branches and employees over the last decade.]
• Relative low penetration of most banking products implies opportunities
  • 48 mio population unbanked&semibanked
  • Household debt/GDP: 21%
  • Mortgage/GDP: 7%
  • Pension funds/GDP: 2.5%

• ~6 trillion TL banking assets by 2023 (in line with Turkey becoming 10th largest economy)

Financial Intermediation Indicators  

<table>
<thead>
<tr>
<th></th>
<th>EU 27</th>
<th>Turkey*</th>
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<tbody>
<tr>
<td>Assets</td>
<td>354</td>
<td>97</td>
</tr>
<tr>
<td>Deposits</td>
<td>130</td>
<td>54</td>
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<tr>
<td>Loans</td>
<td>189</td>
<td>56</td>
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Banking Potential (Mio)

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2015</th>
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<tbody>
<tr>
<td>Total</td>
<td>54</td>
<td>56</td>
</tr>
<tr>
<td>Banked</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Semi banked</td>
<td>25</td>
<td>28</td>
</tr>
<tr>
<td>Unbanked</td>
<td>19</td>
<td>16</td>
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</tbody>
</table>

* including participation banks,  
Source: BRSA, CBRT
Akbank is Turkey’s Leading Bank

**Market Share Indicators**

- Wealth Management: 11%
- Lending Business (Consumer): 10%
- Lending Business (Commercial): 9%
- Exports: 24%
- Imports: 11%
- Money Transfer & Checks: 11%
- Tax & Insurance: 13%

- Assets: $80,3 bio
- Loans: $48,5 bio
- Deposits: $47,5 bio
- Net Profit: $1,098 bio
- ROE: 15%
- Customers: 14.6 M
- Personnel: 13,9 K
- Branch: 897(domestic+abroad)
• 897 branches throughout Turkey
Cross-sell ratio for average customer

<table>
<thead>
<tr>
<th>Year</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
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<tbody>
<tr>
<td>Value</td>
<td>3.00</td>
<td>3.15</td>
<td>3.24</td>
<td>3.30</td>
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Loan + Deposits / Branch (TL mio)

<table>
<thead>
<tr>
<th>Year</th>
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<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>167</td>
<td>190</td>
<td>234</td>
<td>261</td>
<td>336</td>
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</table>

Commission / Branch (TL mio)

<table>
<thead>
<tr>
<th>Year</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
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</thead>
<tbody>
<tr>
<td>Value</td>
<td>1.8</td>
<td>2.2</td>
<td>2.3</td>
<td>2.5</td>
<td>2.8</td>
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</table>

Revenue / Branch (TL mio)

<table>
<thead>
<tr>
<th>Year</th>
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<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
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<tbody>
<tr>
<td>Value</td>
<td>6.1</td>
<td>7.8</td>
<td>9.2</td>
<td>9.7</td>
<td>11.4</td>
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* Based on product bundles with conservative approach
CRM Division

Sales effectiveness

2005

Predecessor Activities

Data Mining
Database Marketing
Campaign Management

2008

Design

Implementation of Chordiant Technology

2009

Application

Pilot Programs, Training & Adaptation

2010

Adaptation

New Generation Salesforce

2011

Customer satisfaction

Customer Focused

Customer Sensitive

Offer accuracy

2012 & 2013

Optimization

Add-on business models and enhanced infrastructure

2015+

HPA

High Performance Analytics & Big Data

Experience Management

Event Optimization

Our Marketing Challenge

More than 300 products
8 Channels
~15 million customers
~5.5 billion transactions/year

Akbank Sales & Marketing Automation Project

2011

2012 & 2013

Optimized campaigns and offers

2015+

High Performance Analytics & Big Data

2005-2009

More than 300 products
8 Channels
~15 million customers
~5.5 billion transactions/year
Analytical CRM Architecture
Improved CRM capability

**Integrated customer management**
- Customized offers in all channels
- Real time marketing & Optimization
- Marketing Automation
  - %85 Customer Retention Rate
  - 3,000 k+ Targeted Product Sales
  - 100+ Predictive models
  - 300+ Real time offer
- Customized Pricing Analytics

**Increased branch sales effectiveness**
- SME branch network re-structured
- Standardized sales approach
- Regional sales strategies
- Every branch personnel as a sales person
- Enhanced monitoring and reporting

- 2011 Gartner CRM Excellence - Integrated Marketing Excellence Award
- 2012 Retail Banker International (RBI) - Best Use of CRM in Marketing
- 2012 Stevie International Business Awards – CRM-Marketing Department of the Year (Gold Stevie Award)
- 2013 Gartner CRM Excellence – Customer Analytics Excellence Award
- 2014 Gartner CRM Excellence – Sales Effectiveness Excellence Award
CRM Geocoding
Ancient Times vs Modern Times

- They don’t know where they are going
- They don’t need any services
- They just need food and location to live

- They know where they are going
- They need lots of services
- They just need right offer at the right time and at the right location
What is Geocoding?

Geocoding

Geocoding is a process about converting a textual address data to numerical geographical data as latitude and longitude.

Ex: “Sabancı Center, İstanbul, Türkiye” is geocoded and resolve geographically as 41,085416(lat) – 29,009185(lon)
Geocode Data Integration Points

Akbank Adress Data Set

- Branch
- ATM-BTM
- Customer
- POS

Akbank Internal Data Source

- Real Time Data
- Data Warehouse

External Data Source

- Navteq
- Revenue Administration
- Interbank Card Center
- Turkey Statistics Institution
- Banks Association of Turkey
- Real Estate Agencies
- Social Media

Geocoding Engine

Coordinate (X,Y) Data

Mapping Infrastructure

- Geographic Analytics
- Maps.akbank End User Tool
- Optimization Route, Service, Agenda
- ATOM Internal CRM Application
- Web/Mobile Applications

CRM Division
Geographic database created with all address data in our system
- Customer addresses (55mio)
- Teller machine addresses (4k)
- Branch addresses (1.1k)
- POS machine addresses (648k)

Data enrichment with 3rd party sources
- POI (Navteq-980k)
- Rental and Sale Prices (GIB&Reidin-Whole country)
- Social Data (Whole country)
- Demographic Data (TUIK-Whole country)
- Financial Benchmark Data (TBB&BKM-Whole country)

ArcGIS:
- Visualization
- Prediction

SAS:
- Data Preparation
- Segmentation
- Prediction

Qlikview:
- Visualization and Reporting

Geographic Scores
- Customer Living Area Metrics
- Density Index
- Gravity Index
- Street Segmentation
- District Classification
- Geographic Potential Calculation
Maps.akbank is a geographical web based reporting and analytical tool. Aim is to create new strategies for the field.

Main functions:

• Basic analysis based on historical customer and location data from databases.
• Service (ATMs and Branches) network analysis
• Opening/closing branch and ATM simulations
• Optimal route calculations
• External data can be imported, geocoded and analyzed.
• Exporting maps and data

This tool provides instant visualized reports on map for marketing, sales department and strategy divisions.
**Route optimization**

- Distributing checks and bill payables to right branch
- Forwarding customers from an disorderd ATM to closest one
- Planning Customer Visitations in a correct order and timeline

**Service Improvement**

- Branch and ATM Locations
  - Finding best place for new ones
  - Hinterland analysis and identifying staff requirements
- Customer Branch Assignments
  - Deciding the branch for better service for new customers
  - Creating inactive customer pools and matching with branches due to their living-area
ATOM is our bank’s CRM application for field users. Our region and branch staff use it for everyday sales activities and getting know their customer and portfolios better.

- There are many functions such as Customer 360 view, product history/usage/profitability, contact history, offer summary, benchmarks, NBA, Portfolio summary and details, querying portfolios, portfolio performances.
- With geocode engagement, portfolios can be filtered and results are visualized on maps with shortest route suggestions.
Looking for a branch and ATM in a specific location and visualizing it on the map

Finding the closest branch or ATM due to the user's current location

Monitoring customers on the map by their activities, segment, branch, region, and portfolio manager

CRM Division
Geocoding Roadmap

We improve our systems and infrastructure to make geographic analytics better and faster.

2014 - 2015
- Hinterland and Customer Coverage Optimization
- Web and Mobile Branch Integration
- Mobile Application Integration
- CRM Application Integration
- New Customer Acquisition Actions
- POS and Cash Carrier Tracing Systems

2016
- Maps.akbank
- Branch and ATM Allocation
- Customer Branch Assignments

2017+
- Customer spending hinterland Analysis
- Geographic Campaign
- Spatial Event Base Actions
- 3 New Mobile Applications
- 3-D Mapping
- New Branch Service Modelling
- More Analytic Indexes

Our Geocoding Vision
Realtime visualization
Realtime analytics
For every single customer

CRM Division
Thank You

Aren HADDELER
Vice President

aren.haddeler@akbank.com
Back Up
Turkey presents a challenging and exciting environment for banking.

- Scale advantage (US$ 800 bio, 77.7 mio population)
- Rising prosperity (GDP/Capita tripled in less than a decade)
- Rising wealth of middle class
- Young population, 50% under the age of 31
- 46.3 mio broadband internet subscribers
- 58.2 mio credit card users in 2015, up from 17 million in 2002
- 73.2 mio mobile phone subscribers
- 22.7 mio mobile internet users
- 181.1 mio airline passengers
Significant market share

The market capitalization is 10 bn USD*

* As of May 2016

ISE 100
Market Cap.
%93.8

Akbank
%6.2

* As of May 2016