

MICHIGAN STATE

U N I V E R S I T Y

Project Plan

Mobile Location-Based Product Promotion

The Capstone Experience

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Fall 2014



*From Students...
...to Professionals*

Project Overview

- iOS mobile app for customers
- Admin website for employees
- Proof of concept



Functional Specifications

- Mobile Application for Pushing Sales
 - Opt-in
 - Location-based
 - Track and store impressions
 - Link impressions to sales through mPerks
- Web Administrative Interface
 - Manage iBeacons
 - Customer analytics

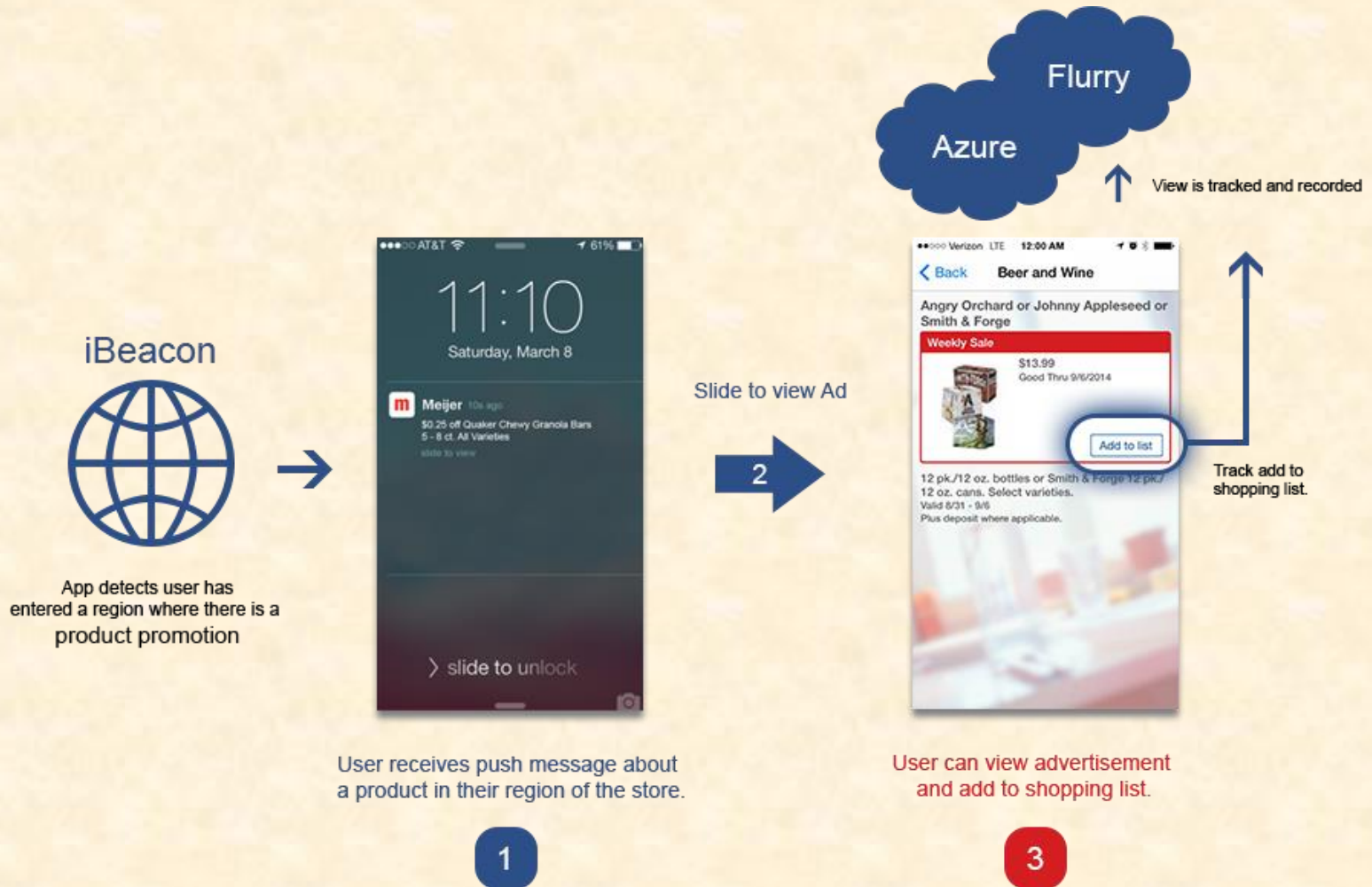


Design Specifications

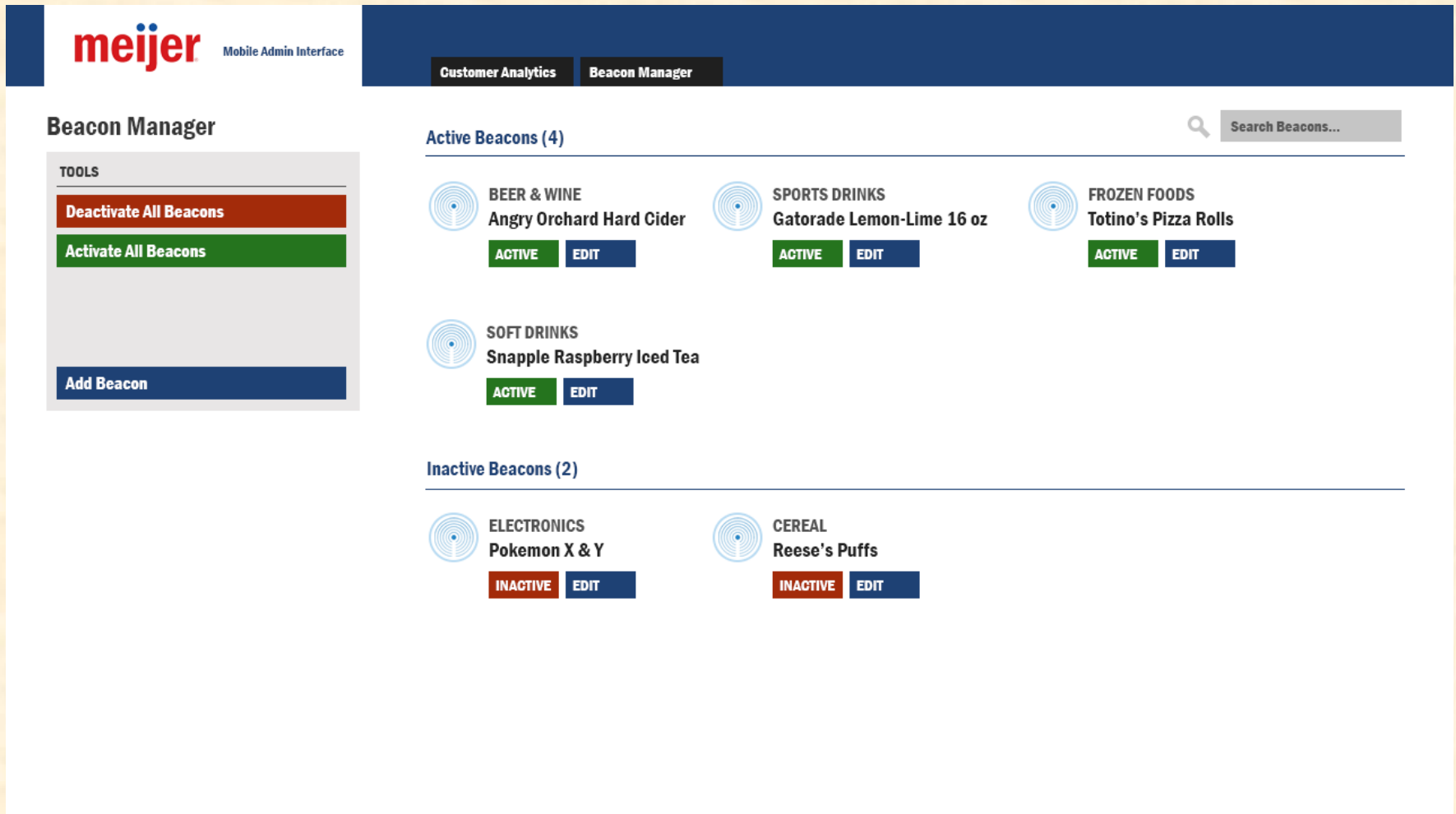
- Mobile Application
 - Receive signals from iBeacon
 - Show notification
 - Swipe right for advertisement
- Admin Web Interface
 - Add, activate, and deactivate beacons
 - Change beacon product promotions
 - Graphs and tables to display customer events



Screen Mockup: App Experience



Screen Mockup: Beacon Manager



The mockup shows a mobile admin interface for Meijer. At the top left is the Meijer logo and 'Mobile Admin Interface'. A dark blue navigation bar contains 'Customer Analytics' and 'Beacon Manager'. The main content area is titled 'Beacon Manager' and features a search bar. On the left is a 'TOOLS' sidebar with buttons for 'Deactivate All Beacons', 'Activate All Beacons', and 'Add Beacon'. The main area is divided into 'Active Beacons (4)' and 'Inactive Beacons (2)'. Each beacon card includes a category, product name, and 'ACTIVE' or 'INACTIVE' status with an 'EDIT' button.

meijer Mobile Admin Interface

Customer Analytics Beacon Manager

Beacon Manager

TOOLS

- Deactivate All Beacons
- Activate All Beacons
- Add Beacon

Active Beacons (4)

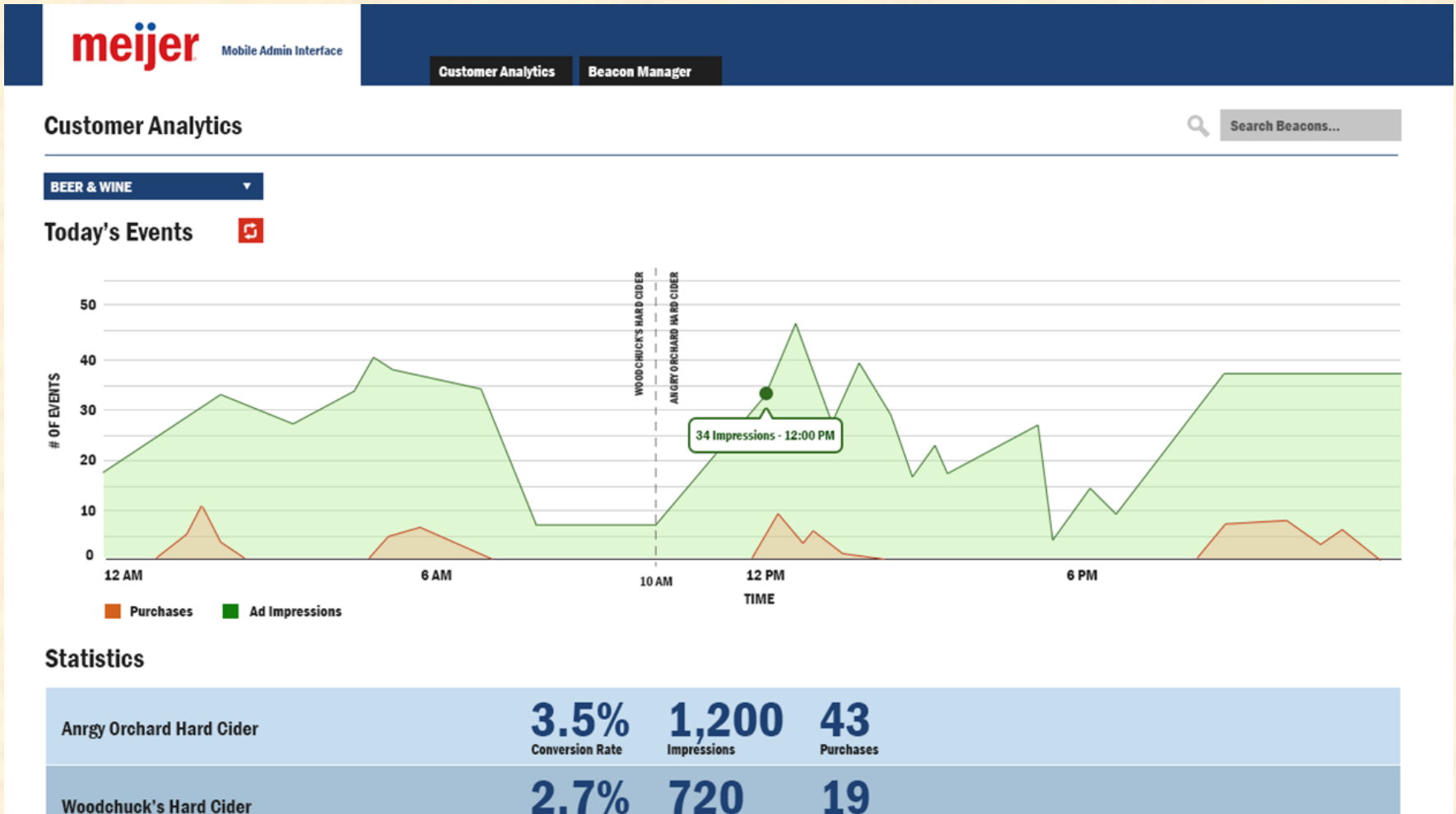
- BEER & WINE**
Angry Orchard Hard Cider
ACTIVE EDIT
- SPORTS DRINKS**
Gatorade Lemon-Lime 16 oz
ACTIVE EDIT
- FROZEN FOODS**
Totino's Pizza Rolls
ACTIVE EDIT
- SOFT DRINKS**
Snapple Raspberry Iced Tea
ACTIVE EDIT

Inactive Beacons (2)

- ELECTRONICS**
Pokemon X & Y
INACTIVE EDIT
- CEREAL**
Reese's Puffs
INACTIVE EDIT



Screen Mockup: Customer Analytics



Technical Specifications

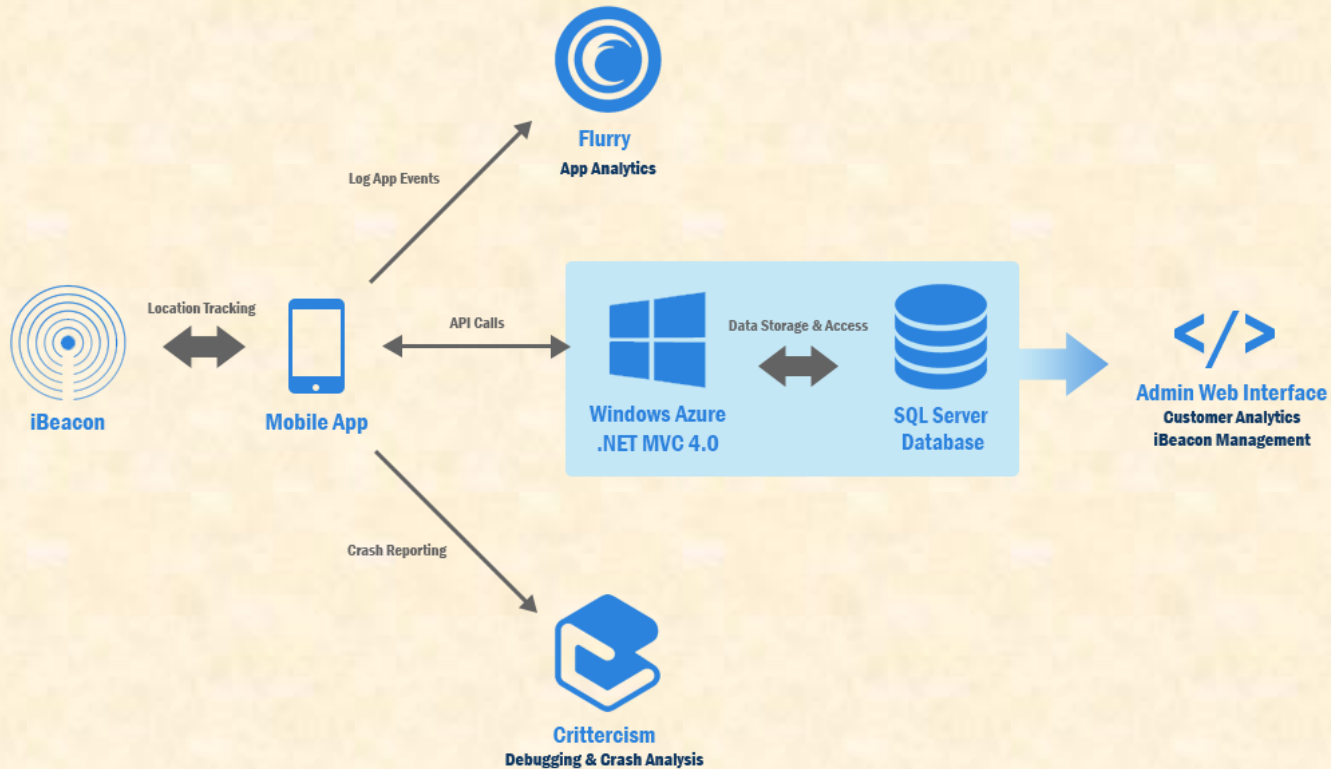
- Mobile application receives iBeacon broadcast
- API call made to server
 - Call contains UUID
- Server looks up iBeacon information
- Server sends product information to app
- App creates push notification
- Server receives customer events from device



System Architecture

Systems Architecture

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System Components

- Hardware Platforms
 - iPhone 4S and up
 - iBeacon
- Software Platforms / Technologies
 - Xamarin
 - Windows Azure + .NET
 - SQL Server 2012
 - Crittercism
 - Flurry
 - Estimote



Testing

- Server Side Code
 - Visual Studio testing suite
- Server Side Data
 - Mock products, sales, and customer accounts
- Manual
 - Mock Meijer store with iBeacons



Risks

- iBeacon
 - Don't know limitations / never used before
 - Mitigation: Estimote SDK / Tutorials
- Windows Azure Mobile Services
 - Remote Server. Unfamiliar with service
 - Mitigation: Xamarin integration guide
- Xamarin
 - Integrating 3rd party software with Xamarin
 - Mitigation: Find components in Xamarin package repo
- Testing Environment
 - Effective simulation of store environment
 - Mitigation: Clever use of iBeacons / Mock data

