Project Plan
Visualizing Brand Loyalty
The Capstone Experience

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Functional Specifications

• Cross platform application for both iOS and Android tablets
• Allow OEM loyalty managers to see brand, segment, and model loyalty data in specific markets
• Display loyalty/conquest/defector data in a meaningful way
• Display useful KPIs
• Visualize market trends
• Provides intelligent alerts on market trends
Design Specifications

• User authentication
• Display KPIs for different markets
• Chart loyalty/conquest/defector data in a meaningful way
• Allow users to change criteria (brands, models, regions, etc.)
• Send intelligent alerts
Screen Mockup: Login Page

![Login Page Mockup]
Screen Mockup: Dashboard
Screen Mockup: Chart Views

- Ratio View: Conquest: Defectors (2.17)
- Trend View: Loyalty over time
- Competitor View: Loyalty count by Brand (Ford, GM, Chrysler, Chevy)
- Internal View: Loyalty count by Segment (Luxury, Midsize, Compact, Sedan, Truck)
Technical Specifications

- Cross-platform application based on the Ionic/Cordova framework
- PHP backend that communicates with Microsoft SQL Server 2012
- D3 library for maps and charts
- Ionic push notification services
System Architecture

Server-Side Architecture
Microsoft SQL Server 2012

Client-Side Tablet App
Front End UI
Ionic HTML5 Interface

Push Notification System
System Components

• Hardware Platforms
  ▪ iPad tablets running iOS 6+
  ▪ Android tablets running Android 4.0+
  ▪ Microsoft Server 2008

• Software Platforms / Technologies
  ▪ Ionic/Cordova framework
  ▪ D3 library
  ▪ PhpStorm
  ▪ SQL Server 2012
Testing

• Front End
  ▪ Testing on iPad and Android tablets
  ▪ Browser development tools
  ▪ Karma and Jasmine unit testing for AngularJS

• Back End
  ▪ PHP unit testing
Risks

• Accessing Server Data
  ▪ Need to be able to quickly communicate with the server and process the data
  ▪ Pre-calculated values for frequently accessed data

• Cross-Platform Development
  ▪ Performance of each cross-platform framework
  ▪ Research, rapid prototype, and consult with Urban Science

• Visualizing Data
  ▪ Misrepresenting data to the user or failing to display it at all
  ▪ Check-ins with Urban Science to confirm the data is not being misrepresented to end users

• Map Integration
  ▪ Time consuming to make 3D maps and map performance
  ▪ Use 2D maps as a backup