Mobility Matters: Why Learning Professionals Should Care

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Premise of Today’s session

- Mobile learning continues to focus on using portable computing devices such as laptops, tablet PCs, PDAs, and smart phones with wireless networks.
- Today’s learning professionals are finding that mobile learning initiatives need more than devices and connectivity to achieve success.
Agenda

- Explore the current status of mobility
- Consider the challenges of mobile learning implementations
- Review 10 questions learning professionals should ask themselves to prepare for the challenges and opportunities of learning, anytime, anywhere
A Discussion of Mobile Learning should start with **MOBILITY**

When you say “Mobility” do you mean…

- ✔ Working away from the office
- ✔ Being based in the field
- ✔ Collecting data in the field
- ✔ Personal digital devices in your pocket or purse
- ✔ Pervasive computing
- ✔ Ubiquitous computing
- ✔ Unified communications
- ✔ The ability to move from one academic program to another
A discussion of mobile learning requires some definition

- Mobile learning or m-Learning or mlearning?
A discussion of mobile learning requires some definition

- Mobile learning or m-Learning or mlearning?
- M-learning according to…
  - Wikipedia
    http://en.wikipedia.org/wiki/Mobile_learning
  - Bryan Alexander
    http://www.educause.edu/LibraryDetailPage/666?ID=ERB0416
  - Clark Quinn
    http://www.linezine.com/2.1/features/cqmmwiyp.htm
  - Judy Brown
    http://www.learningwiki.com/221
  - Eilif Trondsen

The list goes on and continues to grow
What Mobile Learning is NOT:

- An online course on a handheld device
- Limited to smart-phones
- Limited to games
- Always connected
- Always interactive
- The same as “Wireless” (although the two get hopelessly tangled)

Mobile learning is part of “eLearning, Next”

- Connecting people with ideas and information and each other
- Anytime, anywhere
- The right information, on the right device, the right context, the right guidance
- Formal (e.g. courses)
- Informal (e.g., mobile performance support, games, community, conferencing and collaboration)
Mobile Learning is for PEOPLE who are mobile

For the on-demand learning needs of connected citizens in an information-centric world

It is *enabled* by networks and devices, demanded by people on-the-go
“A Perfect Storm” Drives Adoption of Mobile Learning

US Mobile Learning Market – Ambient Insight

- US Mobile Learning Adoption
- Smarter Devices & Browsers
- Powerful OS & Applications
- Improved User Interfaces
- 3G and Wi-Fi Networks
- Large Growing User Demographic

Courtesy Sam Atkins, Ambient Insight, 2007
The Carrier Waves: An Extraordinary Range of Wireless Technologies now support Handheld Mobile Learning

*Frequency handoff: New devices can toggle between several frequencies*

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**Data Transmission Speed in Mbps**

- **100**
- **10**
- **1**
- **0.1**

**Signal Range in Meters**

- **1M**
- **10M**
- **100M**
- **1KM**
- **10KM**

**Networks**

- **2G GSM GPRS**
- **2.5G EDGE**
- **3G UMTS**
- **3G HSDPA**
- **3G EV-DO**
- **3G MediaFLO OFDM 802.20x**
- **WiMAX 802.16x**
- **3G EV-DO**
- **DECT**
- **RFID**
- **NFC**
- **ZigBee**
- **Wi-Fi 802.11x**
- **Bluetooth 802.15x**
- **UWB 802.15x**
- **WiMAX 802.16x**

**Deployment Dates**

- **4G Deployed in the US by 2010-2012**

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*Courtesy Sam Atkins, Ambient Insight, 2007*
The Carrier Waves: In 2005 and 2006, 2.5G and 3G Cellular Networks Started Rolling Out in the US

2007

Japan and South Korea

Western Europe

United States

2012

Japan and South Korea

Western Europe

United States

Data

Voice

Courtesy Sam Atkins, Ambient Insight, 2007
Wireless Technologies Used in Organizations

Q: Which of the following wireless technologies and/or services are used within your organization?

- WiFi: 87.4%
- Bluetooth: 60.1%
- SMS: 40.4%
- Mobile broadband: 37.6%
- Global Positioning Systems (GPS): 26.2%
- Push-to-Talk (PTT): 17.7%
- Mobile VoIP: 17.6%

Note: Multiple responses allowed

n = 564
Mobile Device Usage

Q: Which of the following devices do employees in your organization currently use for work-related purposes?

- Notebook PC w/WiFi capabilities: 84.2%
- Smartphone: 67.0%
- PDA: 64.5%
- Mobile phone w/o camera: 63.8%
- Mobile phone w/camera: 59.6%
- Notebook PC w/broadband capabilities: 42.2%
- Tablet PC: 23.0%
- Ruggedized PC: 9.9%

Note: Multiple responses allowed

n = 564
Who Uses Wireless Services?

Q: Which of the following employees in your organization use wireless data services such as email access from either a notebook PC or mobile device?

- Office workers who travel more than 20% of the time: 75.2%
- IT/IS employee: 57.6%
- Office workers who travel less than 20% of the time: 56.4%
- Field workers: 32.3%
- Plant workers: 9.0%

Note: Multiple responses allowed

n = 564
Mobilized Functions in the Enterprise

Q. Which of the following functions have been mobilized within your organization?

<table>
<thead>
<tr>
<th>Function</th>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email/calendar/contacts (n = 269)</td>
<td>93.7%</td>
</tr>
<tr>
<td>Instant Messaging (IM) (n = 131)</td>
<td>45.6%</td>
</tr>
<tr>
<td>Customer service/contact (n = 136)</td>
<td>47.4%</td>
</tr>
<tr>
<td>Sales and marketing (e.g., leads, contracts, order fulfillment, literature, etc.) (n = 106)</td>
<td>36.9%</td>
</tr>
<tr>
<td>Data collection (n = 110)</td>
<td>38.3%</td>
</tr>
<tr>
<td>Forms completion (n = 99)</td>
<td>34.5%</td>
</tr>
<tr>
<td>Time reporting (n = 90)</td>
<td>31.4%</td>
</tr>
<tr>
<td>Asset management, tracking, and logistics (n = 71)</td>
<td>24.7%</td>
</tr>
<tr>
<td>Inventory and supply chain management (n = 57)</td>
<td>19.9%</td>
</tr>
<tr>
<td>Other (n = 25)</td>
<td>8.7%</td>
</tr>
</tbody>
</table>

Note: Multiple responses allowed
Ambient Insight’s Definition of Mobile Learning Products

- Handheld decision support
  - Software tools
  - Technology services
  - Content services
- Location-based learning
- Device-embedded learning
- Packaged content
Ambient Insight’s Definition of Mobile Learning Products

Mobile Learning Products

- Handheld decision support
  - Software tools
  - Technology services
  - Content services
- Location-based learning
- Device-embedded learning
- Packaged content

Mobile Learning Products Specific to Healthcare

- Emergency medical decision support
- Clinical decision support
- Educational "podcast" services
- Content services
- Medical and healthcare reference
- Mobile CME and exam prep

*The US Healthcare Market for Mobile Learning Products and Services: 2006-2011 Forecast and Analysis*
Q11. To what audiences do or will your organization deliver learning through mobile devices in the next twelve months? (Select all that apply.)

<table>
<thead>
<tr>
<th>Audience</th>
<th>Yes, we currently deliver learning through mobile devices</th>
<th>No, but we will deliver learning through mobile devices in the next twelve months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructors, Trainers, or Professors</td>
<td>49%</td>
<td>31%</td>
</tr>
<tr>
<td>Students enrolled in education programs</td>
<td>46%</td>
<td>32%</td>
</tr>
<tr>
<td>Sales representatives</td>
<td>40%</td>
<td>32%</td>
</tr>
<tr>
<td>Customers</td>
<td>39%</td>
<td>25%</td>
</tr>
<tr>
<td>Management</td>
<td>36%</td>
<td>32%</td>
</tr>
<tr>
<td>Newly hired employees</td>
<td>34%</td>
<td>21%</td>
</tr>
<tr>
<td>Executives</td>
<td>30%</td>
<td>28%</td>
</tr>
<tr>
<td>Channel partner sales or service reps</td>
<td>27%</td>
<td>20%</td>
</tr>
<tr>
<td>Consumers</td>
<td>23%</td>
<td>4%</td>
</tr>
<tr>
<td>Customer service representatives</td>
<td>20%</td>
<td>16%</td>
</tr>
<tr>
<td>Factory personnel</td>
<td>15%</td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td>14%</td>
<td>16%</td>
</tr>
<tr>
<td>Retail store personnel</td>
<td>11%</td>
<td>4%</td>
</tr>
<tr>
<td>Warehouse personnel</td>
<td>10%</td>
<td>2%</td>
</tr>
<tr>
<td>Vendors</td>
<td>9%</td>
<td>3%</td>
</tr>
</tbody>
</table>
Q12. Through what type of mobile devices does or will your organization deliver learning in the next twelve months? (Select all that apply.)

<table>
<thead>
<tr>
<th>Device</th>
<th>Yes, we currently deliver learning through mobile devices (%)</th>
<th>No, but we will deliver learning through mobile devices in the next twelve months (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireless laptop</td>
<td>65%</td>
<td>19%</td>
</tr>
<tr>
<td>iPod</td>
<td>47%</td>
<td>54%</td>
</tr>
<tr>
<td>Mobile phone</td>
<td>33%</td>
<td>29%</td>
</tr>
<tr>
<td>Wireless Windows Mobile PDA</td>
<td>32%</td>
<td>1%</td>
</tr>
<tr>
<td>Pocket PC standalone device</td>
<td>30%</td>
<td>14%</td>
</tr>
<tr>
<td>Blackberry</td>
<td>27%</td>
<td>39%</td>
</tr>
<tr>
<td>Wireless Palm OS PDA</td>
<td>23%</td>
<td>29%</td>
</tr>
<tr>
<td>Smart Phone</td>
<td>22%</td>
<td>3%</td>
</tr>
<tr>
<td>Palm OS standalone device</td>
<td>17%</td>
<td>31%</td>
</tr>
<tr>
<td>Treo Smart Phone</td>
<td>14%</td>
<td>43%</td>
</tr>
<tr>
<td>Other</td>
<td>12%</td>
<td>5%</td>
</tr>
<tr>
<td>Other wireless PDA</td>
<td>10%</td>
<td>25%</td>
</tr>
<tr>
<td>Microsoft Origami</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>Sony PlayStation Portable</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>Wrist-wearable PC</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Nintendo DS</td>
<td>1%</td>
<td>8%</td>
</tr>
<tr>
<td>Sony Reader</td>
<td>1%</td>
<td>11%</td>
</tr>
</tbody>
</table>
Q20. What are (or will be) the most important advantages or benefits of mobile learning for your organization? (Select all that apply.)

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Yes, we currently deliver learning through mobile devices</th>
<th>No, but we will deliver learning through mobile devices in the next twelve months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodate learner needs</td>
<td>77%</td>
<td>71%</td>
</tr>
<tr>
<td>Increase learner access</td>
<td>76%</td>
<td>81%</td>
</tr>
<tr>
<td>Increase learner productivity</td>
<td>57%</td>
<td>51%</td>
</tr>
<tr>
<td>Increase speed of delivery of content</td>
<td>54%</td>
<td>59%</td>
</tr>
<tr>
<td>Improve learner performance</td>
<td>53%</td>
<td>47%</td>
</tr>
<tr>
<td>Accommodate learner styles</td>
<td>50%</td>
<td>45%</td>
</tr>
<tr>
<td>Improve learner achievement</td>
<td>39%</td>
<td>31%</td>
</tr>
<tr>
<td>Reduce cost</td>
<td>31%</td>
<td>29%</td>
</tr>
<tr>
<td>Other</td>
<td>9%</td>
<td>6%</td>
</tr>
</tbody>
</table>
Q21. What are (or will be) the most important drawbacks or disadvantages of mobile learning for your organization? (Select all that apply.)

<table>
<thead>
<tr>
<th>Drawback</th>
<th>Yes, we currently deliver learning through mobile devices</th>
<th>No, but we will deliver learning through mobile devices in the next twelve months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited delivery bandwidth</td>
<td>53%</td>
<td>49%</td>
</tr>
<tr>
<td>Screen size of devices is too small</td>
<td>50%</td>
<td>58%</td>
</tr>
<tr>
<td>Learner ability to use devices</td>
<td>42%</td>
<td>52%</td>
</tr>
<tr>
<td>Limited interactivity</td>
<td>37%</td>
<td>53%</td>
</tr>
<tr>
<td>Limited memory of devices</td>
<td>33%</td>
<td>35%</td>
</tr>
<tr>
<td>Variety of devices causes inconsistency</td>
<td>30%</td>
<td>28%</td>
</tr>
<tr>
<td>Other</td>
<td>21%</td>
<td>14%</td>
</tr>
<tr>
<td>Real-time delivery is not possible</td>
<td>21%</td>
<td>14%</td>
</tr>
</tbody>
</table>
Mobile Learning Adoption Challenges
In the US, Internet Use is still PC-based

- According to a new report by Telephia, 34.6 million US mobile phone subscribers accessed the Internet using their mobile phones in 2006.
- With 213 million subscribers, this represents only 16% of the US mobile phone using population.
“Anytime, Anywhere” means Informal Learning, and THAT is hard to measure and make real

- Why NOT more Mobile Learning Adoption in Education and Training Organizations?

  Connecting people with ideas and information and each other

  Anytime, anywhere

  The right information, on the right device, the right context, the right guidance

  Formal (e.g. courses)

  Informal (e.g., mobile performance support, games, community, conferencing and collaboration)

“How much of the content you build is used outside of a formal course?”

72% of content is used in “informal settings”
While sharing self-made mobile content is common…

Almost 10 Percent of European Mobile Users Currently Share Mobile Content with Friends

Fig. 1 Content Sharing on Mobile Phones in Europe

Question: During the past three months, which of the following activities have you conducted at least once on your mobile phone? (Select all that apply.)
Source: JupiterResearch/Ipsos Consumer Survey (9/06), n = 3,680 (consumers with mobile phones, UK, France, Germany, Italy, Spain, and Sweden only)
...the demand for high quality mobile experiences for learning is just getting started
10 Questions

Start Asking Yourself 10 Questions
Answers to these 10 questions will get you started:

1. Why a mobile learning project?
2. What do you *really* want to do?
3. How you know when you have met your goal?
4. What unique result will you achieve?
5. What do you need to get it done?
6. For whom is your mobile initiative intended?
7. What will your stakeholders need to be successful?
8. How are you going to fund it?
9. How are you going to sustain it, and for how long?
10. How will you evaluate your effectiveness?
Answers to these 10 questions will refine your quest

1. Is it a research project for a grant proposal, or is it a response to an RFP?
2. Is it a pilot project or work-for-hire?
3. Who is going to own the work?
4. Is it an interactive team or community network, a broadcast distribution framework or both?
5. Is it going to depend on community produced content or commercially produced content?
6. Is it for formal learning programs, for performance support or for informal learning assets?
7. What kind of wireless network will you employ?
8. Who will provide the service?
9. What kind of reception technologies will be used?
10. Who is going to pay for the equipment, the network and service charges?
Don’t forget about 10 questions about content

1. Who is going to produce the content?
2. Where is the content going to reside?
3. Who is responsible for tagging?
4. Who owns the rights to content?
5. What content product standards will be employed?
6. What content creation tools will be used?
7. What devices will be used for reception?
8. What network will be used for distribution?
9. What content distribution standards will be used?
10. What content management mechanisms need to be in place?
And the list goes on…

- 10 questions about security
- 10 questions about learning assessment
- 10 questions about the user interface
- 10 questions about interaction and experience design
- 10 questions about user support
- 10 questions about content management
- 10 questions about funding
- 10 questions about sustainability
M-Learning and Mobility

Using portable computing devices (such as laptops, tablet PCs, PDAs, and smart phones) with wireless networks enables mobility and mobile learning, allowing teaching and learning to extend to spaces beyond the traditional classroom. Within the classroom, mobile learning gives instructors and learners increased flexibility and new opportunities for interaction. Mobile technologies support learning experiences that are collaborative, accessible, and integrated with the world beyond the classroom.

Questions the EDUCAUSE Learning Initiative (ELI) explores include:

- What is the rationale for implementing mobile learning technologies?
- How does ubiquitous access to a wireless network change the dynamics of learning both in and out of the classroom?
- What are best practices for using mobile learning?
- What end-user support is important for mobile learning? How can it best be provided?

Get an Overview of the Topic

Mobile & Devices

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- Sign up for Mobile & Devices News

200 Million
Flash-enabled devices shipped

300 Flash-enabled device models
As of 02/11/07
View devices

Mobile & Devices home
Supported devices
News and awards
Events
Showcase
Customers
Mobilize Creative Suite & Elements

- Support all creative tools
- Common workflow
- Deploy to any platform
Closing thoughts

- A mobile learner is someone who wants to access information and share ideas anytime, anywhere, any way, all the time on whatever device she or he chooses.

- The strongest value proposition for mobile learning comes from connecting people with idea, information and each other.
Better by Adobe™