UCSD Mobile Framework

A Centralized Mobile Framework for the UCSD Campus

March 11, 2011
Topics

- Background
- Mobile Industry Trends
- The Mobile Framework Discovery Process
- The Recommended Solution
- Next Steps
- Proof of Concept Demo
- Student Affairs TritonLink Tours
Background: UCSD’s iPhone App

- June ‘09 UCSD first public university to provide iPhone app
- Provided web services and data feeds to TerriblyClever.
- Blackberry and generic mobile launched soon thereafter
- In early 2010, TerriblyClever was bought out by Blackboard
What’s the issue?

Vendor bought out by Blackboard so mobile team’s efforts have been redirected

Any change or enhancement has to go through the vendor. This includes simply adding a link

“Locked in” to technical platform

Can’t be agile enough for campus needs

Annual maintenance fee $$

Usage reporting is limited

Need to keep pace with Smartphone industry
Our Goals

- Mobile Framework industry is YOUNG
- We need a solution NOW

- Establish a **campus-wide** mobile strategy
- Conform to **mobile web standards**
- Allow for **rapid deployment** of mobile apps with a distributed development model
What are the options?

- Find another vendor
  - Not many reputable vendors for this kind of thing
  - Issues of going through vendor for changes still exist

- Develop a framework ourselves
  - Starting from scratch
  - Would need to enhance it ourselves to keep it up to date in a fast paced arena

- Leverage an existing mobile framework
  - Non-University open source community for mobile is limited (Sencha, Sproutcore)
  - MIT framework is the most mature
  - UCLA framework is newer and approaches things differently
Computing Growth Drivers Over Time, 1960-2020E

- Mainframe (1MM+ Units)
- Minicomputer (100MM+ Units)
- PC (1B+ Units/ Users)
- Desktop Internet
- Mobile Internet (10B+ Units??)

Increasing Integration

Note: PC installed base reached 100MM in 1993, cellphone/Internet users reached 1B in 2002/2005 respectively;
Source: ITU, Mark Lipacis, Morgan Stanley Research.

More than Just Phones
- iPad
- Smartphone
- Kindle
- Tablet
- MP3
- Car Electronics
- GPS, ABS, A/V
- Video
- Games
- Home Entertainment
- Wireless Home Appliances
Mobile Users > Desktop Internet Users Within 5 Years


- Mobile Internet Users
- Desktop Internet Users

Source: Morgan Stanley Research.
Computer & Mobile Device Trends

Global Unit Shipments of Desktop PCs + Notebook PCs vs. Smartphones + Tablets, 2005-2013E

CQ4:10: Inflection Point
Smartphones + Tablets > Total PCs

Note: Notebook PCs include Netbooks. Source: Katy Huberty, Ehud Gelblum, Morgan Stanley Research. Data and Estimates as of 2/11
Smartphone OS Market Share Q4, 2010

- Symbian: 31%
- Android: 33%
- Apple: 16%
- RIM: 14%
- Windows Mobile: 3%
- Other: 3%
How do we keep up?
Involved Campus IT Groups

ACT, ACMS, SA, Colleges, Libraries, SIO, Bio Sciences
Selection Criteria

› Sustainable over a 1-2 year period of time.
› Include open source or industry standards.
› Support various mobile devices.
› Require little training for development.
› Easy to migrate to a new technology in the future.
Reviewed 8 Mobile Frameworks

UCLA, MIT, SproutCore, PhoneGap, jQuery, WebApp.NET, Sencha, iMobileU
Proof Of Concept “Cook Off”

UCLA mobile vs. Sencha

Proof of Concept Guidelines
- One main landing page w/ at least 2 links
- RSS feed, i.e. UCSD News
- XML feed, i.e. UCSD youtube videos
- Incorporate jQuery UI elements
- 10-15 minute presentation
Ranked Technologies

- Ranked each technology based on
  - License Cost, OOTB Feature Set, Industry Standards, Documentation, Ease of Implementation/Adoption, Learning Curve, Time Required to Implement, Maintainability, Scalability, Cross-platform Support, Run in Mobile Browser, Extensibility, Availability/Maturity, End User Usability, End User Accessibility, Integration with CMS

- Avg. Ranking
  - UCLAmobile: 130/150
  - Sencha: 90/150
Recommendation

- UCLA Mobile framework
  - Standards-based lightweight mobile framework
  - Device agnostic
  - Campus apps can leverage the framework without needing to be co-located on the same server.
  - Apps can leverage the framework regardless of whether they are built in JAVA, .NET, PHP, etc.
  - The framework handles the device-by-device planning and implementation, not the developer!
UC-Wide Adoption

- UCLA, UCSD, Berkeley presentation to UC-wide ITLC well received.
- UCLA launched mobile site in Fall 2010.
- UC Berkeley to launch mobile presence based on UCLA framework in Spring 2011.
- UC Riverside and UC Davis are evaluating Collaboration site for code, apps, and documentation just launched.
UCSD Mobile Framework

NEXT STEPS
Setup Mobile Framework

- Set up framework on central server (ACT)
  - Define mobile web styles, decorator
  - Provide usage documentation

Diagram:
- UCSD Mobile Framework
  - ACMS (php)
  - Colleges (php)
  - Student Affairs (.net)
  - Biological Sciences (java)
Current vendor powered m.ucsd.edu
Publish to Mobile Device Stores

- Android Market
- BlackBerry App World
- Windows Phone
Start Writing Apps!

- No need to co-locate on a central server
- Use programming technology of choice
- 1000’s of existing web services and 100’s of web apps ready to be reused and mashed up
- CMS integration