9th October, 2008

Utilization & application possibilities of UBB in Ubiquitous computing environment

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- Current deployment
- Towards a Ubiquitous Computing Framework
- Utilization of UBB in ubiquitous computing environment
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What is Ubiquitous Computing?
‘Ubiquitous’ & ‘Ubiquitous Computing’

Ubiquitous:
existing or being everywhere, esp. at the same time; omnipresent

Ubiquitous Computing:
- Computers everywhere.
- Making many computers available throughout the physical environment, while making them effectively invisible to the user.
- “Third Wave of computing. “
- Introduced by Mark Weiser in 1988 at the Computer Science Lab at Xerox lab.
What is Ubiquitous Computing?
The 3\textsuperscript{rd} Spatial Revolution

1. Physical Space (City)

- Bank
- Fire dept.
- Hospitals
- Restaurants
- Shops
- School
What is Ubiquitous Computing?
The 3rd Spatial Revolution

1. Physical Space (City) >> 2. Electronic Space (Information)

Web
Bank
Hospital
Fire Dept.
School
Restaurant
Store
City
What is Ubiquitous Computing?
The 3rd Spatial Revolution

1. Physical Space (City)  >>  2. Electronic Space (Information)
   >>  3. 3rd Spatial Rev. (Ubiquitous)
What is Ubiquitous Computing?

The Market

U-Museum
U-Coffee Shop
U-Restaurant
U-Home

Ubiquitous Service Model Development

Museum
Experience Centers
Coffee Shop
Shop
Restaurant
City
Home
What is Ubiquitous Computing?

**u-City**

**u-Incheon**
- High class u-City based on development of international free economy zone
- Effective international business environment

**u-Hwasung**
- ITS, Home NEtwork, GIS, BIS

**u-Daejeon**
- u-Cluster, u-Expo, u-Wellbeing, u-Smartcity

**u-Jeonju**
- u-Culture
- Futuristic city with tradition

**u-Gwangju**
- Gwangju as a cultural capital

**u-Paju**
- u-Public, u-Living, u-Experience, u-Mobile city

**u-Bucheon**
- Transition to u-society
- u-Traffic, u-Culture, u-Environment, u-Safety

**u-Yeongi**
- Ubiquitous administrative complex city
- Integration of smart Street Furniture with unified control center

**u-Busan**
- u-Port, u-Convention, u-Traffic, u-Health

**u-Jeju**
- U-Tour
Current Deployment sites

- U-City
- U-Convention
- U-Experience Center
- U-Café
Current Deployment sites
2009 Incheon World City Fair

Organizer
Committee for Incheon world city fair

Duration

Major Tasks
Service Operation system based on ubiquitous computing for the world city fair
> Ubiquitous computing based user experience service models

Progress
> 2007.06.24. : Project initiation
> 2007.07.30. : commence Basic concept design
> 2007.10.31. : complete Basic design
> 2008.11. : Development/integration begins
> 2009.08. : Event begins
Current Deployment sites
2009 Incheon World City Fair

Service Scenario Example – Regular users

1. Mobile Phone Registration
   - Expo Pass
   - Mobile App.
   - USL
   - Personalized Info.

2. Entrance & Field Registration
   - Reservation
   - Customized Agenda
   - USL

3. Reservation
   - Intelligent guide

4. Tour Assistance
   - Expo Pass
   - Info Center
   - Intelligent Signage

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### Current Deployment sites
2009 Incheon World City Fair

#### Service Scenario Example – Regular users

<table>
<thead>
<tr>
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<th>Contents Conversion</th>
<th>Attraction Reservation</th>
<th>Emergency</th>
<th>Interactive Media Show</th>
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</tbody>
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Current Deployment sites
2009 Incheon World City Fair

Service Scenario Example – Operators

1. Corporate Management
   - Corporate Registration
   - Work Flow Management

2. Signage Management
   - Signage Error
   - Mobile Manager
   - Replace Controller

3. Field Management
   - Task processing at field

4. Lost Child
   - Found Child
   - Check Tag on Child
   - Arrange meeting
Current Deployment sites
2009 Incheon World City Fair

Service Scenario Example – Operators

5 Emergency

Report Emergency

6 Media Show

Program Media Show

USL

Action

Manage Interactive Data

Completion
Current Deployment sites
2009 Incheon World City Fair

U-Tour
Current Deployment sites

U-City

U-Convention

U-Experience Center

U-Café
Current Deployment sites

Jeju ICC u-Convention System

Organizer

Jeju International Convention Center (ICC) (KT)

Duration


Major Tasks

- Modified the convention operation process of International convention center using Ubiquitous computing technologies
- Remodeling of experience space according to ubi. Comp. services
- Implementation of Location based customized services using Ubiquitous service platforms and location sensors

Progress

- 2006.08.14. : Selection of business partner (KT Consortium)
- 2007.03.15. : Contracting
- 2007.03.20. : Development commences
- 2007.08.31. : Project completed
Current Deployment sites
Jeju ICC u-Convention System

1. Information Experience Center

Introduction(Sky)
Visualization of ICC Jeju

Information(Land)
Event histories of ICC Jeju

FUN(Sea)
Fun experience items
Current Deployment sites
Jeju ICC u-Convention System

2. Conference Service Management System (CSMS)
Current Deployment sites
Jeju ICC u-Convention System
Current Deployment sites

U-City

U-Convention

U-Experience Center

U-Café
Current Deployment sites
Paju Ubi-park

Organizer
Korea national housing corporation (LG Ad. / KT)

Duration
Jul. 2007. ~

Major Tasks
> Exhibition concept design using Ubiquitous Computing technology
> Management & Operation system development
> Implementation of Ubiquitous Service platform

Progress
> 2005.11. : Developer selected
> 2006.12.25. : Development contract
> 2006.12.30. : Commence development
> 2007.8.30. : Facility opened
Current Deployment sites
CNC High Speed Internet Experience Center

Organizer
China Network Communication (KT China)

Duration

Major Tasks
- Design of future lifestyle based on ubiquitous computing for Chinese National Telco.
- Service modeling & experience system implementation

Progress
- 2006.8.30. : Selection of operation partners
- 2006.11.8. : Contracting
- 2006.10.25. : Commence Development
- 2007.6.31. : Facility opened
Current Deployment sites
CNC High Speed Internet Experience Center
Current Deployment sites
Timothy’s world coffee u-Coffee shop

U-City
U-Convention
U-Experience Center
U-Café
Current Deployment sites
Timothy’s world coffee u-Coffee shop

Organizer
Timothy’s World Coffee

Duration
May 2007 ~

Major Tasks
- Install digital picture frames in multiple commercial coffee shop franchise
- Service contents planning & development

Progress
- 2007.5. : Basic design
- 2007.5.20. : Commence development
- 2007.6.02. : Open
Ubiquitous Computing Framework

Ubiquitous Computing Application

Context Management

Storage & Streaming

Service & Subscription

Computation Sharing

Registration & Discovery

Sensor
- RF ID
- Motion Sensor
- Bio Sensors
- LBS Sensors

Display
- PDP/LCD panel
- Intelligent Signage
- F-OLED
- Intelligent Station
- Portable Info. device

Network
- WiBro
- GRID, Mesh
- P2P

Ubiquitous Computing Framework
Need for a service platform

**Existing Space**
- Models, Panel
- Independent Management
- Individual Item

**Ubiquitous Space**
- Various Media
- Inter Device Integration
- Ubiquitous network
- Display, Sensor

---

**Increase In Op. Cost**

**High cost for service Upgrade**

**Constant need for new items**

**Spatial Operation System is needed**

- Device Management system to reduce cost for spatial information sys.
- Operation sys. For media management
- Operation sys. That supports concurrent eng.
Ubiquitous Computing Framework
Service platform overview

Before USP

Adopting USP

Integrated Solution for Ubiquitous Service & Space Management
USP (Ubiquitous Service Platform) is an integrated solution that manages service devices (Display, Sensor, service elements, contents, etc.). USP consists of a USP Server, USP Middleware, and USP Management Tools.

Remote System Management
USP (Ubiquitous Service Platform) enables the remote management of devices in a ubiquitous environment. It is highly cost effective, and reduces the redundant operation costs.

Supports various techniques for exhibition
USP (Ubiquitous Service Platform) defines ‘Rules’ among Devices (Display, Sensor) in a given space, which makes it possible for the system to recognize the semantic of a given service.
Expected Benefits

- Easy management of Ubiquitous Space
- Convenient Service Upgrade
- Capable of adopting various 3rd party solutions
- Easy to use
Utilization of UBB in Ubiquitous Computing environment

High Speed connectivity

Ubiquitous Computing Framework

Sensor
- RF ID
- Motion Sensor
- Bio Sensors
- LBS Sensors

Storage & Service & Computation
- Context Management
- Streaming
- Subscription
- Sharing

Registration & Discovery
- Sensor
- Display
- Network
- RF ID
- Motion Sensor
- Bio Sensors
- LBS Sensors
- PDP/LCD panel
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Utilization of UBB in Ubiquitous Computing environment

High Speed connectivity

Ubiquitous Computing Framework

Ubiquitous Computing Application

Storage & Service & Computation

Context Management

Streaming

Subscription

Sharing

Registration & Discovery

Sensor

• RF ID
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PDP/LCD panel

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• Intelligent Station
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Network

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RF ID

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Utilization of UBB in Ubiquitous Computing environment

High Speed connectivity
Utilization of UBB in Ubiquitous Computing environment
High Speed connectivity

Ubiquitous Computing Framework

Consumer
Service
Registration & Discovery
Streaming
Sharing
Context Management
Storage & Computation

Sensor
- RF ID
- Motion Sensors
- Bio Sensors
- LBS Sensors

Network
- WiBro
- GRID, Mesh
- P2P
- Portable Info. device

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Conclusion
Ubiquitous Computing...not a hype

Draft
<table>
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<tr>
<th>Corporate Name</th>
<th>Ubidas Co., Ltd.</th>
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<tbody>
<tr>
<td>CEO</td>
<td>Yoon, Seung Sik</td>
</tr>
<tr>
<td>Established</td>
<td>17 August, 2005</td>
</tr>
<tr>
<td>Location</td>
<td>Yoon design Bldg., 29-22 Jamwon dong, Seocho Gu, Seoul, Korea</td>
</tr>
</tbody>
</table>
| Main Business       | - Consulting & development of Ubiquitous Computing Systems  
|                     | - Software development |
What We Do

USE Ubidus

Ubidus develops & generates **Ubiquitous User Service models** for clients who are willing to differentiate their business through Ubiquitous Computing Technologies. We also provide **System Management services**, making us a total **Ubiquitous Service Enabler (USE)**.

---

1. Supplies client with feasible Ubiquitous Service models,

2. Develops a base solution that can enable an effective implementation of ubiquitous computing systems,

3. And implements a Ubiquitous Service environment.

4. We also provide System Management Services
What We Do

1. Service Modeling

Clients

- Museum
- Commercial Space
- Public Domain
- Operation & Management

Service Modeling

- Sustainable Service Models
- Self-Sufficient Service Models

- Drafting of Total Budget & Operational organization
- Estimation of total business development schedule

CEP (Creativity Enhancement Program)
What We Do

Research & Development

Clients

- Museum
- Commercial Space
- Public Domain
- Operation & Management

Provide service models

Service Modeling

Research & Development

Development of Base solution that enables efficient Ubiquitous Service environment

UbiTools™
(Ubiquitous Service Platform)

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What We Do

Field Implementation

Clients

- Museum
- Commercial Space
- Public Domain
- Operation & Management

Service Modeling

Research & Development

Field Implementation

Effective implementation of Ubiquitous Service Environment

Utilize base solution

Establish collaborative development structure with 3rd Party developers

Professional Partner Network

provide service models
**What We Do**

4 System Management

**Clients**

- Museum
- Commercial Space
- Public Domain
- Operation & Management

- Provide Service Models
- Remote Management
- Effective implementation of Ubiquitous Service Environments
- Provide Service management education
- Deploy Service/System manager

**UBIDUS**

- Service Modeling
- Research & Development
- Field Implementation
- System Management

**UbiTools™** (Ubiquitous Service Platform)

Utilize base solution
Core Competence
Our Competence Factors

**UbiTools™**
(Ubiquitous Service Platform)
> Base platform for Ubiquitous Service Development
> Optimized structure for Expansion & 3rd party integration
> Framework that minimizes cost & schedule for ubiquitous service development
> Market proven, market share #1

**CEP**
(Creativity Enhancement Program)
> Unique service excavation program that includes education program about relevant market, Cross domain Idea generation tool, and Technical feasibility assessment
> Program than enhances the quality of Ubiquitous Service Model development
> Market tested Toolkit

**Partner Network Management**
> Partner Management program that includes partners in Interior construction, System implementation, and Solution providers
> Evaluation of partners after each project which manages an effective Partner pool
> Major International/Domestic Partner DB