Mobile Learning Readiness to Promote World Heritage Site Literacy

Case of Luang Prabang, Lao PDR

Presenters:
Shinobu YAMAGUCHI
Yew Siang POONG
Tokyo Institute of Technology
Background

**Lao PDR Regional Background**
- Agriculture based economy, Least Developed Country
- GDP per capita: USD 883.6
- Surface area: 236,800 KM²
- Population: 6,320,000 [4]
- HDI: 0.524, ranked as 107/134 countries

*Sources: [4], [5]*

**Town of Luang Prabang**
- A mountainous area 230KM from Vientiane
- Capital of Ancient Lao & now as provincial capital
- Selected as UNESCO World Heritage Site in 1995 for its well-preserved townscape & natural environment

*Source: DPL*
Inscription Criteria

Criteria (ii): exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design.
Inscription Criteria

Criteria (iv): be an outstanding example of a type of building or architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history.
Inscription Criteria

Criteria (v): be an outstanding example of a traditional human settlement, land-use or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change.
The Problem

1. Pressure of development & preservation
The Problem
Importance of Preservation Awareness

- To ensure buildings are built/modified in accordance to the Safeguarding and Valorization Plan (PSMV)
ICT for Sustainable Development Management in Luang Prabang World Heritage Site, Lao P.D.R.

Tokyo Tech  DPL  UNESCO

Heritage Database Development

VR Panorama

ICT Center Operation

Geographic Information System

Knowledge Management System
Mobile Phone Ownership Trend

<table>
<thead>
<tr>
<th></th>
<th>Fixed-telephone Subscriptions per 100 Inhabitants</th>
<th>Mobile Cellular Subscriptions per 100 Inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>2.1</td>
<td>33.6</td>
</tr>
<tr>
<td>2010</td>
<td>1.7</td>
<td>64.6</td>
</tr>
</tbody>
</table>

Research Problem Statement

- What are the factors affecting young adults’ intention to adopt mobile learning in Luang Prabang?

Methodology

- Questionnaire survey to students – distributed 484 copies – 365 valid responses (March, 2012)
- Interview with Faculty members
- Souphanouvong University and Northern Law College
Survey Findings 1: Mobile Phone Demographics

1. Devices Owned

<table>
<thead>
<tr>
<th>Device</th>
<th>Frequency (Multiple Response)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Phone</td>
<td>358</td>
</tr>
<tr>
<td>Laptop</td>
<td>188</td>
</tr>
<tr>
<td>PC</td>
<td>29</td>
</tr>
<tr>
<td>Tablet</td>
<td>12</td>
</tr>
</tbody>
</table>

1) Mobile phone ownership exceeds other devices
2) One student may own multiple devices
3) Conformed to trend of mobile phone penetration rate in other developing countries

Mobile phone could be used as a tool for innovative ICT application
Surveys Findings 2: Mobile Phone Use

6. Type of Device Used for Digital Activities

Total multiple responses (N) = 418

1) Laptop PC is used for most of the digital activities.
2) Mobile phone is used on chatting and listening to music more than laptop PC.
3) Some digital activities are performed on multiple devices.
Survey Findings 3: Determinants of Mobile Learning Acceptance

**Interpretation:**

1. *Perceived enjoyment* is the strongest predictor for young adults’ use of mobile learning.

2. Potential adopters’ intention to use depends on how well current *facilitating resources* support the use of mobile phone for learning purpose.

3. *Perceived price* and *self-efficacy* did not emerge as determinants of mobile learning use intention.
Implications

- Emphasize hedonic characteristics and the value of using the mobile learning application

- Provide use assistance/design simple application interface

- Promote usefulness of application within the community – through people with higher status/influence (teachers, peers, etc.)
Conclusion (1)

- Mobile learning as a potential ICT implementation to promote World Heritage Site preservation awareness

Other issue to investigate:
- Design of application - culturally sensitive interface?
- Informal use of mobile learning - motivation?
- Sustainable implementation - continuous development?
Conclusion (2)

Future tasks:

- Develop a fully functional application – consider technology & learning modality
- Examine the impact of learning World Heritage Site through mobile phones – pre & post use of ML
Q&A

- Thank you
ICT Development in Lao PDR

- **ICT Development Index by ITU (2011)**
  - Lao PDR - Ranked as 121st out of 152 countries
  - Categorised as Low IDI country

- **Access sub-index (ICT readiness)**
  - Lao PDR - 123rd out of 152 countries

- **Use sub-index (ICT use intensity)**
  - Lao PDR - 130th out of 152 countries

- **Skills sub-index (ICT skills as indispensable input)**
  - Lao PDR - 117th out of 152 countries
Possible Development

Level of Technology Advance

High

Medium

Low

Smart phones Android/iOS

GPRS/MMS supported phones

Monochrome Display Feature Phones

Predicted Devices

App based - Interactive & Location Sensing - data plan

MMS/WAP based - costs for each transaction

SMS request to & response from server (costs for each transaction)

Sample Applications