Project Plan
Enhanced Program Guides for Mobile Devices

The Capstone Experience

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Project Overview

• Provide additional television content
  ▪ Extend brand names beyond living room
  ▪ Enhance user experience

• Manage Secondary Content Lifecycle
  ▪ Create new content and new types of content
  ▪ Associate content to specific times within a show

• Mobile User Application
  ▪ Non-intrusive
  ▪ User friendly
  ▪ Multiple platforms
  ▪ For use with live or recorded content
Functional Specifications

• Administrator Web Page
  ▪ View, Create or delete content
  ▪ Link content together

• Mobile Application
  ▪ Receive content based on a specific show
  ▪ Set preferences on types of content to receive
  ▪ Sync mobile device to Set-Top boxes or channels

• Electronic Programming Guide
  ▪ Displays shows available on each channel
Design Specifications

• Administrator UI
  ▪ Minimal Layout Changes
  ▪ Present Information in an Intuitive Manner

• Content Authoring Tool
  ▪ Create New or Use Existing Layouts
  ▪ Customizable Using XML

• Client UI
  ▪ Touch Screen Friendly
  ▪ View Current or Previous Content
Screen Mockups

![Mockup Image]

- Title
- Duration
- Tags

1. Search Results

<table>
<thead>
<tr>
<th>Type</th>
<th>Go!</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>C</td>
<td>C</td>
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<tr>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>F</td>
<td>F</td>
</tr>
</tbody>
</table>

- Title
- Content

(Display Search Result 1 Radio Button)

- Title
- Content

(Display Search Result 2 Radio Button)
Screen Mockups

Content Title
Tags
Type

Element Type  New Root  Add Child

1
  1.1
  1.2
    1.2.1

Element Text
Bold  Italic  Underlined  Size  
Left  Center  Right  Font  
Text Color  
BackgroundColor  

Element Preview

Content Preview

Save Type  Submit  Cancel
Screen Mockups
Technical Specifications

• Cable Head-End
  ▪ Has Video On-Demand Server

• Application Server
  ▪ Runs on Windows Server 2008
  ▪ Uses RESTful APIs
  ▪ Services & content accessed with addressable URIs

• Content Server
  ▪ Stores data in a MySQL database
  ▪ Accesses MySQL using the iBatis persistence layer
System Architecture
System Architecture

API Services
• Syncing
  ▪ Coordinate mobile device with streaming content
• Scheduling
  ▪ Set and retrieve when shows are played on each channel
• Device Registering
  ▪ Record unique device ID with services
• Streaming
  ▪ Deliver shows to set-top box
• Content
  ▪ Interface with database to set and retrieve content
• Portal
  ▪ Manage media playback
• User Account
  ▪ Authenticate users and manage their settings
System Architecture
System Architecture

• Composite Pattern for UI Elements
• Visitor Pattern on UI elements for rendering
• Abstract classes for Resource classes, device classes, and Data Transfer Objects
System Components

• Hardware Platforms
  ▪ iPad
  ▪ Motorola Set-Top Box
  ▪ Dell Power-Edge Server

• Software Platforms / Technologies
  ▪ Java/Objective C
  ▪ RESTlet
  ▪ XML/JSON
  ▪ Glassfish
  ▪ Google Web Toolkit
  ▪ MySQL Database
  ▪ iBatis
Testing

• Unit tests for core classes
• Functional testing of RESTful API with mock requests
• Admin Panel UX Tests
  ▪ Testing appearance and compatibility with browsers
• iPad UX Tests
  ▪ Testing effectiveness of UI on Emulator & Hardware
• End-to-end use case tests
Risks

• SVN access from Motorola
  ▪ Delays from VPN changeover

• Integration of RESTful services and UI

• Implement proxy for clients due to Same Origin Policy

• Incorporate previous capstone video services

• Notify the mobile application of changes to the status of content playback