Reach Out VCU

Project Documentation

May 2006

Sky Huvard

Projects in Information Systems

Virginia Commonwealth University

Table of Contents

I. System Documentation....4

1. System Proposal....4
2. UML Diagrams....6
3. Work Plan 8
4. User Interface Mockups....9
5. Project Scope....10
    a. Affiliate Content Management System....10
        i. Future Expansion....10
    b. Affiliate Recognition System....10
    c. Affiliate Outreach System....10
        i. Future Expansion....10
6. Network Diagram....11
7. Concept Overview....12
8. Development Methodology....13
    a. Xcode....13
    b. Quartz Composer....13
    c. Really Simple Syndication (RSS)....13
    d. Movable Type....13
    e. Mac OS X Server....13

II. User Documentation....14

1. Description of Functionality....14
    a. Content Management System....14
    b. Outreach System....14
    c. Recognition System....14
2. User Instructions....15

a. Content Management System 15
b. Outreach System 15
c. Recognition System 15
Figure 1: Use-Case Diagram 6
Figure 2: Use-Case Descriptions.....7
Figure 3: Gantt Chart 8
Figure 4: Affiliate Outreach System User Interface 9
Figure 5: Affiliate Recognition System User Interface 9
Figure 6: Network Diagram.....11
Figure 7: Concept Overview 12

I. System Documentation

1. System Proposal

Currently the VCU Joint Engineering/Business Task Force is considering an information system that will enhance the value and recognition of corporate affiliates of the University. Dr. Redmond has offered the opportunity for me to participate in the development of this project in conjunction with Dr. Weistroffer, Mr. Saunders, and Dr. Wynne during the spring 2006 semester of Projects in Information Systems. My participation in the definition, planning, integration, and implementation of this information technology project will complement my area of study in the Information Systems department.

Interactive touch screen monitors have been selected and purchased by the University. Currently, the plan is for one large interactive touch screen to be installed on the wall directly across from the fourth floor elevators of the Business building, with an additional large display with a secondary interactive touch screen to be installed on an empty wall adjacent to the third floor elevator. Both of these interactive systems will be provided for students, professors, and visitors to raise awareness of the Universities corporate affiliates.

These systems, code name Reach Out VCU, will scroll specialized, approved content such as marketing, company logos, employment opportunities, and alumni testimonials. A limited level of interactivity will allow users to navigate throughout predefined pathways for company and university specific information. When the touch screen is not in use, motion graphics will be rendered on a portion of the screen to highlight the features listed above. Additionally, a portion of the screen space can be reserved for scrolling University news.

A content management system will be integrated with the application software powering the interactive displays. Authorized users such as recognized corporations will be able to create draft pages for their special interest, which can then be approved by administrative users with the appropriate authority. These approved entries will then 'go live.'

Information may be requested through future integration with card reader hardware that links to the VCU One Card system for supplying a users contact credentials quickly and accurately to the appropriate corporation, department, or Career Center representative. This portion of the program may not be implemented by spring 2006.

2. UML Diagrams

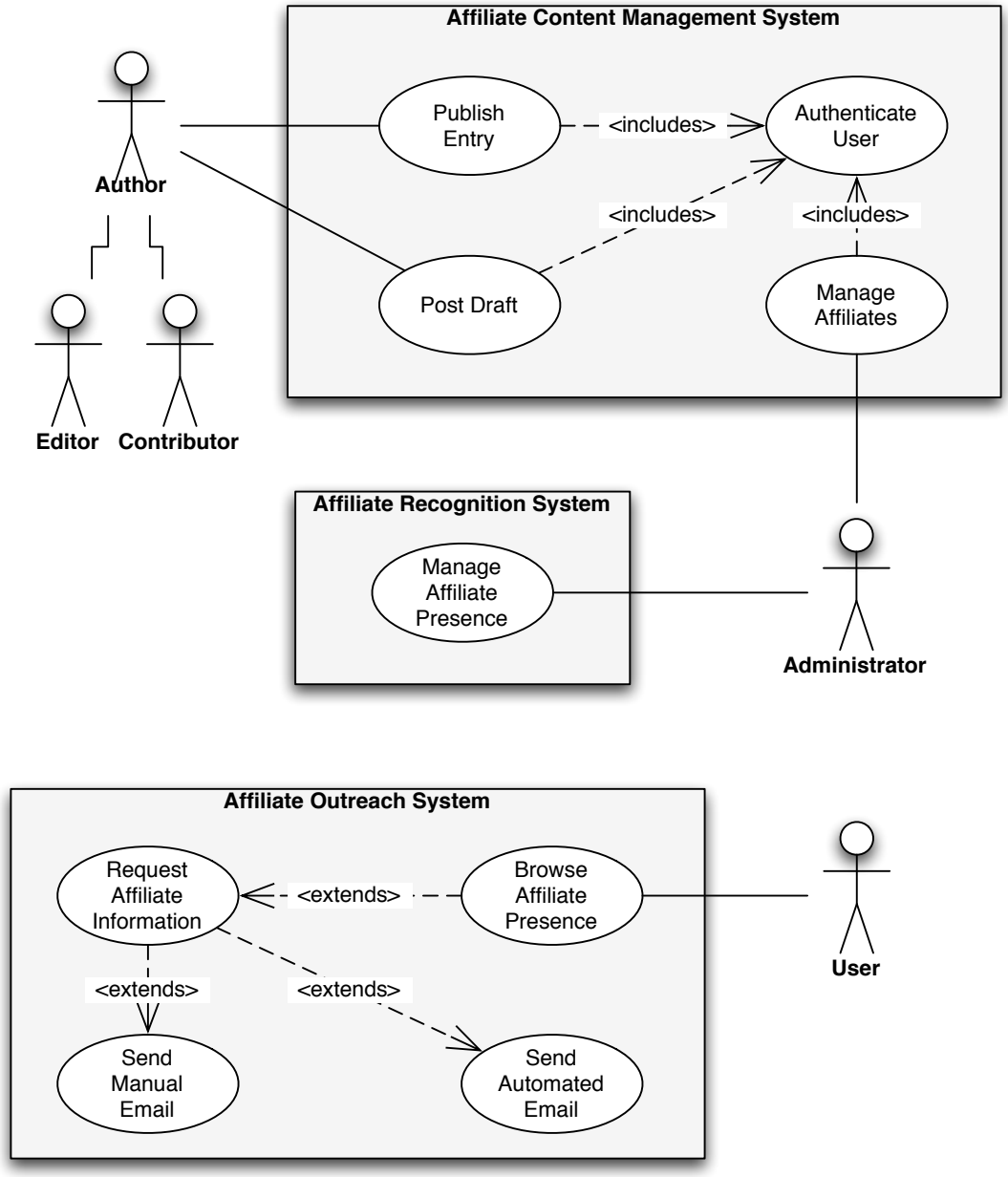


Figure 1: Use-Case Diagram

Affiliate Content Management System

Use Case Title: Post Draft
Primary Actor: Contributor
Level: Summary
Stakeholders: Author
Precondition: Author must be online with Web access
Minimal Guarantee: Nothing happens
Success Guarantee: Contributor creates new post
Trigger: Contributor requests new entry
Main Success Scenario: Contributor selects "New Entry"
1. Contributor enters Title
2. Contributor selects Primary Category
3. Contributor enters Entry Body
4. Contributor enters Extended Entry
5. Contributor enters Excerpt
6. Contributor transfers entry to Editor

Extensions:
1. Authenticate User

Use Case Title: Manage Affiliates
Primary Actor: Administrator
Level: Summary
Stakeholders: Administrator, Author
Precondition: Administrator must be online with Web access
Minimal Guarantee: Nothing happens
Success Guarantee: Affiliate created and settings adjusted, Confirmation
Trigger: Administrator creates new Affiliate or selects existing Affiliate
Main Success Scenario:
1. Affiliate presence is created, deleted, or adjusted
2. Authors are created, or deleted
3. Authors permissions are adjusted

Use Case Title: Authenticate User
Primary Actor: Author, Administrator
Level: Summary
Stakeholders: Author, Administrator
Precondition: Author, Administrator must be online with Web access
Minimal Guarantee: Login fails, Message presented
Success Guarantee: Author is successfully authenticated as Administrator, Editor, or Contributor
Trigger:
1. Author tries to Post Draft / Publish Entry or
2. Administrator selects Manage Affiliates

Main Success Scenario:
1. Author/Administrator enters user name
2. Author/Administrator enters password
3. Author/Administrator is authenticated

Extensions:
1. Author/Administrator not authenticated, message displayed
2. Temporary block on account to prevent brute force attacks

Use Case Title: Publish Entries
Primary Actor: Editor
Level: Summary
Stakeholders: Editor, Contributor
Precondition: Contributor has transferred entry to Editor
Minimal Guarantee: Nothing happens
Success Guarantee: Entry is published
Trigger: Editor selects entry to publish
Main Success Scenario:
1. Editor selects entry
2. Editor selects Publish post status

Extensions:
1. Editor does not accept draft

Affiliate Outreach System

Use Case Title: Browse Affiliate Presence
Primary Actor: User
Level: Summary
Stakeholders: User
Precondition: User touches display
Minimal Guarantee: Nothing happens
Success Guarantee: User selects Affiliate
Trigger: User selects Affiliate icon
Main Success Scenario:
1. Affiliate information displayed

Extension:
1. Invoke Request Affiliate Information Use Case
2. Invoke Recognition System when Idle

Use Case Title: Request Affiliate Information
Primary Actor: User
Level: Summary
Stakeholders: User, Affiliate, Administrator
Precondition: Browse Affiliate Presence invoked
Minimal Guarantee: Nothing happens
Success Guarantee: User is thanked for information request
Trigger: User Request Information selected
Main Success Scenario:
1. User chooses to enter contact information manually or

Extension:
1. Swipe card for more information

Use Case Title: Send Manual Email
Primary Actor: User
Level: Summary
Stakeholders: User, Affiliate, Adminstrator
Precondition: User Manual Information selected
Minimal Guarantee: Nothing happens
Success Guarantee:
1. Affiliate notified of Information Request
2. Confirmation of Information Request

Trigger: User manual entry for contact information selected
Main Success Scenario:
1. On screen keyboard appears
2. Form is filled out by User
3. Form completed by User
4. User selects Submit on screen

Extensions:
1. User cancels request
2. User resets form

Use Case Title: Send Automated Email
Primary Actor: User
Level: Summary
Stakeholders: User, Affiliate, Administrator
Precondition: User automated entry for contact information selected
Minimal Guarantee: Nothing happens
Success Guarantee:
1. Affiliate notified of Information Request
2. Confirmation of Information Request

Trigger: User automated entry for contact information selected
Main Success Scenario:
1. User is requested to swipe card
2. Card information is processed
3. Information emailed to affiliate

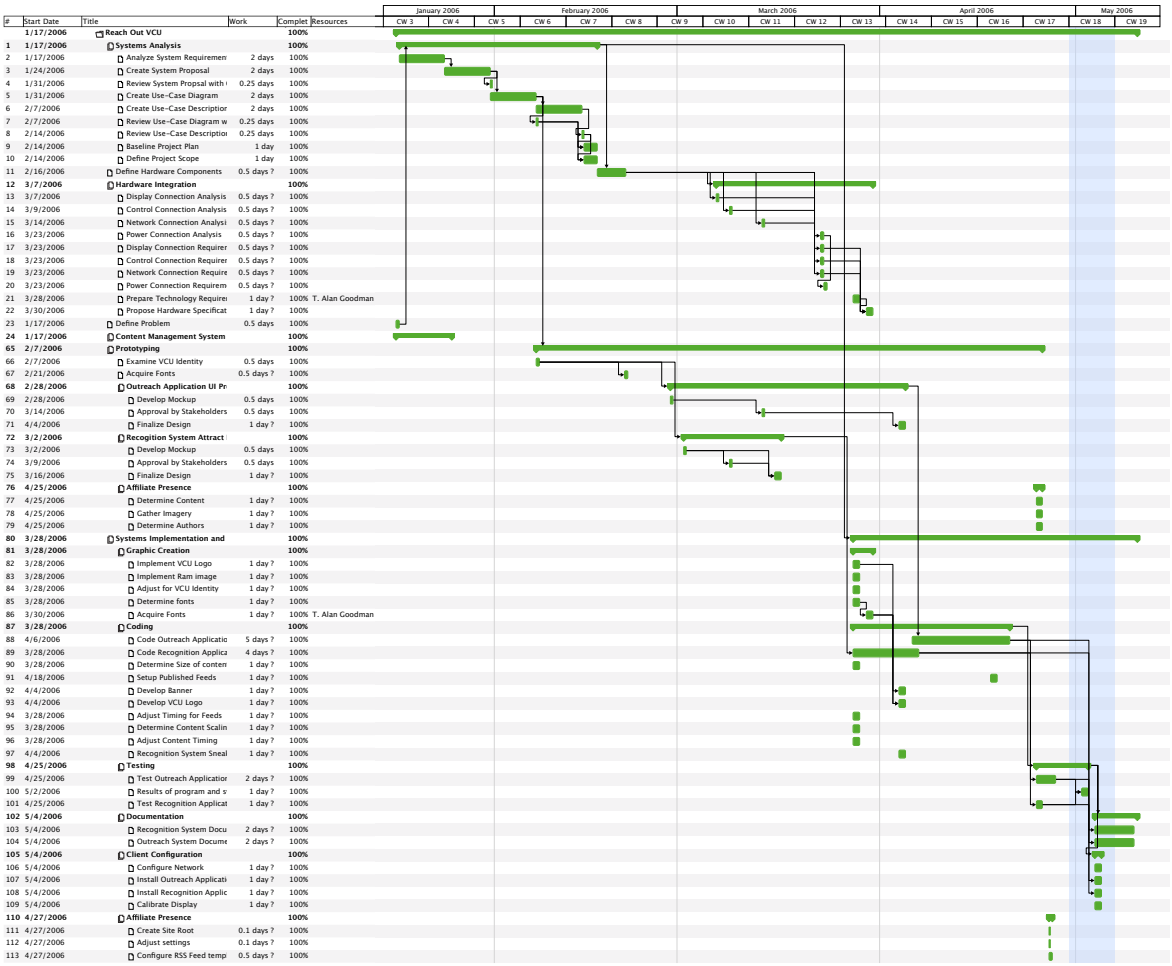
Extensions:
1. User cancels request

Affiliate Recognition System

Use Case Title: Manage Affiliate Presence
Primary Actor: Administrator
Level: Summary
Stakeholders: Administrator, Affiliate
Precondition: Administrator is logged into Display client
Minimal Guarantee: Nothing happens
Success Guarantee: Affiliates are added or removed from Recognition System
Trigger: Options for Recognition System selected
Main Success Scenario:
1. URL for Affiliate is added or deleted
2. Administrator saves changes
3. Exit from Recognition management

Figure 2: Use-Case Descriptions

3. Work Plan



#	Start Date	Title	Work	Complet	Resources
	1/17/2006	**Reach Out VCU**		**100%**	
1	**1/17/2006**	**Systems Analysis**		**100%**	
2	1/17/2006	Analyze System Requiremen	2 days	100%	
3	1/24/2006	Create System Proposal	2 days	100%	
4	1/31/2006	Review System Propsal with	0.25 days	100%	
5	1/31/2006	Create Use-Case Diagram	2 days	100%	
6	2/7/2006	Create Use-Case Description	2 days	100%	
7	2/7/2006	Review Use-Case Diagram w	0.25 days	100%	
8	2/14/2006	Review Use-Case Descriptio	0.25 days	100%	
9	2/14/2006	Baseline Project Plan	1 day	100%	
10	2/14/2006	Define Project Scope	1 day	100%	
11	2/16/2006	Define Hardware Components	0.5 days ?	100%	
12	**3/7/2006**	**Hardware Integration**		**100%**	
13	3/7/2006	Display Connection Analysis	0.5 days ?	100%	
14	3/9/2006	Control Connection Analysis	0.5 days ?	100%	
15	3/14/2006	Network Connection Analysi	0.5 days ?	100%	
16	3/23/2006	Power Connection Analysis	0.5 days ?	100%	
17	3/23/2006	Display Connection Requirer	0.5 days ?	100%	
18	3/23/2006	Control Connection Requirer	0.5 days ?	100%	
19	3/23/2006	Network Connection Require	0.5 days ?	100%	
20	3/23/2006	Power Connection Requirem	0.5 days ?	100%	
21	3/28/2006	Prepare Technology Requirer	1 day ?	100%	T. Alan Goodman
22	3/30/2006	Propose Hardware Specificat	1 day ?	100%	
23	1/17/2006	Define Problem	0.5 days	100%	
24	**1/17/2006**	**Content Management System**		**100%**	
65	**2/7/2006**	**Prototyping**		**100%**	
66	2/7/2006	Examine VCU Identity	0.5 days	100%	
67	2/21/2006	Acquire Fonts	0.5 days ?	100%	
68	**2/28/2006**	**Outreach Application UI Pr**		**100%**	
69	2/28/2006	Develop Mockup	0.5 days	100%	
70	3/14/2006	Approval by Stakeholders	0.5 days	100%	
71	4/4/2006	Finalize Design	1 day ?	100%	
72	**3/2/2006**	**Recogition System Attract**		**100%**	
73	3/2/2006	Develop Mockup	0.5 days	100%	
74	3/9/2006	Approval by Stakeholders	0.5 days	100%	
75	3/16/2006	Finalize Design	1 day ?	100%	
76	**4/25/2006**	**Affiliate Presence**		**100%**	
77	4/25/2006	Determine Content	1 day ?	100%	
78	4/25/2006	Gather Imagery	1 day ?	100%	
79	4/25/2006	Determine Authors	1 day ?	100%	
80	**3/28/2006**	**Systems Implementation and**		**100%**	
81	**3/28/2006**	**Graphic Creation**		**100%**	
82	3/28/2006	Implement VCU Logo	1 day ?	100%	
83	3/28/2006	Implement Ram image	1 day ?	100%	
84	3/28/2006	Adjust for VCU Identity	1 day ?	100%	
85	3/28/2006	Determine fonts	1 day ?	100%	
86	3/30/2006	Acquire Fonts	1 day ?	100%	T. Alan Goodman
87	**3/28/2006**	**Coding**		**100%**	
88	4/6/2006	Code Outreach Applicatio	5 days ?	100%	
89	3/28/2006	Code Recognition Applica	4 days ?	100%	
90	3/28/2006	Determine Size of conten	1 day ?	100%	
91	4/18/2006	Setup Published Feeds	1 day ?	100%	
92	4/4/2006	Develop Banner	1 day ?	100%	
93	4/4/2006	Develop VCU Logo	1 day ?	100%	
94	3/28/2006	Adjust Timing for Feeds	1 day ?	100%	
95	3/28/2006	Determine Content Scalin	1 day ?	100%	
96	3/28/2006	Adjust Content Timing	1 day ?	100%	
97	4/4/2006	Recognition System Sneal	1 day ?	100%	
98	**4/25/2006**	**Testing**		**100%**	
99	4/25/2006	Test Outreach Applicatior	2 days ?	100%	
100	5/2/2006	Results of program and s	1 day ?	100%	
101	4/25/2006	Test Recognition Applicat	1 day ?	100%	
102	**5/4/2006**	**Documentation**		**100%**	
103	5/4/2006	Recognition System Docu	2 days ?	100%	
104	5/4/2006	Outreach System Docume	2 days ?	100%	
105	**5/4/2006**	**Client Configuration**		**100%**	
106	5/4/2006	Configure Network	1 day ?	100%	
107	5/4/2006	Install Outreach Applicati	1 day ?	100%	
108	5/4/2006	Install Recognition Applic	1 day ?	100%	
109	5/4/2006	Calibrate Display	1 day ?	100%	
110	**4/27/2006**	**Affiliate Presence**		**100%**	
111	4/27/2006	Create Site Root	0.1 days ?	100%	
112	4/27/2006	Adjust settings	0.1 days ?	100%	
113	4/27/2006	Configure RSS Feed temp	0.5 days ?	100%	

Figure 3: Gantt Chart

4. User Interface Mockups

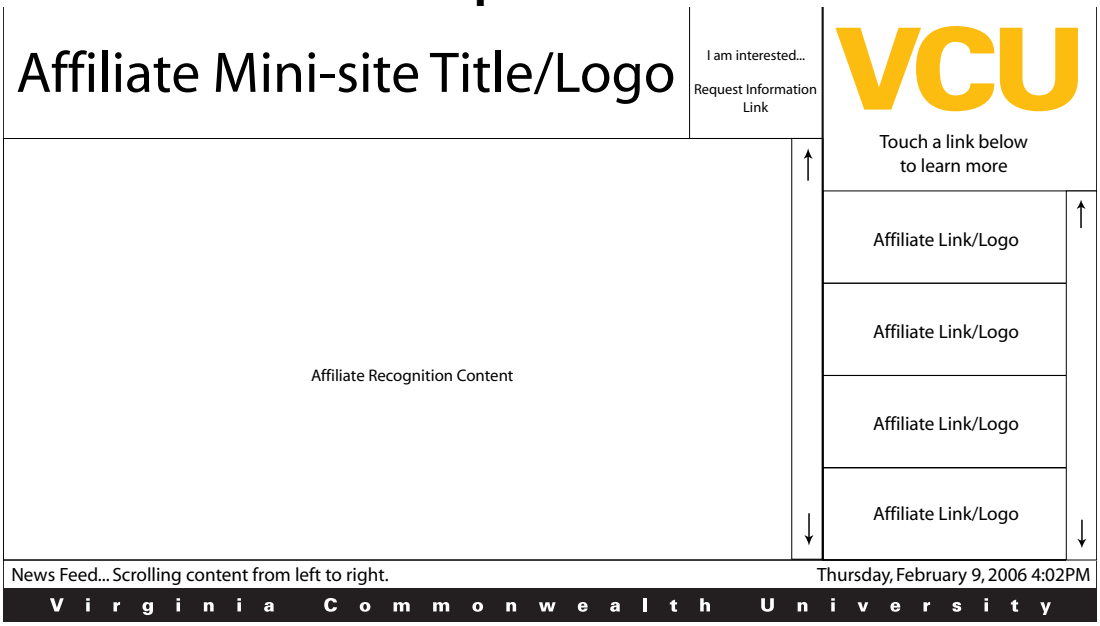


Figure 4: Affilliate Outreach System User Interface

Figure 5: Affiliate Recognition System User Interface

5. Project Scope

(a) Affiliate Content Management System

This system allows users to create a manage content for specific affiliate sites.

- Administrators create, update, and delete Affiliate Presence within the system.
- Administrators create, update, and delete Authors for an Affiliates Presence.

(i) Future Expansion

- Authors can be either Editors or Contributors.
- Contributors to an Affiliate Presence will Post Draft entries within the system and then transfer these entries to an Editor.
- Editors will Publish Entries that have been submitted to by Authors for publication.

(b) Affiliate Recognition System

This system will run when the kiosk is idle, presenting specialized information from Affiliates.

- The Administrator can Manage Affiliate Presence to enable or disable Affiliates from being present on the attract loop, and set the amount of time an Affiliate Presence is displayed on screen.
- Authors designate which entries in their Affiliate Content Management System will be supplied to the Affiliate Recognition System by selected the appropriate Category for their entry.

(c) Affiliate Outreach System

This system allows users of the kiosk to Browse Affiliate Presence on the display.

- If a User is interested in a certain Affiliate Presence, they may select that Affiliate from the navigation panel.
- When a User selects an Affiliate Presence, the content panel of the display will be loaded with the contents of the Affiliate Content Management System.
- If a user would like to submit their personal information to the Affiliate presented on screen, an option to manually enter their email address will be available.
- A VCU sponsor will receive the interested Users email address who will notify the appropriate Affiliate contact.

(i) Future Expansion

- If a user would like to submit their personal information to the Affiliate presented on screen, an option to swipe their VCU card will be available.

6. Network Diagram

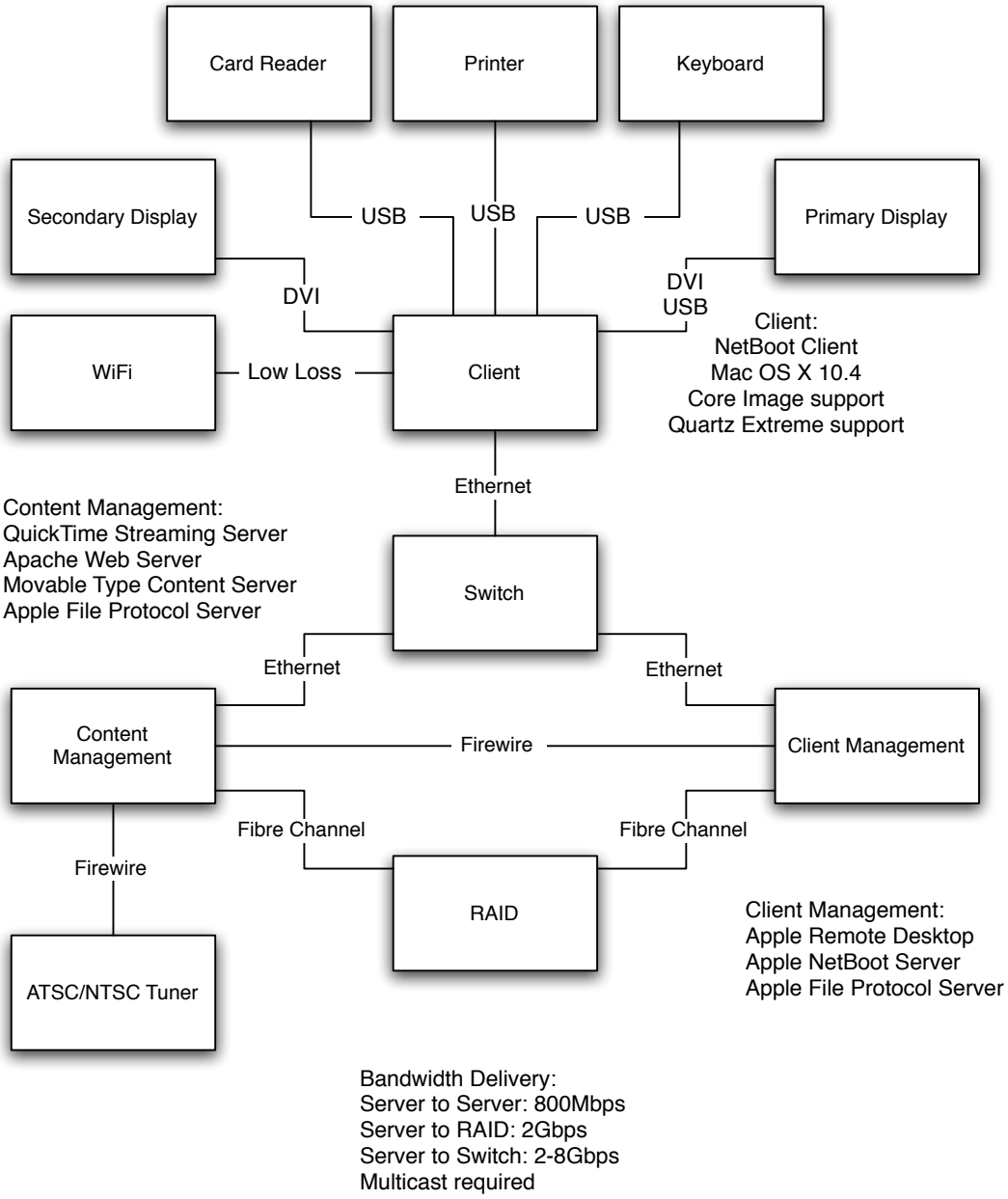


Figure 6: Network Diagram

7. Concept Overview

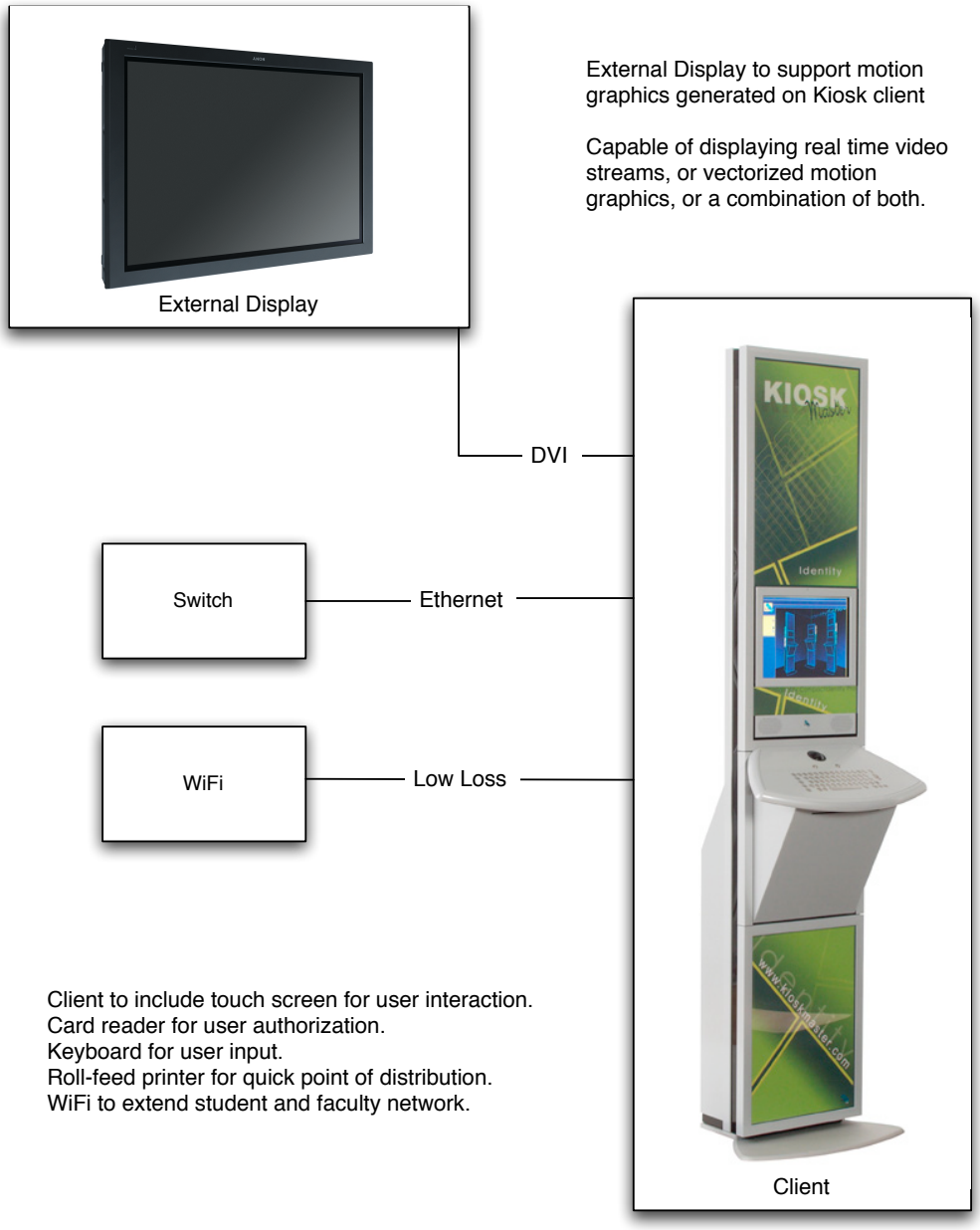


Figure 7: Concept Overview

8. Development Methodology

(a) Xcode

Apple provides a suite of tools along with an integrated development environment called Xcode. Xcode was used to create a Mac OS X universal binary for the Afilliate Outreach system that runs natively on PowerPC and Intel-based Macintosh computers.

(b) Quartz Composer

Apple provides a development tool called Quartz Composer along with their distribution of Xcode. Quartz Composer is a visual programming environment that brings together a number of technologies like OpenGL and RSS. The Outreach and Recognition systems were created in this environment.

(c) Really Simple Syndication (RSS)

RSS is an XML (eXtensible Markup Language) format for the delivery of time-based streams of content called “feeds.” These RSS feeds are created for each category of content provided by the Affiliate.

(d) Movable Type

Movable Type is a weblog publishing platform used manage content and deliver it via RSS. Affiliates can directly manage their ‘weblog’ entries and categories which are fed to the Outreach and Recognition sytems.

(e) Mac OS X Server

Apple’s Mac OS X Server was chosen as the web hosting platform. The Apache web server was used along with Perl to implement the Movable Type content management system.

II. User Documentation

1. Description of Functionality

(a) Content Management System

The content management system is powered by the Movable Type publishing platform. Movable Type supports unlimited weblogs, one is created for each Affiliate. Each Affiliate site is setup with categories of content the Users may navigate to. Each new entry posted to the system is ascribed to one or more categories.

(b) Outreach System

The Outreach System is a Mac OS X screen saver. This composition is intended to attract users to the screen for interaction with the system. Each Affiliate Outreach System is configured to a specific RSS feed.

(c) Recognition System

The Recognition System is a Quartz Composer document. This composition is intended to provide users of the system a way to get specific information about an Affiliate that may be of interest to them. Each Affiliate composition is configured to five category-specific RSS feeds that provide the paths of navigation.

2. User Instructions

(a) Content Management System

The content management system is powered by the Movable Type publishing platform. Details on the use of Movable Type can be found @ http://www.movabletype.com

Categories are created for entries. Each Affiliate site should have 5 categories that provide the navigation links for the Recognition system.

(b) Outreach System

The Outreach System is a Mac OS X screen saver. The composition is located in the ~/Library/Screen Savers/ directory. By opening the System Preferences on the Mac OS X client and selecting the Screen Saver pane, one can adjust the time until the screen saver starts and ensure the proper screen saver is selected.

Open the composition with Quartz Composer to adjust the RSS URL that feeds the motion graphics content for the screen saver. You may also adjust the news feed RSS URL that provides content for the lower banner.

(c) Recognition System

The Recognition System is a Quartz Composer document. A QuartzComposerPlayer application was installed into the /Applications directory. The Recognition System composition is located in the /Users/Shared/Compositions directory. By opening the QuartzComposerPlayer on the Mac OS X Client and selected the composition, one can load the appropriate Affiliate composition.

Open the composition with Quartz Composer to adjust the five RSS feed URLs for the navigation links. You may also adjust the news feed RSS URL that provides content for the lower banner.