MICHIGAN STATE
U N I V E R S I T Y

Project Plan
Enhanced Program Guide Authoring Services

The Capstone Experience

Team Motorola Mobility

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From Students…
    …to Professionals

Project Overview

- ## Develop Content Authoring Tool
  - Allow content providers to upload and coordinate Secondary Content with Primary Content

- ## Develop Mobile Client
  - Create fluid interface to allow presentation of multiple content formats in layered manner

- ## Develop Content Service
  - Store information about Secondary Content and it's associations with Primary Content

- ## Design standard for Secondary Content
  - Similar to current standards for advertisement in cable services

Functional Specifications

- Content Authoring Tool
  - Upload, Delete, Modify Secondary Content
  - Coordinate presentation of Secondary Content with times in Primary Content
- Mobile Application
  - Fetch content triggers based on current Primary Content
  - Allow user to set preferences for optimal ease of use
  - Sync display of Secondary Content with Primary Content
- Content Service
  - Authenticate users and limit operations based on permissions

Design Specifications

- Content Authoring User Interface
  - Implement entirely new application
  - Emphasize usability and performance
  - Allow customization of display by individual users
- Mobile Device UI
  - Intuitive interface
  - Display multiple pieces of Secondary Content without clutter
- Design standard for organizing Secondary Content

Screen Mockups

Screen Mockups

Content Manangement

Screen Mockups

Screen Mockups

Association Management - Tree View, Viewing Suggested Secondary Content

Technical Specifications

- Content Server
  - Store Secondary Content information in PostgreSQL Database
  - Accessed through iBatis persistence layer
- Application Server
  - Runs on Windows Server 2008
  - Deployed to GlassFish
  - RESTful APIs
  - All data accessed with addressable URIs
- Mobile Device
  - Communicates with proxy to contact services

System Architecture

Set Top Box & TV

Video on Demand Service

Media Service

User

Mobile Device

Application Service

Content Authoring Tool

Content Provider
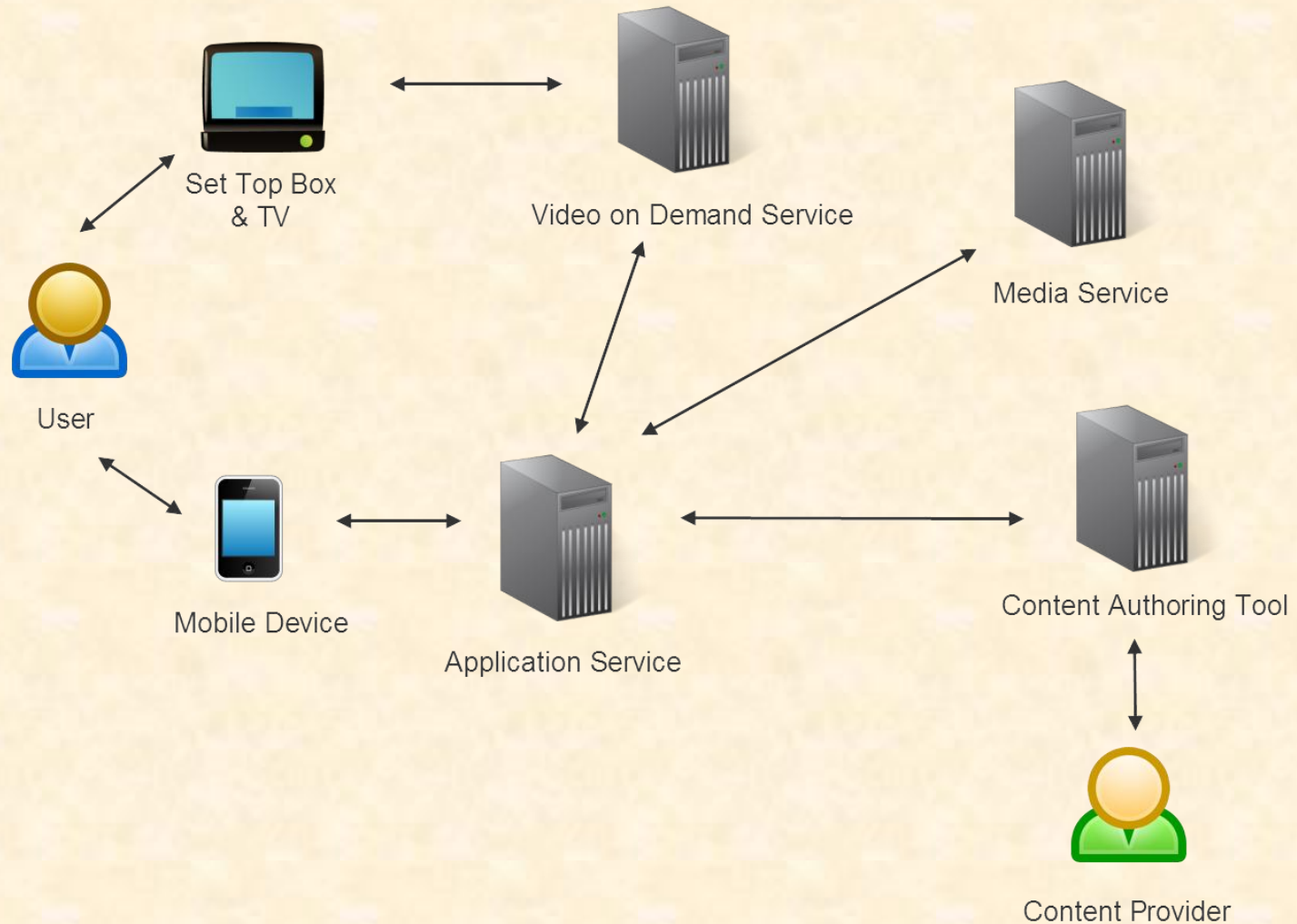
System Architecture
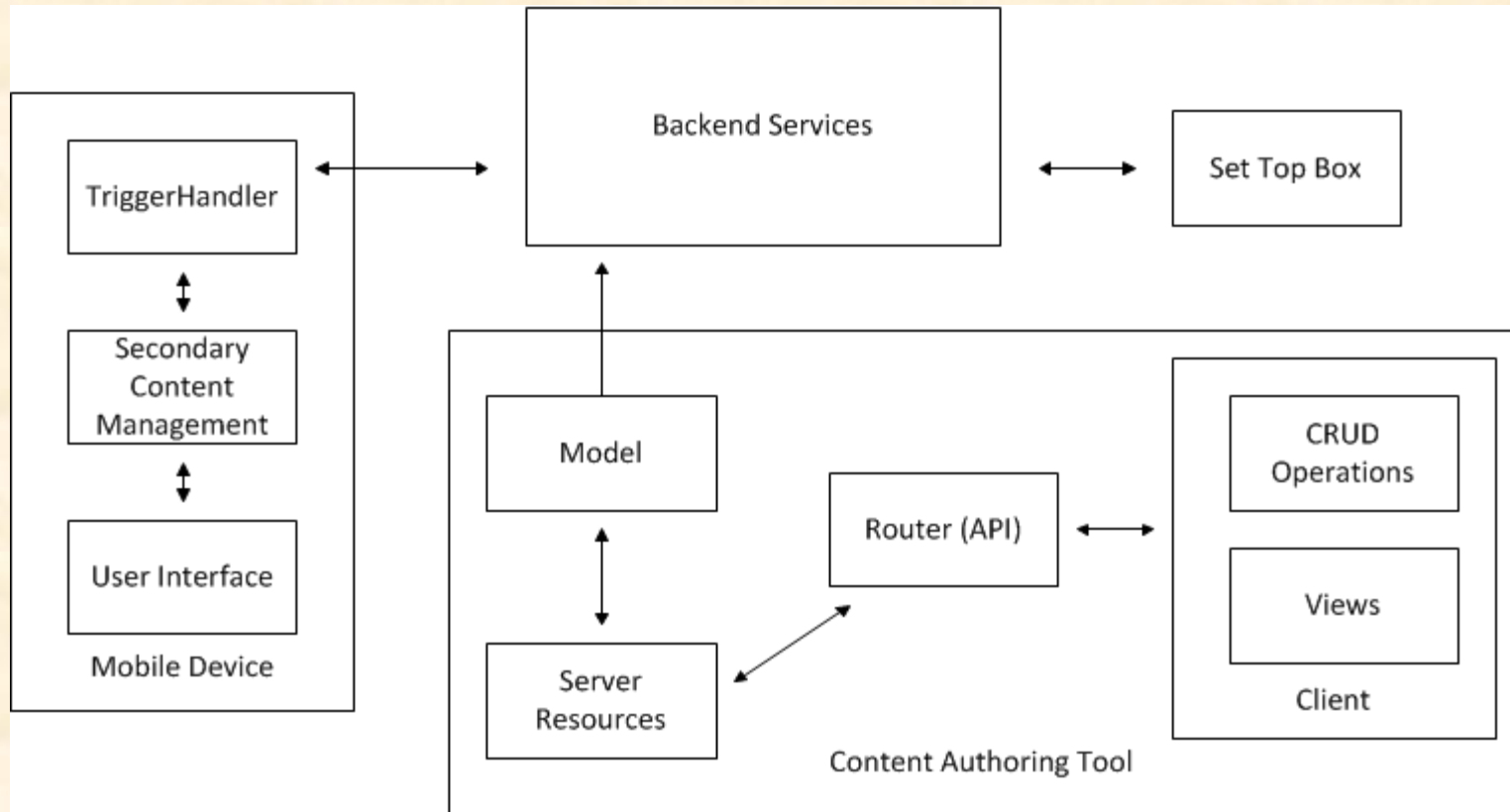
System Architecture

System Components

- Hardware Platforms
  - Motorola Set Top Box
  - Apple iPad
  - Windows & Mac Desktops
- Software Platforms / Technologies
  - Java, RESTlet framework, Eclipse
  - Objective C
  - Glassfish Application Server
  - Google Web Toolkit / Vaadin Framework
  - PostgreSQL Database / iBatis Persistence Layer

Testing

- Content Authoring Tool
  - Performance and appearance within supported browsers
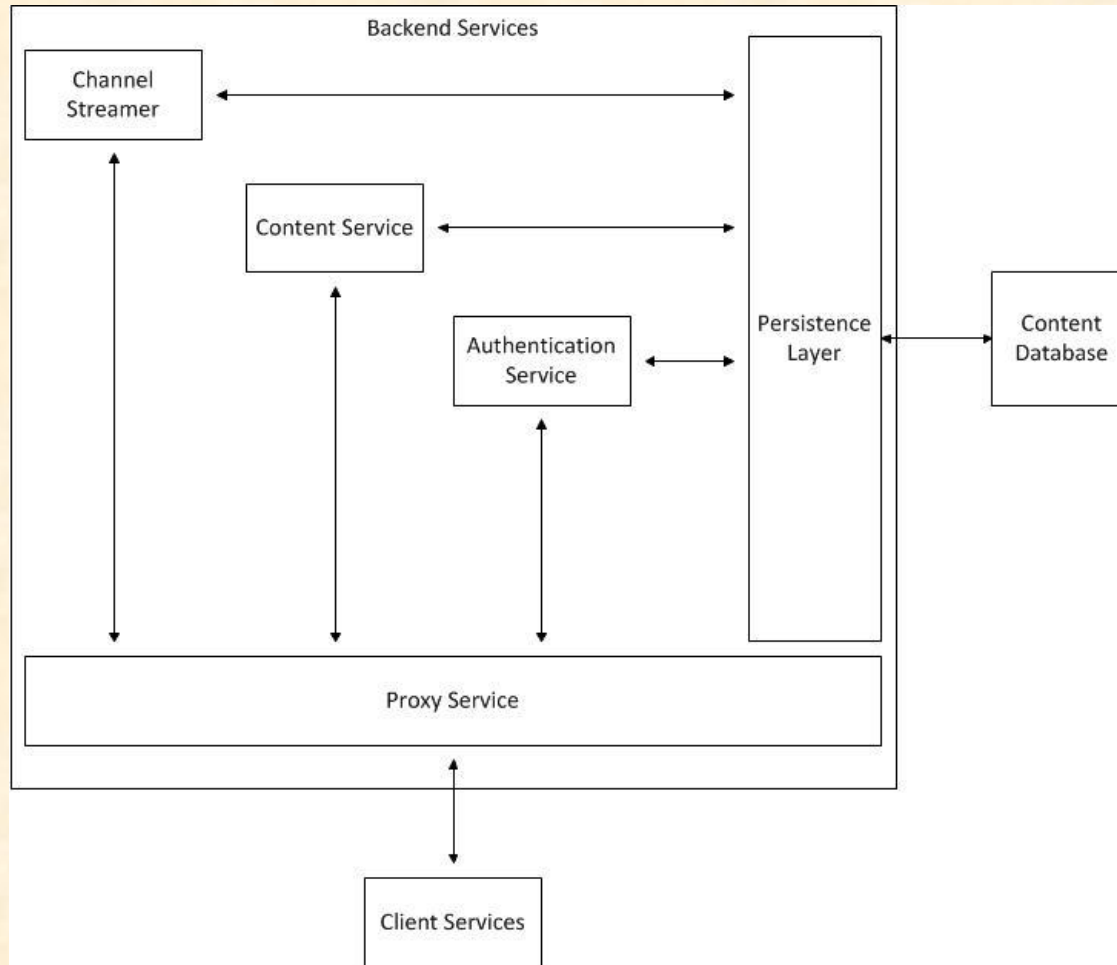
- Mobile Device Application
  - Test user experience and ease of use

- Test scalability, performance with many users accessing at once

- Security testing to ensure protection of content provider's information and media

Risks

- Scalability
  - Ideally system will serve anyone with cable box and mobile device
- Performance
  - Large amounts of data, multimedia
- User Experience
  - Provide high standard of usability, ease of use
- Learning curve
  - New technologies and development concepts