The Mobile Revolution

Frank Feagans, Sr. Director UITS
Factoid – Mobile device usage @UA

iOS: 35,000+
iOS types: 5

Android: 7,000+
Android types: 35
Factoid – AZ Mobile Users

From 1,904 to 35,212 users in the past 12 months
Factoid – Mobile device growth

First iPhone: June 2007
First Android phone: Oct 2008

There are over 400 million iOS and Android devices in use in the US today.

50.4% of US phones are smartphones. (Nielsen, May 2012)
Factoid – Mobile tablet growth

Tablet sales are growing at 50% per year.
By 2014, mobile internet will overtake desktop internet usage.
Factoid – Mobile application growth

76.9 billion mobile application downloads are predicted for 2014. (IDC, 2011)

Average of 41 apps per phone. (Nielsen, May 2012)

Over 1.19 billion workers will be using mobile apps by 2013. (IDC)
Factoid – Mobile service trends

Location-based services are projected to reach 1.4 billion users by 2014. (Gartner, 2011)
Mobile social networking is today’s fastest-growing consumer mobile application category. (Gartner, 2011)
Factoid – Mobile apps trends

Mobile object recognition demand is huge, and devices will make successful solutions readily available, starting 2013. (Gartner, 2011)
Effective web sites TODAY require a smoothly transitioned smart phone and tablet presence as well.
Mobile app design approaches

There are many different options:

- Developed in the native environment \textbf{VS.} a common extensible framework \textbf{VS.} web service links to an external environment \textbf{VS.} a hybrid

- Data resides on the device \textbf{VS.} on a remote database \textbf{VS.} a hybrid

- Apps are updated via downloads from the native store \textbf{VS.} backend links \textbf{VS.} a hybrid

- ...
Mobile app technology choices

There are a vast span of technologies attempting to serve the mobile development industry.
Factoid – No Silver Bullets

Ability to Execute

Completeness of vision

As of April 2012
Reality.

Above-average number of emerging and existing mobile technologies with a benefit rating of transformational or high.
We are at a crossroads.

- Do we “wait and see”?  
- Do we follow the leaders?  
- Do we lead?

We choose to lead.
So how do we proceed?

1. Listen to the experts.
2. Organize optimally for campus.
3. Offer up a valuable service suite.
4. Determine the best mobile app delivery toolkit for UA.
5. Mobilize an institutional mobile community.
1. Listen to the experts.

- Balance application solutions across the “3 E’s”.
  - The user **Experience** provided by the application
  - The **Expertise** of the development & support teams
  - The value expected from the investment **Expense**

- Evolve from being:
  - Technology Providers to Service Brokers
  - A Control Organization to an Enabling Organization
1. Listen to the experts. (continued)

- Empower “Citizen Developers and Analysts” via:
  - Agile APIs & SOA services
  - Rich semantic dictionaries

- Leverage a mobile application development toolkit that is optimized for the institution.
2. Organize optimally for campus.

Establish a coordinated cross campus partnership focused on:

- Driving out a long term Mobile strategy.
- Offering a valuable suite of mobile app services.
- Determining the best institutional app delivery toolkit.
- Establishing a robust, sharing, Best Practice Community.
- Defining appropriate training & delivery models.
- Implementing mutually beneficial faculty relationships and student pipelines.
“It takes a Village” (Organization…)

- **Efficiencies**
  - College groups know their colleges best.
  - Admin groups know their departments best.
  - Central IT can leverage common services such as project management, hosting and managed services support.
  - Domain Subject Matter Experts can come from anywhere.

- **Mobile industry best practice**

- **Technical debt for shortcuts is HUGE**
The Current “Village” (Organization…)

Colleges
- Brian Atkinson (SBS)
- Daniel Du (Eller)
- Michael Griffith (AHSC BioComm.)
- Robert McArthur (CALS)
- Brian Parker (Eller)
- Dr. Jonathan Sprinkle (ECE)

Campus
- Tom Bourgeois (SA/SASG)
- Lance Creed (OTT)
- Lois Eisenstein (Legal)
- Mark Felix (OIA)
- Misha Harrison (SA Marketing)
- Kate Jensen (External Relations)
- Seth Norris (SA Marketing)
- Paul Tumarkin (External Relations)

Students
- Alex Ganz (German Studies)

CIO
- Kay Beasock (Communications)

UITS
- Brett Bendickson (Web services)
- Bernadine Cannon (Service Mgt.)
- Frank Feagans (Enterprise Apps)
- Derek Masseth (Infrastructure & Ops)
- Todd Merritt (Infrastructure)
- Wayne Peterson (Mobile SME)
- Lauren Sekora (Business analyst)
- Katy Shearman (Administration)
- Gary Windham (Architecture)
Partnering with Faculty & Students

(Student pipelines are...)
- Beneficial to the student: class projects, campus employment, career employment.
- Beneficial to campus: mobile app pool of developers, designers, project managers, ...

(Faculty partnerships are...)
- Applied value from student projects.
- Curriculum leverage in app development approach.
- Help with grant proposals, guest lectures, etc.
3. Offer up a valuable service suite.

Offer leveraged services to the campus for:

- Submitting mobile applications with the UA brand.
- Developing custom mobile applications and mobile-friendly web applications.
- Spinning up a mobile-friendly web site rapidly without needing IT experts (“Site in a Box”).
- Hosting of the various campus web and mobile needs.
- Supporting their mobile application user base.
- Managing site patching and scanning.
- Ideation and information sharing.
4. Determine the best mobile app delivery toolkit for UA.

The approach

- Narrow down the choices that best serve campus.
- **Critical:** Balance standardization with innovation.
- Build domain expertise in the choices.
- Nurture best practices across the campus.
- Partner with a few key external service providers for adaptive capacity, subject matter expertise and best practice training.
Narrowing down the choices (Best toolkit…)

Determine the Toolkit menu that most optimally satisfy various customer demands due to cultural & consumer differences.

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Patterns</th>
<th>Frameworks</th>
<th>Toolkit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audience target devices</td>
<td>Identify patterns that satisfy campus needs</td>
<td>Application deployment</td>
<td>Technologies</td>
</tr>
<tr>
<td>Native experience</td>
<td></td>
<td>App run time</td>
<td>Products</td>
</tr>
<tr>
<td>Data use &amp; security</td>
<td></td>
<td>Data residency</td>
<td>Processes</td>
</tr>
<tr>
<td>Application security</td>
<td></td>
<td>Code partitioning</td>
<td>Service brokers</td>
</tr>
<tr>
<td>Network security &amp; dependency</td>
<td></td>
<td></td>
<td>Methodologies</td>
</tr>
<tr>
<td>Time to market</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$$ appetite for Dev/Support</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The University of Arizona
One size won’t fit all (Best toolkit…)

- There are likely 5-10 frameworks required to best represent needs across Campus.

- By 2015, 80% of all mobile applications developed will be native/platform hybrid or mobile-Web-oriented. (Gartner 2012)
  - Mobile applications with features unique to the mobile device (camera, GPS, compass, user preferences).
  - Mobile applications that are a seamless mobile extension of an online presence.
It’s more than development tools (Best toolkit...)

- Cloud services may serve a major role.
- Delivery methodologies are evolving.
- Open source certainly has its place in the solution space.
5. Mobilize an institutional mobile community.

The approach

- Identify/involve players across campus.
  - Developers
  - Designers
  - Dabblers
  - Ideologists
  - Enablers

- Partner with internal & external subject matter experts to share best practices.

- Establish & nurture a Mobile Matters mobile-friendly web site.

- Identify some game-changer projects & tackle them together.
Mobile Matters website launch
(Mobilize…)

MobileMatters-beta.arizona.edu

- Help on designing or submitting mobile applications with UA branding.
- Catalog for all UA mobile applications.
- Highlighted campus wide SIG events.
- Links to department/college groups & SIGs.
- Forum for sharing best practices, collaborating on efforts and issues, and coordinating all SIGs.
- Social networking communications channels. (phase 2)
Mobile Vision

Smart phones
Tablets
Mobile-friendly Web sites

External Partners

Campus Partners
- Faculty
- College IT
- Admin IT
- UITS
- Students

Partner Pavilion

Hosted & managed
Site in a Box
Custom

Showroom Classroom R&D

“Mingle, Learn, Dream, Share”

“App down!”

“Application development & hosting”

Factory

Community Courtyard

Urgent Care

Students
Faculty
Advisors
Staff
Going forward – this afternoon

- **Speakers**
  - Responsive Design – *Bernadine Cannon & Alex Ganz*
  - App Development Best Practices – *Dr. Jonathan Sprinkle & Wayne Peterson*
  - Designing for Mobile & Branding Guidelines – *Paul Tumarkin*

- **Panel Discussion**

- **Mix & Mingle**
Going forward – after today

- Drive out the app delivery toolkit.
- Collaborate with experts on Drupal 7 responsive design best practices.
- Establish inaugural student pipelines.
- Certify a small set of external service partners.
- Grow the UA campus Mobile Community.
Questions?