LocationBox
Deploying Nationwide, Scalable LBS Solutions at Turkey's National Credit Registry

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Infotech
Agenda

• About Infotech
• About LocationBox
• KKB Implementation
• Avea Implementation
• M2M Implementation
Infotech

• Strategic Partnerships

• Oracle: certified partner in spatial technologies in EMEA region
LocationBox

- Location Intelligence Platform
Services

• Mapping
• Geocoding / Reverse Geocoding
• Routing
• Traffic
• POI Search / Display
• Address Services
• Campaigns, Social Events
• Map based reporting / Heat Maps / Spatial Analysis
• User Data (Point, Line, Polygon)
• User Defined POI Attributes
KKB (TURKISH CREDIT REGISTRY OFFICE) IMPLEMENTATION
Customer

- The Only Credit Registry Office in Turkey
- Supports, 145 Members 39 Banks, 13 Consumer Finance etc.
- Supports Business Functions, Departments, Constituents

Challenges

- Nationwide address cleanup and geocoding (700 M records)
- Map based statistical data display
- Different access levels for different banks
- Detailed reporting: Standard, trend, benchmark
- Spatial, Datawarehouse and OLTP Requirement

Solutions

- Oracle Database 11g Enterprise Edition
  - Spatial Option with GeoRaster, Network Data Model
  - Partitioning
- Oracle Fusion Middleware
  - MapViewer 11.1.1.7
- Oracle Business Intelligence Enterprise Edition
- Oracle Exadata

Results

- Single System for Spatial, Datawarehouse, OLTP
  - Lower license and hardware costs
  - Easier management
  - Single system with no extra integration
  - Consolidation
  - OLTP and Reporting
  - Performance
    - 50x faster transaction processing
    - 100x faster reports
  - Storage: 5x compression
  - Fast spatial operations
  - 40 M Geocodes / day
KKB Introduction
About GeoMIS Project

• Geocoding and Address Clean-up for entire country’s credit transactions
  – More than 700,000,000 Records

• Map based statistical data display
  – Including micro regions

• Accessible to all member banks

• Map based reporting for
  – Standard reports
  – Trend Reports
  – Benchmark Reports
Components

Member 1
Member 2
Member N
Credit Records

Geocoding

Maps & Other Spatial Content

Map Setup
Applications
Business Benefits

- Marketing & Sales Departments
- Credit Allocation Departments
- Credit Monitoring Departments
- Credit Collections Departments
- CRM Departments
Second Phase

- Commercial Credits Universe
- Collections Universe
- Household Aggregation Universe
- Credits Cards Expenses Universe
- Credit Card Merchants Monitoring
- ATM/Branch Location Analysis
- Whitepages Integration
AVEA IMPLEMENTATION
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<th>Customer</th>
<th>Challenges</th>
<th>Solutions</th>
<th>Results</th>
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<tr>
<td>• The sole GSM 1800 mobile operator of Turkey,</td>
<td>• Many applications using maps, all with different maps and interfaces</td>
<td>• Oracle Database 11g Enterprise Edition</td>
<td>• Consolidation:</td>
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<td>• Founded in 2004. Being driven by a spirit of innovation, Avea, the</td>
<td>• BI integration requirement</td>
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<td>• Oracle Spatial</td>
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<td>youngest operator of Turkey</td>
<td>• Different interfaces: Web, SMS, MMS, Mobile applications</td>
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<td>• MapViewer</td>
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<td>• Has a nationwide customer base of 14.5 million as of the last quarter</td>
<td>• Internal / External users</td>
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<td>• BI</td>
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<td>of 2013.</td>
<td>• High performance requirements</td>
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<td>• LocationBox</td>
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<td>Avea</td>
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Asset Tracking

Asset Display on Maps
Work Order Dispatch
CRM Integration

Access to Customer Locations
Coverage Analysis

Adress Search and Coverage Quality Analysis
INFOMOBIL – M2M IMPLEMENTATION
Vehicle Tracking & Fleet Management

• Cloud based M2M Platform
  – 50,000+ Mobiles
  – 800+ Companies
  – 10,000+ Users

• Services
  – Tracking
  – Telemetry
  – Reporting
  – Alarms & Notifications
  – Routing
  – Driver Scoring
  – Web, Mobile, SMS, Social Media Interfaces
  – Various Tracking Device Options

• Turkcell Best M2M Solution Award
Vehicle Tracking & Fleet Management
Spatial Transactions

- 30+ million messages / day
  ~2000 Tps

- Address: Country, Province, District, Neighborhood, ...
- Road segment: Speed limit violations
- Nearest POI: Distance, heading
- Region, territory, service area, ..., Distance traveled in the region
- Nearest company location: Distance, checkins, checkouts, approaching
- Route violations

- 10+ billion rows / year
  Partitioned
OTHER SPATIAL / MAPVIEWER USE CASES
Location Based Services

- Ekipmobil - Tracking and Workforce Management
  - 70,000+ Mobiles
  - 8,000 Companies
  - 10,000+ Users
  - GSM/GPS Positioning
  - 10 million transactions / day
- Nearest POI
- Traffic
- Weather
- Agriculture
- Web/Mobile/SMS/MMS interfaces
GIS - Konya Municipality

- Consolidated GIS Platform
  - 2,000,000 population, 6th in Turkey
  - 39,000 km², largest city in area, 31 districts
  - 1000+ GIS users (%90 read only, %10 editing)

- Diverse Data Types
  - Vector, Raster, Oblique Imagery, 3D Building Models

- Applications
  - 2D City Guide Application (web)
  - 3D City Guide Application (web, mobile)
  - GIS applications (read only + map editing)
  - BI Integration

- Replacement of MapInfo MapXtreme, GeoServer, OpenLayers
LocationBox Applications

- Location based risk management
- Policy locations
- Editing high risk zones
  - Earthquake, Fire, Flood, Storm, Terrorism
- Decision support system
  - Risk scoring
- Reporting by spatial analysis
  - PML Reports
- LocationBox on Exadata
LocationBox Applications

- **Parcel Delivery**
  - 900 Branches
  - 12 million deliveries / day

- **Operational**
  - Editing service areas
  - Geocoding addresses
  - Location based delivery destination

- **Analysis**
  - Map based reporting
  - Polygon analysis
  - BI Integration
LocationBox Applications

- Branch/ATM Locations
- Competition Analysis
- Service Areas
- Reporting
  - Branch / ATM Scoring
  - Market Shares
  - Reporting by spatial analysis
- Branch, ATM locator on public web site
LocationBox Applications

- Site Selection
- Competition Analysis
  - Region based
  - Route based
- Sales Planning
- Performance Scoring
- Market Shares
- Map based reporting
LocationBox Applications

- Restaurant Chain
- Branch, Delivery Locations
- Service Areas
- Violations
- Competition Analysis
- Site Selection
- Potential Analysis
- Polygon Analysis
LocationBox Applications

- Private Schools
  - 90 Campuses
  - 55,000 Students
- Site Selection
- Campus, Student Locations
- Service Areas
- Distance Zones
- Potential Analysis
- Reporting by Spatial Analysis
Infrastructure
Why Spatial and MapViewer?

- **Design Philosophy**
  - Natively store spatial data in database
  - Analyze and visualize by using SQL
- **Standard Components**
  - Oracle Database Server & Oracle WebLogic Server
- **Performance**
  - Fast, Robust
  - High Number of Transactions
- **Functional Requirements**
  - Capable, Complete
  - Spatial Data Types, Functions & Operators, Data Size, …
- **Non Functional Requirements**
  - Administration, Backup, Restore, Disaster Recovery, Scalability, Security, Performance Tuning, …
- **BI Integration**
Why Exadata?

- Database Consolidation
- Single Platform for Mixed Workloads
  - OLTP & Reporting
- Performance
  - 5.2x faster transaction processing
  - 100x faster reports
- Storage
  - 5x compression
- Easy Scalability
- Easy Manageability
- Fast Spatial Operations
Oracle Business Intelligence Warehousing and Analytics Summit

Oracle HQ, Conference Center
Redwood City, California