Project Plan
Enhanced Program Guide Authoring Services

The Capstone Experience

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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

Main Page

Content Authoring Tool

Primary Content

- Extreme Dinosaurs
  - Title: Extreme Dinosaurs
  - Description: Mass grave beds in Canada and Argentina support a theory about a flesh-eating dinosaur that hunted in packs.
  - Series Type: Documentary
  - Genres: Science, History, Paleontology
  - Running Time: 60 minutes

- Deep Sea Aliens
  - Unravel the intelligence of the octopus

- Vampires from the Abyss
  - The mysteries of the vampire squid.

- The Planets
  - The explosive birth of our solar system

- How Do They Do It?
  - Mega hotels: lasers; desert golf.

- How Do They Do It?
  - Manufacturing drink cartons, prefabricated homes and mobile...

Show Times:

- Los Angeles, CA
  - Science Channel
    - Date: Friday 02-04-2011
    - Time: 6:00PM PST

- East Lansing, MI
  - London, England

Secondary Content

Title: Science Channel Facebook Page
- Format: Facebook Page
- Time: 1:30

Title: City of LA PSA
- Format: Image
- Time: 2:45

Title: Interview with Dr. Dinoman
- Format: Video
- Time: 4:00

Title: Scale image of dinosaurs and
- Format: Image
- Time: 6:15

Title: Link to Science Channel Site
- Format: Hyperlink
- Time: 7:45

Title: Advert for following program
- Format: Video
- Time: 14:00

Title: Advert for LA pizza
- Format: Video
- Time: 16:00

Title: Advert for Olympics
- Format: Image
- Time: 20:00

Title: 3D Render of Brontosaurus
- Format: Image
- Time: 22:00
Screen Mockups

Content Management

- Filters:
  - Dinosaur
  - Just my content
- Content Format:
  - Video
- Start: 4:00
- End: 5:45
- Title: Jurassic Park TV Spot
- Format: Video
- Time: 7:00
- Title: Textured Brontosaurus Bone
- Format: Video
- Time: 12:00
- Title: Picture of Brontosaurus
- Format: Video

Primary Content Utilizing Selected Secondary Content

- Dinosaur
  - Most grove beds in Canada and Argentina support a theory about a...
  - History of Dinosaurs
    - Broad overview of rise and fall of dinosaurs
  - Mark association with note
- Open Association Management

On Click

- Title: Interview with Dr. Dinoman
- Duration: 4:00
- Format: Video
- Length: 4:00
- Tags: Dinosaur, science, extinction, paleontology, interview, education

Edit Content

Create Content
Delete
Screen Mockups

Association Management - Table View, Searching Secondary Content with filters

*Note: Diagram shows an interface for managing association and viewing secondary content with filters.*

- **Table View**
  - **Associated Secondary Content**
    - Title: Science Channel Facebook Page
      - Format: Facebook Page
      - Title: City of LA TPA
        - Format: Image
        - Time: 4:49
      - Title: Interview with Dr. Di nosaur
        - Format: Video
        - Time: 4:49
      - Title: Scale image of dinosaurs and humans
        - Format: Image
        - Time: 6:15
      - Title: Link to Science Channel Site - Dinosaur
        - Format: Hyperlink
        - Time: 7:45
      - Title: Advert for following program
        - Format: Video
        - Time: 14:04
      - Title: Advert for LA pizza
        - Format: Video
        - Time: 14:04
      - Title: Advert for Olympics
        - Format: Image
        - Time: 16:04
      - Title: 3D Render of Brontosaurus
        - Format: Image
        - Time: 22:00

- **Secondary Content**
  - **Filters:**
    - Dinosaur
    - Just my content
    - Dates
      - Start: / / 
      - End: / / 
    - Contact Format:
      - Video
      - Image
      - Hyperlink
      - Text
      - Facebook Page

**Results:**
- Title: Interview with Dr. Di nosaur
  - Format: Video
  - Time: 14:04
- Title: Jurassic Park TV Spot
  - Format: Video
  - Time: 9:49
- Title: 3D Render of Brontosaurus
  - Format: Video
  - Time: 7:00
- Title: Caddie Advertainment
  - Format: Video
  - Time: 12:00
- Title: Velociraptor Muscle Model

- **On Click**
  - *Refers to content already associated with primary content we are viewing. Follow color coded standards.*

- **On Hover**
  - *Warning for URL from Science Channel web team (Remove note)*

- **Remove associated content**
  - Are you sure you want to remove this Generally Associated content? This will affect all showings. Consider disabling at Lineup or Instance level.
  - Remove
  - Cancel
Screen Mockups

**Association Management - Tree View, Viewing Suggested Secondary Content**

- Title: City of LA PSA
- Format: Image
- Time: 2:45

- Title: Jurassic Park TV Spot
  - Format: Video
  - Length: 0:30

- Title: Godzilla Advertisement
  - Format: Video
  - Length: 0:30

- Note: Drag and drop to timeline

Refers to content already associated with primary content we are viewing.
Follows color coded standards.
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

- User
- Mobile Device
- Set Top Box & TV
- Video on Demand Service
- Application Service
- Media 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