#### Feasibility Study on Information Management La Maison du Patrimoine, Luang Prabang



Tokyo Institute of Technology November 16, 2004



## **Tri-partite Organization**

#### • UNESCO

- Coordinating tri-partite collaboration
- Assisting access to data, appropriate people and field survey
- Putting Tokyo Tech in UNESCO network
- Raising funds in collaboration with Tokyo Tech



#### Government of Laos

- Identifying appropriate partner institutions and local government body
- Providing access to the filed research sites

#### <u>Tokyo Tech</u>

- Providing technical assistance in feasibility study
- Developing project proposal based on the feasibility study
- Looking for funds in collaboration with UNESCO 2

## Background information

- Laos PDR
  - 236,800 sq km
  - population 6,068,117
  - GDP per capita \$1,700
  - Agriculture centered
- Luang Prabang Province
  - population
    - province 365,000
    - town 46,000
  - 230km from Vientian
  - Mountainous area
  - Many rivers



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## The World Heritage

- The town of Luang Prabang is inscribed to the World Heritage List in 1995.
  - Its unique town scape is remarkably well preserved, illustrating a key stage in the blending of two distinct cultural traditions. (Source: <u>http://whc.unesco.org/archive/repcom95.htm</u>)
- Substantial increase of tourists
  - More than 60,000 visitors





## The World Heritage: Pros & Cons

- <u>Pros</u>
  - Increased income from tourist
  - More employment opportunity
  - Postivie community identity
  - Improved infrastructure
  - More subsidy
  - International cooperation

- <u>Cons</u>
  - Rapid and unplanned construction
  - Forced desettlement
  - Income gap
  - Environmental destruction
  - Loss of tranquilness
  - Traffic congestion

## **Problems in Luang Prabang**



Unplanned infrastructure development



**Environmental destruction** 

## MAB (Man and Biosphere)

Background information

- UNESCO's Programme on Man and the Biosphere (MAB) develops the basis, within the natural and the social sciences, for the sustainable use and conservation of biological diversity, and for the improvement of the relationship between people and their environment globally. (UNESCO web site, 2004)
- Prohibition of Slash and Burn
  - aggravation of the natural environment caused by increase of population
  - Mass-migration into the town
  - But immigrants also cannot live in the town
    - Creating slums
    - threaten the heritage conservation



Source: Anne Gaëlle Verdier's slides in the meeting at MdP

- Needs of sustainable development covering peripheral area
  - UNESCO encourages the adoption of MAB programme
  - The area of the 7,000sq km along the Nam Khan River is proposed as the MAB site



## La Maison du Patrimoine

- Created in 1996
- 26 staffs including international professionals
- The local representation working closely with the international organizations and relevant local governmental offices.
  - controlling, protecting, restoring and embellishing the listed heritage
  - 2 managing natural conservation
  - ③ developing the marketplace for local people, and
  - (4) coordinating the relationship with international organizations and relevant donors.

## Feasibility Study: Basic Components

- 1. Contribution of Tokyo Tech (at which level?)
  - Planning? Basic design? Detailed design? Testing and operation
- 2. Basic Analysis on Database at La Maison du Patrimoine
- 3. Needs Assessment on Development of Knowledge Kiosk
  - a. Function of Knowledge Kiosk
  - b. Identification of need-based website
    - 1 Content
    - 2 Target users
    - 3 Benefit
  - c. Analysis of technical aspect
    - ① Location of server
    - ② Internet connection
    - ③ Maintenance

## Methodology

- 1. Group discussion and interviews at MdP
- 2. Questionnaires
  - Questionnaire on database system
  - Questionnaire on Knowledge Kiosk
  - Questionnaire at Internet Café owners
  - > MdP officials, Internet café owners, tourists, internet café users
- 3. Visit and Interviews at related entities
  - Urban Development Authorization Agency
  - Department of Communication, Transport, Post and Construction
  - Souphanouvong University
  - e-way Center (communication center under STEA)
- 4. Observation of the sites
  - Baan Xiane Mounang (wooden house restored)
  - Bua Kang Baeng (Eco Museum wooden house restored)

## Database system Initial Analysis

- 1. Review of current status of management of data/information of La Maison du Patrimoine (MdP)
- 2. Identification of problem of database at MdP
- 3. Identification of needs/use of database
- 4. Creation of web site
- 5. Questions on technical aspect
  - Facilities to set the server machine
  - Human resources to maintain the database
  - Expectation on the improvement

## Knowledge Kiosk Initial Feasibility Questions

- 1. Objectives of Knowledge Kiosk
- 2. Main Functions (e.g. internet? Database? Information dissemination?)
- 3. Prospective users?
- 4. Appropriate Information for prospective users
- 5. Possible benefit from Knowledge kiosk
- 6. Appropriate location & connectivity
  - Luang Prabang city
  - Village in MAB site
- 7. Question on connectivity
  - Internet connectivity
  - Mutual connectivity
  - Telephone connectivity

# List of documents available at MdP (1999-2004)

- 1. Architecture and Urbanism Service
- 2. Water and Environment Service
- 3. Socio-Economic Service
- 4. Small museum
- 5. Legal and authorization information
- 6. Administrative Document

## Problem Identification (1) Information Management of MdP

#### 1. Database for Internal use

- Data and information in MdP are not well organized
  - Abundant data is not fully utilized
  - Various sets of data are individually stored and not effectively shared among members
  - Data organization depends on individual effort
  - No experts on database design and management

#### 2. Website for external use

- Information on activities and achievement of MdP are not disseminated
  - ➢ No experts on creating Website
  - Server does exist but may not have efficient access by the external users due to narrow band connectivity
  - No human resource to maintain and update information

## Problem Identification (2) Information Management: technical aspect

- Two major problems
  - Information management for internal use
    - Linkage between available DBs
    - Needs of additional DBs
    - Utilization of GIS
    - Management of different formats of data
  - Web site for public use
    - Preparation of appropriate contents
    - Integration of DB into web site

#### They are partly related but not fully.

### Significance of Database at MdP

- 1. For internal use
  - Easy access to necessary information and sets of data
  - Sharing information among units/professionals
  - Sharing information with local governmental offices
- 2. For external (public) use as Website
  - Accommodating easy access to information by public
    - General public/local community
    - Researchers /students
    - Tourists and business community
    - International organization
  - Advertising the achievement of La Maison du Patrimoine

## Information management in MdP

• Strategic information management by the portal web site linking DBMS



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### Target Users of Website

Target groups	Types of information	Benefit
General public	General Information on LPG Activities of MdP	LPG and MdP known to public
Tourists	Historic, cultural and tourist information	Tourists better equipped Promoting tourism in LPG
Researchers	Specific information e.g. architecture, environment	Academic knowledge Further research
Business people	Regulations Bidding information	Increased business opportunities No need to repeat information
International organization	Management of world heritage conservation activities	Shared knowledge Better coordination
Community people	Authorization process and regulations, good practices	Increased knowledge Raised awareness
Children and youth	Conservation and environmental activities and practices	Raised awareness and getter education

### Basic Analysis on Knowledge Kiosk

- 1. <u>Objectives</u>
  - To provide community an easy access to knowledge as public information
  - To offer community people hands-on experience of computer
- 2. <u>Target users</u>
  - Luang Prabang community people including children
- 3. Location: Bua Kang Baeng (Eco Museum)
  - Could be used as a combination of exhibition of Eco Museum, Information room and refreshment services
  - Constant supply of electricity and telephone connectivity can be provided
- 4. <u>Content of information</u>:
  - Information on MdP
  - Environmental and sanitary information
  - Heritage Information Cultural, Natural, Architectural

### Basic Analysis on Knowledge Kiosk

- 5. <u>Significance</u>
  - Identified as a significant site to provide service to community
  - Relating heritage site to public education
  - Information on environment and sanitation will be provided
  - Differentiating knowledge kiosk from private internet café

## Knowledge Kiosk

- Access to information of local people
  - Knowledge Kiosk can provide benefits of information management to local people
  - Despite many Internet cafes, a few local users
- To develop active reuse of restored architectures in the town
  - MdP state not only conservation but also its innovated reuse are vital
    - Tourist information center, Museum, Skill training center, Meeting place, etc
  - Knowledge Kiosks is one of the functions in reuse
- To ensure the security in the MAB site
  - Promoting eco-tourism



### Obstacle 1: Lack of human Resources

- Few technicians for establishment and operation of network, servers and web site
  - Technicians for PC maintenance is available
    - private technicians, PC shop and ISPs
- Lack of efficient ICT training
  - Some ICT training centers and schools
  - Training contains only basic use of PC
  - Lack of equipments

#### Luang Prabang has potential to retain human resources

- The World Heritage site and the biggest town in the north
- Many development project and buisiness



## Obstacle 2: Insufficient ICT infrastructure

- Difficulty in transportation in the MAB site
  - Transporting equipments and technicians, maintenance, etc
- Electricity
  - Electric power grid is available only along the national routes
  - Require to stop for maintenance every 2-3 weeks
- Internet connectivity
  - Not enough stable and capable for servers: 64-128kbps
  - Lack of Internet Exchange between domestic ISPs (Internet Providers)

#### Remarkable growth of accessibility to ICT

- Cost reduction of equipments: price is same in developed countries
- VDSL permanent connection of two ISPs
- iPSTAR which launched 2004 provide permanent connection more than 512kbps by \$300 per month



## Gaps in IT development



## Further Investigation (1)

- 1. Development of Database
  - La Maison du Patrimoine
  - Prioritizing the information and document to put into database (from questionnaire and discussion)
  - Decide on the linkage between data sets
  - Decide on possibility of introduction of GIS
  - Brainstorming on usage of GIS

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- Survey on use on GIS in other heritage site
- Suggesting linkage between GIS and database

## Utilization of GIS

- Geographical data (current analysis)
  - Heritage area map developed by MdP
    - Some error to be corrected
  - Municipality area map developed in Vientiane
    - Layer structure not available
    - Buildings are not well supported
  - No data available for MAB site
    - Satellite photo, kite, RC helicopter, ...

## Utilization of GIS

- GIS database server
  - ArcGIS : very popular but too expensive (>US\$20,000)
  - Free GIS server : to be investigated
- Feasibility study in Tokyo Tech
  - Building database in Access
  - LP map in AutoCAD
  - \*Is it possible to use data in AutoCAD without GIS software?
  - Investigation of GIS software

Test on DB

and GIS servers

## Further Investigation (2)

- 1. Development of Website
  - La Maison du Patrimoine
  - Identifying the priority regarding content (brainstorming at MdP)
  - Tokyo Tech
  - Suggesting linkage between Website and database
    MdP & Tokyo Tech
  - Working closely with communication officer on building website
  - Deciding on location of server
  - Deciding on appropriate network architecture including internet connectivity

## Further Investigation (3)

- 3. Development of Knowledge Kiosk
  - La Maison du Patrimoine
  - Clarification on objectives and function on Kiosk (Questionnaire and Brainstorming)
  - Appropriate Location in Luang Prabang municipality
  - Content of information
  - Business model (income generation model)

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- Sustainable management modality
- Possible installation

(future activities)

- Future prospect on connectivity
- Inclusion of MAB site (connecting MAB site project)

#### Tentative plans of activities

- 1. Brainstorming session to be held at la Maison du Patrimoine
- 2. Questionnaires to be sent to Tokyo Tech
- 3. Tokyo Tech conducts research & produces summary & inputs on Database and GIS
- 4. Two graduate students sent for internship at La Maison du Patrimoine
- 5. Next meeting in December (Dec.7-9)
- 6. Discussion based on technical report

Additional Information National Policy on ICT (STEA)

Lao PDR Vision

- GOL aims to bring the country into the information age by:
- 1. Increasing general access to ICT with provision of modern telecommunications infrastructure and compute networks
- 2. Fostering enterprise and industry
- 3. Promoting research and development in the fields of ICT
- 4. Developing the necessary human resources and institutional capacities

- 1. Infrastructure and Access
  - Focusing on expanding infrastructure, linking the most rural and remote areas, particularly in the northern parts of the Lao PDR
- 2. Enterprise and Industry
  - Promoting enterprise development in the ICT sector with favorable investment incentives, and creating ICT investment zones
- 3. Research & Development
  - Establishing a National ICT Association (NICTA), a consortium of private sector ICT companies
  - Ensure private-government relationship
- 4. Applications
  - e-government: inter-government connectivity, application of ICT to provide public services (pilot in selected provinces)
  - e-tourism: to promote sustainable tourism to conserve natural and cultural heritage
  - e-banking: integrating ICT in central bank operation to ensure efficient management

- 5. Human Resources Development
  - Develop BS and MS of computer/engineering degrees
  - In remote areas, pilot telecenter programs to ensure opportunities for ICT-enabled learning for those without access to education
  - To promote life long learning and distance education of ICT skills
- 6. Legal Framework
  - Providing legal framework for e-commerce, cyber crime, consumer protection and intellectual property right
- 7. Awareness
  - Implement public awareness program on importance on ICT

- 8. Poverty Alleviation
  - Facilitate application of ICT to reduce disparity related to gender, ethnicity, location
  - Contribution of ICT to National Poverty Eradication Program
- 9. Standardization and localization
  - Promoting digital interchange in the Lao language with Unicode standard for Lao script