A Ubiquitous Service Model for Realization of Sustainable Capacity Development with Spatial Asset Mapping

By Jaeik LIOU
Korea

June 14-19, 2008
FIG Working Week, Stockholm

Research Contents

I. Review of CD and SCD
II. Sustainability Problems and UN Millennium Development Goals
III. U-IT’s role for Sustainable Development in Ubiquitous Society
IV. A Ubiquitous Service Model in Mobile Life
1. Service Oriented Architecture (SOA)
2. Sustainable Business Service
V. A Ubiquitous IT Services for SD in U-City (or Digital City)
VI. Implementation of SCD with Ubiquitous Spatial Asset Mapping
VII. Contributions to UN organizations
Developing capacity is primarily a dynamic, endogenous process that builds upon existing systemic, organizational and individual capacity.


- **Core Issues:**
  - 7.0 Physical Resources – Organizational Level
    - Context (per UNDP Practice Note on Capacity Assessment)
      - Existence and effectiveness of dialogue mechanisms (and other links as appropriate) between the organization and domestic and external stakeholders on issues relating to physical resource management.
      - Evidence (e.g., transparent, participatory, engaged, respective) and frequency of dialogue between the organization and domestic and external stakeholders.
      - Evidence of ability to satisfy and balance the interests of all stakeholders.

- **Cross-Cutting Functional Capacities:**
  - Cross-Cutting Functional Capacities
    - Core Issues
      - Leadership
      - Policy & Legal Framework
      - Accountability
      - Human Resource
      - Financial Resource
      - Environmental Resource
      - Physical Resource
      - Public Engagement
    - Additional Areas of Analysis
      - Budget
      - Manage 
      - Implement
      - Monitor & Evaluate
    - Additional Areas of Analysis
      - Cross-Cutting Capacities
        - Engage Multi-Stakeholder Dialogue
        - Create Vision & Analyze Situation
        - Formulate Policy & Strategy
        - Develop, Manage 
        - Implement
        - Monitor & Evaluate
        - Manage 
      - Cross-Cutting Capacities
        - Engage Multi-Stakeholder Dialogue
        - Create Vision & Analyze Situation
        - Formulate Policy & Strategy
        - Develop, Manage 
        - Implement
        - Monitor & Evaluate
        - Manage 

- **CD indicators & attributes:**

---

**UN Definition of Capacity Building (CB) and Development (CD)**

- **Capacity Building (CB):**
  - Capacity is newly created and is often associated with interventions and activities that are primarily externally driven.

- **Capacity Development (CD):**
  - Developing capacity is primarily a dynamic, endogenous process that builds upon existing systemic, organizational and individual capacity.

- **Transfer of Knowledge:**
  - Technical Cooperation
  - Imported Capacity
  - Existing Capacities

- **Endogenous Knowledge:**
  - Technical Cooperation
  - Knowledge Sharing
  - New Capacities
SCD is defined as sustainable capacity for agent’s ability to perform their functions, ensure better quality of life and, achieve CD through sustainable use of assets, capitals and resources (Liou, 2007)

Sustainability Problems and UN Millennium Development Goals

- Goal 1: Eradicate extreme poverty and hunger
- Goal 2: Achieve universal primary education
- Goal 3: Promote gender equality and empower women
- Goal 4: Reduce child mortality
- Goal 5: Improve maternal health
- Goal 6: Combat HIV/AIDS, malaria and other diseases
- Goal 7: Ensure environmental sustainability
- Goal 8: Develop a global partnership for development

Monitoring & Evaluation

U-IT

Digital Capacity Building
UN MDG Targets & Indicators

Goal 1: Poverty Eradication
Goal 2: Primary Education
Goal 3: Gender Equality
Goal 4: Child Mortality
Goal 5: Maternal Health
Goal 6: HIV/AIDS, Malaria
Goal 7: Environment
Goal 8: ICT & Partnerships

Scorecards and monitoring (tracking 48 indicators)

Efforts (assets, resources) from local and international communities to reach MDGs

(u-IT for Sustainable City)

Ubiquitous IT’s Role for Sustainable Development

Sustainable ICT

Sustainable Development

Green & Blue ICT

Sustainable Urban System

Ubiquitous Sustainable Urban System

u-City image (Digital City)
Celebrating and Challenging
Business Solution for
Harmonious Cities

Challenge 1:
Green Technologies for Cities

Challenge 2:
Water, Sanitation and water
management for healthy
urban living

Challenge 3:
Affordable Land
and Housing

Challenge 4:
Disaster Prevention,
management
and reconstruction

Challenge 5:
The Digital City

Digital City is the ultimate goal of ubiquitous sustainable city

Context & Characteristics of u-City (Digital City)

u-City, an advanced digital city that connects people and the computer systems
anytime, anywhere, will make city life easy and intelligent using cutting-edge
technology such as RFID, USN, BeN, w-Lan etc.

Vision

Convergence Cyber Space and Physical
Space into Ubiquitous Urban Space

New Biz. & Service Creation,
Governance

3 i-City Integrated Intelligent Innovative

Desired IT Project

Convergence

Spaces Things Human Ecology


SVC Infra

E-Government Broadband GIS/UIS RFID/USN IP-USN, IPv6

World Urban Forum
of
UN-HABITAT
November, 2008
Nanjing, China
New Concept for Digital Eco City in Korea

Level of Digital City

Goals & Values

Open City
Intelligent City
Converge City
Human City

etc

APPLICATIONS

WiBro
GIS
BcN
IPv6
RFID/USN
FTTH
SoC

u-Town (Star City)

(Kwang Kyo, u-Eco City)

Promoting Government Pilot Project in Incheon City, Korea

2007 MIC u-City Test bed Pilot Project

City Parking Information Service
u-Intelligent Zone Service
City Control Center
City Facility Management
Implementation of SCD with Ubiquitous Spatial Asset Mapping

Challenges and Futures of UN-HABITAT

1. Understandings of Global City Agenda
   1-1: The City coping with informal hyper-growth
   1-2: The City managing dynamic growth
   1-3: The Mature city coping with ageing

2. Sustainable Urban and City Planning
   Common issues of Global Cities towards u-City (Eco Digital City)
   (Mexico Mega City) (Suburban in Seoul)
   London Millennium Village

(Sust. City )

UN-Habitat for Digital City

(Arabianranta, Helsinki)
Possibilities of Digital City in Europe

Urban Renaissance UK: New East Manchester

Urban Renaissance Europe: Amsterdam, Java Island
Edge City, European Style: Amsterdam Zuidas

Paris Orbitale: Creating a New CBD  →  Smart CBD

Thames Gateway: Stratford 1999, 2012  →  Smart City ??

Eastern Quarry to Ebbsfleet Valley, 2015
Contributions to UN and Future Works

- Review of CD and SD for SCD
- U-IT for Sustainable Development
- Ubiquitous Service Model based on SOA
- New approach to Sustainable Business Service Model
- u-IT Services for SCD in u-City (Digital City)
- Could u-IT and its Service Model effectively assist CD and SD?
- Sustainable Business Service could be regarded as a goal of SCD?
- u-IT (or Digital City) for SD in UN organizations (UNHABITAT, UNDP, UNEP, etc) and national governments