The Impact of Mobile Technology at the University of Michigan Medical School

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Technologist

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Agenda

• Medical School Background
• Mobile Devices in the Health System
• What kinds of mobile apps being developed?
• Mobile Apps from UMMS/UMHS
• Supporting App Development
• Engagement
UM Medical School

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<table>
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<tbody>
<tr>
<td>Total Faculty</td>
<td>2,828</td>
</tr>
<tr>
<td>Staff</td>
<td>3,760</td>
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</tbody>
</table>

- Instructional Focus
- Research Focus
- Clinical Focus
Mobile Devices within UMHS

<table>
<thead>
<tr>
<th>Device</th>
<th>Count</th>
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<tbody>
<tr>
<td>iPhone/iPad</td>
<td>2,009</td>
</tr>
<tr>
<td>Android</td>
<td>1,076</td>
</tr>
<tr>
<td>Blackberries</td>
<td>999</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>4,084</strong></td>
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Wireless Device Attachments
November 2011

Exchange & BES
Mobile Device Deployments

- 200 iPads purchased by Anesthesiology for faculty and residents (clinical web app and education resources)
- M1/M2 students arriving at UMMS with iPads and asking for education resources to be delivered on that platform
- Installed base of Blackberry devices a major challenge to be considered when developing mobile apps - especially web-based apps
Administrative applications
Faculty Development News & Events

- Delivers News, Events, Resources
- Supports registration, Mailing list signup
- Backend database administration
- Web application
- Developed by Enabling Technologies
M.D.Stat+ • Co-Developed by Application & Information Services Group & Enabling Technologies
• Thin native IOS app for iPhone/iPad
• Local Notifications of status changes
Orange Card Replacement

- Web application
- Developed by MSIS Application & Information Services Group
Education applications
Second Look Series

- Converter for Powerpoint Slides
- Native app for Tablets - iOS & Android
- In-app purchase of additional slide decks
- Developed by Enabling Technologies
Heart Sounds Challenge

- Developed by Multimedia Development
- Released IOS app for iPhone/iPad
3D Woodson

• New 3D technology brings Woodson, a long-time Mott supporter, to life in new hospital lobby

• Bully Entertainment
  – http://www.bullyentertainment.com
Clinical application examples
MiSkinCheck

- Developed for the UMHS Destinations Program by MSIS - Enabling Technologies
- First Release for iPhone/iPad, then for Android
- NeuroSurgery iPad Pilot
- Citrix Receiver to access core clinical Windows-based web applications
- Health System IT Pilot
Supporting Mobile App Development

• Provide a roadmap for design, development and release of a mobile app
  – Design and idea brainstorming - what type of app should be developed?
  – Provide design consulting to build out the complete design.
  – Identify development resources for a project (internal and contract)
  – Help with packaging/marketing and deployment

• GitHub repository of shared code
• Dashboard of mobile app development
• Adhoc app deployment support for testing
RoadMap - concept phase

Customers

- Medical School Faculty
- Medical School Administrators
- Medical School Researchers
- UMHS Departments

Deliverable:
Concept Specification describing the app idea

Concept

- mobile application idea received
- Existing Web site/Desktop App Conversion to Mobile Delivery
- Initial meeting with mobile app customer
RoadMap - design phase

- If no to provide design support:
  - Outside design consultant

- If yes to provide design support:
  - Meeting with customer to explain app design process
  - Design Meetings to develop User Experience and develop wireframes

**Deliverable:**
Product: application design doc
Roadmap - Development phase
Roadmap - Testing phase

- Review testing plans & monitor testing
- Final inhouse acceptance testing
- Develop testing plan for all platforms requested
- Testing & bugfixing

Deliverable: Testing plan

Develop Marketing & Publicity materials
Roadmap - Release & Support

- Meet with Office of Tech Transfer
- Develop release materials for iOS/Android stores
- Submit to the stores and wait for approval, prepare to have to make changes
- Release Marketing & Publicity materials
- Deliverable: Materials for App Store submission, Marketing Publicity

- Identify levels of support (ISSC/MCIT)
- Support Training
- Deliverable: Training Materials, Help Desk documentation, Escalation Procedures, Tier 1/Tier 2 support
# Mobile Applications Characteristics

<table>
<thead>
<tr>
<th>Native Applications</th>
<th>Web Applications</th>
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</thead>
<tbody>
<tr>
<td>local applications</td>
<td>server-based applications</td>
</tr>
<tr>
<td>Objective C, JAVA, (JavaScript**)</td>
<td>HTML5, jQuery Mobile</td>
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<tr>
<td>can access all features of device. e.g. location services, notification services</td>
<td>limited access to device features (** this is changing)</td>
</tr>
<tr>
<td>app performance is critical - 3D Visualization, Gaming</td>
<td>for access to server-based data within an enterprise</td>
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<tr>
<td>Separate apps for each platform - iOS, Android, Blackberry, Windows, Nokia</td>
<td>iOS, Android, Blackberry, Windows, Nokia</td>
</tr>
<tr>
<td>Must deliver to separate Stores</td>
<td>Available to all platforms*</td>
</tr>
<tr>
<td>Updates required for all versions</td>
<td>Updates delivered from one location to all platforms*</td>
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Development Environments

Native Apps Development

• iOS - Objective C/XCode  http://developer.apple.com/devcenter/ios/
• Android - JAVA/Eclipse  http://developer.android.com/sdk
• Windows/ Nokia  
  http://www.developer.nokia.com/Develop/Windows_Phone/
• Blackberry JAM - JAVA  http://us.blackberry.com/developers/

• Cross-platform Development Appcelerator/Titanium  
  http://appcelerator.com
• PhoneGap  
  http://phonegap.com
• Sencha Touch  
  http://sencha.com
Fostering the Community

- GitHub repository of shared code
- Dashboard of mobile app development
- Monthly Developer meetings
- Meeting with ITS Mobile team every month
- Participating in MCIT Mobile Device Support Working Group
Office of Enabling Technologies

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