Home Network and Its Related Service

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Home Network Overview
Concept of Digital Home

- Convenient Life
- Remote Medical Treatment
- Crime Prevention
- Safe Life
- Electronic Civil Petitions
- Remote Education
- Satellite Network
- Private Information Management
- Remote Meter Inspection
- Broadcasting Network
- Interactive DTV
- Mobile Network
- Broadband Internet Network
- Anytime
- Anyplace
- Anymedia
- Anyservice
- Economic Life
- Home Network
- Home Shopping
- Energy Management
- Network Games
- Anywhere
- Home Banking
- Home Network
Digital Home Realization

Digital@Home

Digital@Home is content provider & consumer

Digital@Government

Digital@Office

Digital@School

Digital@Vehicle

Digital@Street
Home Network Component

Contents & Service

Service

Convenient life
Secure life
Happy life
Economical life

Application
Middleware

Jini
HW
HAVi
uPnP
Multimedia
MPEG2, 4

O/S

Device

Appliance/device

Control
AV
Data

gas, electricity, water, heating
Security sensor, light
Audio, DTV, DVD, game box, Set-top Box
PC, printer, fax, video-phone
freezer, kitchen good
PDA, web-pad, camera

Home server

Home bridge

Home gateway

Infrastructure

Wired Home Network
Wireless Home Network

Power line
PLC
HomePNA, VoIP
IEEE1394, USB, PCI, Serial, Ethernet
HomeRF
Bluetooth
Wireless LAN
802.11a, b, g

Wired access
Wireless access

PSIN
ISDN
xDSL
Ethernet
FTTH
HFC
satellite
Mobile net
B-WLL

Building
Piping
Wiring

Terminal box
Home terminal, village terminal, MDFF

Privacy

Device Security

Intrusion Blocking

Security

Building
Piping
Wiring

Terminal box
Home terminal, village terminal, MDF
## Major Services on Home Network

<table>
<thead>
<tr>
<th>Service</th>
<th>Summary</th>
<th>Service Type</th>
</tr>
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</table>
| **Home Automation**     | Automatic and remote management of various convenient facilities at home| ◇ Home appliances control/ lighting devices control  
◇ Digital meter inspection/ energy management  
◇ Automated entrance/exit control |
| **A/V Service**         | Digital audio/video broadcasting and various extra services             | ◇ Digital satellite broadcasting  
◇ VOD/AOD/GOD services |
| **Data Service**        | Information providing services such as news, weather, fortune telling, etc., and transaction processing services such as T-Commerce, etc. | ◇ SMS/MMS  
◇ Messenger  
◇ News/Weather/Fortune Telling/ T-commerce |
| **Application Service** | Remote medical consulting with a doctor and health examination/ Health management services | ◇ Remote medical consulting  
◇ Health examination/ Health management |
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| Internet Service         | Online and TV services on the Internet by using broadband Internet network | ◇ Broadband Internet services  
 ◇ Internet TV                                                                  |
| Home Security System     | Safety services through various sensors (UV detectors, front door magnetic detectors, gas detectors) | ◇ Front door detection/ Fire detection  
 ◇ Gas/ short-circuit detection  
 ◇ Emergency notice/surrounding areas detection                               |
| Public Service           | Public services through connection between the national information network and the administration network | ◇ Internet administrative services  
 ◇ T-Government  
 ◇ Roads/transportation/location information services                           |
Home Network Trial Projects
Industry Dynamics

“Triple Play Service”

**Telco(Mobile)**
- Telephone Svc.
- Telecom area
- Mobile InternetSvc.

**Catv**
- Broadcasting service
- Broadband Internet service
- Telecom area
- Broadcasting area

**Telco(wired)**
- Broadband Internet
- Telephone(VoIP)
- HA-based digital home svc.

**Digital Home**
- Broadband Internet
- Telephone Svc.
- Broadcasting Svc.
- Telecom area
- Broadcasting area (svc. Not avail.)
Why Home Network is Important

• Home is the source of New Info-comm services
  - Mobile, Home, Office(Work)
  - Many info-comm devices at the Home
  - New service chances from Home

• Home Network (Digital Home) has ‘Integrated’ feature itself, once introduced then huge impacts on industries
  - Construction, Home Appliances, Energy, Telecom, Broadcasting(Cable), Security, etc

• Broadband Home Access is one of the BcN’s Goal
  - Quality Guaranteed Service can change people’s life style in the Future
**Vision**

**10M households Home Network diffusion**

- **Convergence Service**
  - telecom/broadcasting/internet
  - state-of-art tech. development

- **IT growth power**
  - market environment for strategic industry
  - BT, NT, intelligent service robot, etc.

- **Broadband service**
  - Ubiquitous environment standardization

- **Home digitalization**
  - quality of life
  - Life Style changes

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**Trial project cooperation with 2 consortium**

- Service model development
- Broadband access(wired, wireless)
- Device/service Standardization
- Home network emblem
- Long-term tech. development
- Consolidate legislation
Goal

- Service model development, market promotion
- Verify Compatibility and interoperation among various types of devices, vendors, services
- Make people realize “home network” is easy to use and useful as commodities

How

- Each consortium consists of various industry players
  - participation of major players from a variety of industries such as construction, home appliance, telecom, broadcasting companies
- Matching fund b/w Gov.: private consortium (1:2+)
- Results of trial projects transferred to Standardization activities
Plan by Stage

- **1st stage**: 2003. 7 ~ 2004. 12
  - Service model development (home network enabler)
    - Based on existing IT infra, apply existing tech.
    - Web service on Various non-PC devices
  - find compatibility issues & how-to-solve

- **2nd stage**: 2005. 1 ~ 2007. 12
  - Enhanced Service model development
    - Based on BcN, Ubiquitous & IPv6
    - User friendly services with Intelligence, voice-video recognition
  - apply & verify compatibility solution from 1st stage
Roles

**MIC**
- Long term Plan
- Policy direction

**PM(NCA)**
- contract with consortium
- project management
- assessment support

**Cooperation committee**
- consortium selection/assessment

**Consortium (A)**
- develop service model
- provide service
- diffusion & PR

**Consortium (B)**
- develop service model
- provide service
- diffusion & PR
1st Stage Trial Project

Government driven trial project to find Killer Application

- **Region**: 5 major provinces including capital city area
- **Users**: 1,300 homes (Apartment complex, private house)
- **Providers**: 2 consortium (KT, SKT) 80 participating companies
- **Funding**: 32.5 Million (Government: 4.5M, Consortium: 28M)
- **Service**: 45 services (HA, Home security, Interactive DTV, Infotainment)
Consortium Status

<table>
<thead>
<tr>
<th>Category</th>
<th>K</th>
<th>T</th>
<th>S</th>
<th>K</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding</td>
<td>15M (Government 2M)</td>
<td></td>
<td>17M (Government 2M)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partners</td>
<td>42 companies &amp; organizations</td>
<td></td>
<td>37 companies &amp; organizations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Object</td>
<td>700 homes</td>
<td></td>
<td>600 homes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Region</td>
<td>Seoul area(8 sites), Daegu(2 sites), Gwangju(2 sites)</td>
<td></td>
<td>Seoul area(5 sites), Daejon(1 sites), Busan(1 sites)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>21 services</td>
<td></td>
<td>24 services</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Partners & Roles

<table>
<thead>
<tr>
<th>Category</th>
<th>K T</th>
<th>SKT</th>
<th>Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telecom</td>
<td>KT, KTF</td>
<td>SKT, Hanaro telecom</td>
<td>Network &amp; Platform</td>
</tr>
<tr>
<td>Broadcasting</td>
<td>KBS, MBC, Skylife</td>
<td>SBS, CJ Cable Net</td>
<td>Contents, Convergence technology</td>
</tr>
<tr>
<td>Construction</td>
<td>Samsung, Hyundai Construction</td>
<td>Daewoo, Lotte, LG Construction</td>
<td>Site, home infra building</td>
</tr>
<tr>
<td>Appliance</td>
<td>Samsung Electronics, Linnai</td>
<td>LG Electronics, Daewoo Electronics</td>
<td>Appliance &amp; device compatibility</td>
</tr>
<tr>
<td>Solution</td>
<td>Komax, S-one, Hyundai Home shopping</td>
<td>SKC&amp;C, Bit Computer</td>
<td>service, technology development &amp; deploy</td>
</tr>
<tr>
<td>Local Gov.</td>
<td>Daegu city office, Gwangju city office</td>
<td>Busan city office, KU hospital</td>
<td>PR, Administrative support, public service support</td>
</tr>
</tbody>
</table>
# Trial Project Services

## KT Consortium
- **Interactive DTV Service**
  - T-Commerce
  - T-Poll
  - T-Edu.
  - T-Mobile
  - T-Gov.
  - ESG

## SKT Consortium
- **Remote control**
- **Intelligent robot automatic control**
- **Remote meter inspection**
- **Electricity, gas, water supply**
- **HDTV, network game, personal broadcasting**
- **Movies, EOD, COD**
- **Security, remote monitoring, officers dispatch**
- **Health management**
- **Pets, children, the elderly, etc.**
- **Short-circuit, water leakage and gas leakage deterrence**

## Infotainment Service
- **Smart Card**
- **Local information, domestic information management**
- **Customized Information**
- **Customized A/V**
- **Network games**
- **IP-multicast Broadcasting**
- **Entertainment**
- **VOD**
- **Home safety**
- **Remote medicine**
- **Protection**
- **Fire prevention**
- **Health management**

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**Trial Project Services**

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- Entertainment
- VOD
- Home safety
- Remote medicine
- Protection
- Fire prevention
- Health management
Trial Project Services

**KF Consortium**

- **Medicine/Health**: Health exam/health management, remote medical consulting
- **Home Automation**: Living devices control, information home appliances, visitors
- **Energy management, remote meter inspection**
- **Home Security**: Home viewer/Home monitoring
- **Intrusion detection and officers dispatch/fire prevention and officers dispatch**

**SKT Consortium**

- **Communications and messaging**: VoIP, wired/wireless connected video conference
- **SMS, MMS**
- **Information Providing**: Local information, customized information, remote education
- **Remote e-commerce**: T-Commerce, T-banking, T-stock
- **Telematics**: Bus schedules, vehicle security, vehicle anti-theft
- **Public services**: e-Government services
Device Location in Home

- Outdoor Network
- Disaster Prevention/Intrusion detection
- Home viewer
- Device control consent/switch
- Home Gateway
- STB
- IR
- Tele-medicine/consulting
- HA
- Intelligent Running machine
- WLAN AP
Service UI (example)

- Interactive DIV service: ACAP data broadcasting standard

- T-Commerce

- T-Mobile

- T-Poll

- T-Education
Appliance (example)

- Pet care
- Digital door lock
- Gas control
- Tele-medicine
Compatibility Issue

- **R/G**
  - KTF wireless access
  - Internet access (KT consortium)
- **S K T wireless access**
  - Internet access (SKT consortium)
- **Samsung appliance**
  - (XML, SOAP based) (UPnP based)
  - (S-Cube based) (LnCP based)

**B/w**
- B/w Wireless internet & Home network platform
- B/w home network platform & home gateway
- B/w home gateway & home device (PLC, Ethernet, wireless)
Expected Result

Home : Pleasant & Convenient Info. Life Space
Individual : Real Digital Life

"Today    Home Network     Tomorrow"
Expected Result

Emergency patient care
Disaster prevention
Auto-driving system
Realistic info. Svc.
5-sense info game

IPv6, Sensor, RFID-Tag

BeN

IPv6, Sensor, RFID-Tag

Home Network Smart town

aviation
military
Street, G. H.
Environmental plant
Transportation
Environmen
t

expected result
Thank You!