Siemens Smart Home Solutions

Lutz Gärtner, Corporate Project Manager Siemens Smart Home

Totally Integrated Home Conference, Brussels, 15.03.2006
Agenda – Siemens Smart Home

Introduction, market and consumer demands

Siemens Smart Home strategy

Gigaset Home Control

Smart Home Solutions by SURPASS
Smart Home: Vision and Reality
### Market restraints and drivers

<table>
<thead>
<tr>
<th>Prior market restraints</th>
<th>Market drivers today</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low consumer acceptance</td>
<td></td>
</tr>
<tr>
<td>Complex, technology-oriented solutions</td>
<td></td>
</tr>
<tr>
<td>No &quot;must have&quot; applications</td>
<td></td>
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<tr>
<td>High start-up and operation costs</td>
<td></td>
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<tr>
<td>Low push by partners / installers</td>
<td></td>
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<tr>
<td>Installer skill shortage</td>
<td></td>
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<tr>
<td>Missing / diverging standards and trade associations</td>
<td></td>
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<tr>
<td>No provider of real cross-applicational integration</td>
<td></td>
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<tr>
<td>Changing lifestyles</td>
<td></td>
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<tr>
<td>High internet affinity</td>
<td></td>
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<tr>
<td>Increased importance of entertainment</td>
<td></td>
</tr>
<tr>
<td>Increased importance of safety and security</td>
<td></td>
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<tr>
<td>Digitalization of TV (DVB-T, DVD)</td>
<td></td>
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<tr>
<td>Decreasing cost for technology</td>
<td></td>
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<tr>
<td>Technological improvement and availability</td>
<td></td>
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<tr>
<td>(e.g. wireless solutions, broadband penetration)</td>
<td></td>
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<tr>
<td>Increased corporate cooperation to push standards</td>
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</tbody>
</table>
Extensive Primary Market Research indicates the emerging Smart Home market.

Fundamentals: Smart Home offerings have to provide technical solutions for the customer’s archetypal or fundamental needs:

- **Human Bonding**
  - "Feel warmth",
  - "Share pleasureful moments"

- **Territorial Protection**
  - "Be in control"
  - "Feel safe"

- **Unconstrained Self**
  - "Be yourself"
  - "Intimate", "Resourcing"

- **Interaction, Entertainment for a Connected Life**

- **Security, Convenience for Control over Life**

- **Well being, Healthy retreat for Life Quality**
In 2010, 5% of all Western European homes are estimated to be smart.

Cumulated number of xDSL lines, networked and smart homes, Western Europe, in mil.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Households</th>
<th>Number of xDSL lines</th>
<th>Number of networked homes (% of xDSL lines)</th>
<th>Number of Smart Homes (% of DSL households)</th>
<th>Number of Smart Homes (% of total households)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2006</td>
<td>181</td>
<td>43</td>
<td>16 (37%)</td>
<td>0.2 (0.4%)</td>
<td>0.1 (0.5%)</td>
</tr>
<tr>
<td>FY 2007</td>
<td>182</td>
<td>52</td>
<td>22 (43%)</td>
<td>0.9 (1.7%)</td>
<td>0.5 (1.2%)</td>
</tr>
<tr>
<td>FY 2008</td>
<td>184</td>
<td>59</td>
<td>28 (47%)</td>
<td>2.2 (3.7%)</td>
<td>1.2 (1.5%)</td>
</tr>
<tr>
<td>FY 2009</td>
<td>185</td>
<td>66</td>
<td>34 (51%)</td>
<td>5.4 (8.2%)</td>
<td>2.9 (4.9%)</td>
</tr>
<tr>
<td>FY 2010</td>
<td>186</td>
<td>74</td>
<td>40 (54%)</td>
<td>10.0 (13.5%)</td>
<td>5.4 (8.5%)</td>
</tr>
</tbody>
</table>
Agenda – Siemens Smart Home

Introduction, market and consumer demands

Siemens Smart Home strategy

Gigaset Home Control

Smart Home Solutions by SURPASS
Siemens covers all relevant application fields of an intelligent home

<table>
<thead>
<tr>
<th>Category</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information and Communications</td>
<td>€18.5 bn</td>
</tr>
<tr>
<td>Automation and Control</td>
<td>€21.1 bn</td>
</tr>
<tr>
<td>Power</td>
<td>€12.3 bn</td>
</tr>
<tr>
<td>Transportation</td>
<td>€13.8 bn</td>
</tr>
<tr>
<td>Medical</td>
<td>€7.6 bn</td>
</tr>
<tr>
<td>Lighting</td>
<td>€4.3 bn</td>
</tr>
</tbody>
</table>

Including the Siemens Affiliates:

- Siemens Business Services
- Communications
- Automation and Drives
- Power Generation
- Industrial Solutions and Services
- Power Transmission and Distribution
- Transportation Systems
- Siemens VDO Automotive
- Medical Solutions
- OSRAM
- Siemens Building Technologies
- Domestic Appliances
- IT Equipment

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Smart Home solutions offer product-related as well as service-related benefits

- **Value-adds for the private end-user**

  **Product Related Benefits**
  - **Convenient operation of electrical devices at home**
    One integrated remote control for all networked devices
    Comfortable activation of scenarios (leave home, watch TV, holiday)
  - **Remote operation of devices from outside the home**
    Status information and active control via secure internet or mobile
  - **Automatic control between networked devices**
    e.g. window open → room thermostat down
    e.g. security sensors trigger alarm notification (burglar, baby watch, etc.)

- **Service Related Benefits**
  - **Communication**
    Video call applications
  - **Information**
    Personalized info service (weather traffic, stocks)
  - **Security**
    Scalable professional security services
    (alarming, surveillance, ...)
  - **Entertainment**
    VoD ¹, IPTV ², on-line gaming,
    remote video recorder programming
  - **Health Care**
    Remote collection of medical data, reha-programs,
    doctor-patient video consultation
  - **Education**
    Comprehensive distant learning solutions

¹) Video on Demand ²) IP Television
By offering two distinct solutions, Siemens can quickly enter and develop the Smart Home market through different channels.

Siemens Smart Home Solutions

- **Cost-effective stand-alone entry-solution to the world of smart home.**
  - **Gigaset Home Control**
    - Simplicity
    - Convenience
    - Security
    - at any place any time

- **Carrier-grade, end-to-end, operator-managed Solution**
  - **Smart Home Solutions by Surpass**
    - Home Entertainment
    - Home security
    - Surveillance
    - Home control
    - Healthcare services
    - and more to come

Retail

Operator

Building construction

Health Service providers

Consumer’s Home
Agenda – Siemens Smart Home

- Introduction, market and consumer demands
- Siemens Smart Home strategy
- Gigaset Home Control
- Smart Home Solutions by SURPASS
Gigaset telephones become the center of the smart home

Gigaset Home Control ...

- is supported by all mid and high end Gigasets since September 2004
- is a complete system for the intelligent home covering all applications
- enables notification and control of the complete home infrastructure
  - At home the handset serves as display and remote control
  - On the move any fixed line or mobile telephone gives worldwide access to the home

Certified products for Gigaset Home Control ...

- are supplied by Siemens and other leading brand players
- will be sold in their established sales channels together with Gigaset telephones
- are easily identified:
Any home device, when equipped with the MD35 module, can be monitored and operated with a Gigaset handset or a mobile phone.

**How it works**

**Internally**
- Ring tones, Display
- Keyboard
- Voice

**Externally**
- Voice
- SMS
- Prompts, DTMF

**Module MD35**

**Home Device**
- Door bell
- Household Appliances
- Lights/Shutters
- Security systems
- Heating/Air condition
- Entertainment
The customer benefits are obvious

- Unified control device for the complete home
- Worldwide control of the home with any mobile phone
- Intuitive and easy to use
- „Plug & play” installation
- Simple configuration
- No new wires
- Modular extendable
- Safe and secure
- Low investment hurdle
Gigaset Home Control with GAMMA wave – Comfort and Security without new wires

- Allows to build simple wireless alarm systems
- Alarms can either be signaled on the Gigaset handset or be rerouted to any mobile/fixed extension
- Notification of open windows when leaving home
- Status checks of the home from externally

1) Gateway supports up to 20 sensors and 30 switches/dimmers
Gigaset Home Control with GAMMA wave – Comfort and Security without new wires

- Integrated control of the complete electrical installation (activation of scenes) from internally or externally
- Status check of all wired lamps or electrical units

1) Gateway supports up to 20 sensors and 30 switches/dimmers
Serve@Home smart appliances now are part of Gigaset Home Control

GHC Gateway

Smart appliances by Siemens
- “serve@home”
- 30 different models covering all product types
Systems for Remote Control

WAREMA EWFS Gigaset Home Control

Siemens Gigaset

WAREMA Gateway DECT/EWFS

WAREMA Comprehensive portfolio of EWFS sun blinds
TwinBus Home Phone with GHC - Functionality

- Door Station
- Door opener
- Home Phone DECT
- DECT-Handset
- DECT-Basestation
- PSTN
- Mobile Phone

TwinBus DECT

FRIEDHELM LOH GROUP
Objectives

- Partner acquisition
- Product for system integrators and end customers (home constructors) in a second phase
Agenda – Siemens Smart Home

- Introduction, market and consumer demands
- Siemens Smart Home strategy
- Gigaset Home Control
- Smart Home Solutions by SURPASS
The evolution of services & applications - Ride the waves

Today:
- Data services are still growing significantly
- Innovative operators start to deploy entertainment services
- Smart home applications are evolving
Attractive Smart Home Services will boost Revenue for Operators and Service Providers

Declining voice revenues

Market introduction of attractive broadband services will lead to increased revenue and customer satisfaction.
Smart Home services attract new customers and boost providers’ end-to-end revenue chain

Richness & Simplicity for the user – manageability for the provider

Service Enabling Platform

Entertainment
- Entertainment center
- IPTV
- VoD
- Networked game client

Protection
- Burglar alarm
- Fire alarm
- Gas sensors
- Water leakage

Comfort
- Control your household appliances, lights & shutters
- Via PC, palm, laptop, mobile phone

Health
- Chronic disease management
- Elderly care
- Check health data

Integrated User Interface: same “look&feel” on TV, PDA, PC, mobile, ...

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Service example: SURPASS Home Security

Package Needed
- SiRoute Security Controller (e.g. ICW710)
- SiRoute Devices (e.g. Glass, Motion, Smoke, door open contacts, and sirens).
- IP Camera

Services Offered
- 24h response Center
- Alarm Notification to mobile phone
- Remote Surveillance
- Remote Control

Billing
- Monthly
- Per Incident
- Monthly

Siemens value proposition
- Siemens has a complete e2e solution
  Service provision – Backend management – Residential gateway – CPE’s including home appliances and computers
- The Service Provider can develop and offer services and create new revenue streams based on installed CPE devices
Successful Smart Home business requires cooperation

- Example: Complementary offering of manufacturer through Operator and Housing industry

Enduser
- purchases pre-equipped apartment/villa directly from Property Developer according to Services Packages options from Operator

Property Developer / Housing Industry
- Siemens integrated Smart Home Devices:
  - Household appliances
  - Lighting
  - HVAC
  - Security systems and devices
  - IT / Telecommunication / Entertainment

Operator Service Offerings
- Initial sales
- Ongoing Add-on Service offerings
- Internet / Demo house

Operator Service Offerings
- Smart Home Gateway
- Settop box
- CPE Equipment
- Aggregated Managed Services
- DSL

Telecom Operator
- Managed Services
  - Security
  - Entertainment
  - Information
  - Health
  - etc.

Customer Premises & Network (back-end) equipment

Siemens

Service example: SURPASS Health Care Services

- Mass deployment of home health services
- Integrates broad-range of medical devices with patient or remote-control capability
- Automatic capture and storage of vital signs at home & update of medical information with patient-specific alerts
- Videoconference on TV with doctor
- Easy accessible medical records for doctors
- Secure exchange of health data between end-user and care provider
The medical environment of the 21st century necessitates innovation. Over 30%*) of a population suffer from chronic diseases. 

- Prevalence of chronic diseases as percentage of Belgian population (2006-2012):
  - Diabetes
  - Hypertension
  - CHF
  - Asthma
  - COPD

Source: Frost & Sullivan, 2004 / US Census Bureau / own calculations
*) Overlapping is not considered

CHF: Congestive Heart Failure
COPD: Chronic Obstructive Pulmonary Disease

The population is aging (65+ years old)

Elderly people as percentage of the population in Belgium (2006-2012)

Home Health Monitoring will become an important component of chronic and elderly healthcare!
Smart Home Solutions by SURPASS put Operators and Service Providers ahead of competition

End-user benefits:
- Lifestyle enhancement
- Fun & entertainment
- Protect private Life and property
- Ambient Assisted Living
- Unified user experience

Partner* benefits:
- Smart Home services expand the current business and helps to capitalize on new customer demands
- Flexible bundling of entertainment, home automation and health care services offers high return per customer and increases customer loyalty
- Fast additional service offering

Siemens’ unique solution:
- End-to-end solution
- Open standard-based, modular architecture
- System integration
- Unified solutions of entertainment & communication & home automation
- Best-of-breed products

*: Carrier, Housing Industry / Property Developer, Healthcare Provider, Security Services, Content Provider
Living in a Smart Home means

- security
- control
- comfort & convenience
- communication
- entertainment & fun
- well-being
Synergetic Marketing by all Partners starting April 2006

Siemens

Pull

• Promotion of GHC system and partners with every compatible phone
• Internet portal for GHC with up to date information and link to sales channels

Partners

Push

• Active promotion at POS in the established sales channels
• Bundling with Gigaset systems

Co-marketing of the GHC system by Siemens and all Partners

System label as an anchor for the end customer
The core of intelligent home control: Siemens DECT-Module MD35

- Connects products or systems for the intelligent home with the Gigaset telephone system
- Requires only little integration effort

**General features:**
- V.24 API
- DECT RF technology
- Control via AT commands
- 5 V supply voltage
- Dimensions: 39.5 x 25.1 x 14.4 mm

**Interfaces:**
- 20 pin connector
- 5 V power supply, 3.3 V RX/TX
- Microphone in, Loudspeaker out
- Several I/O ports
- Integrated and external antenna
- DECT air interface
Gigaset Home Control System architecture

Decentralized Architecture: The Home Control application resides in the home infrastructure products/systems only

- The telephone continues to be a fully reliable device
- The telephone remains competitively priced, since no extra costs are added. Necessity to spend money correlates with the added functionality

No direct interaction between different applications

- Although the number of possible configurations for $n$ accessories scales with $n!$ the system is fully stable provided that the individual accessories have been thoroughly tested
- This enables plug and play functionality and removes the need of a system integrator

Experience of an integrated system to the end user

- Handset as integrated I/O device. Common look and feel over all applications due to Gigaset UI specifications
- Central control via global scene activation and central rerouting number
Smart Home Solutions by SURPASS – Overview

Smart Home by SURPASS offers

- an e2e solution for operator-managed Smart Home services
- a modular and open standard architecture that easily integrates 3rd party applications and devices
- a platform to provide new business opportunities for operators and service partners/providers
SURPASS Smart Home Solutions are based on the intelligent combination of Home Gateway and Backend Platform

Features: Scalable, Portable, Extendable and based on Opens Standards

Siemens Service Gateway Platform (for Home Gateway)

... one harmonized easy to use interface to control all devices
  - User interface suitable for variety of clients (Entertainment devices, Phone, PDA, PC, wall-mounted display)
... enables plug & play for device and service extensions
  - Automatic SW downloads for new connected devices
  - Integration of new functionalities in the UIs
  - Advertisments for featured services on UIs
... executes home-centric applications
  - User-defined Scenes and scenarios, scheduler and interaction planner

Siemens Service Enabling Platform (for Operator Backend)

... Framework and development tools to enable managed, network-centric applications
  - Security, Home Care, Education, Personalized Information, Entertainment,...
... enables secure remote access and status control of all devices
... offers service subscription, billing, logging and platform management

Combination
Is a fully managed and extensible Smart Home Solution
Has Value-add for CPE´s and Network Products
New „Smart Home” System Design

Service Enabling & Management Platform (SEMP)

- Home Control
- Health Services
- Home Security
- IP TV, VoD, VoIP, VideoIP
- WLAN, Ethernet

Remote User Portal

User Portal

3rd Party Service Provider

Operator Portal

XML

IP / TR69

DSL, CATV, LL

UPnP

New Product
Broadband Pipe Provider Model

*Services are offered through separate platforms by different service implementations*

- **Services**
  - VoIP & Video communication
  - IP TV, VoD Entertainment
  - Home Control
  - Health Care
  - Home Security

- **Infrastructure**
  - Data Hosting
  - QoS
  - Support

- **Service Implementation**
  - Device Mgmt
  - Service Mgmt
  - Password
  - Portal (UI)
  - Billing
  - Remote Access
  - Remote Access
  - Billing
  - Remote Access
  - Support
  - Portal (UI)
  - Billing
  - Password
  - Service Mgmt
  - Device Mgmt
  - Password
  - Service Mgmt
  - Device Mgmt
  - Service Mgmt
  - Support

- **Network**
“Service Delivery Platform” Provider Model

Services are offered by the “Service Delivery Platform” with high layer APIs.

Customer

- VoIP & Video communication
- IP TV, VoD Entertainment
- Home Control
- Health Care
- Home Security

Service Delivery Platform

- Network
- QoS
- Data Hosting
- Support
- Service Mgmt
- Device Mgmt
- Password
- Portal (UI)
- Billing
- API
- Remote Access
- API
- API
- API

Service Implementation

- Broadband Service Upselling
- “Plug & Play” of new devices

VoIP & Video communication Service Provider
IP TV, VoD Entertainment Service Provider
Home Control Service Provider
Health Care Service Provider
Home Security Service Provider
Successful Smart Home business requires cooperation 1/2

- Complementary offering of manufacturer through Operator and Retail

Enduser
purchases Smart Home components step by step, starting with 1 or 2 networked devices or applications; each time using familiar sales channels

Internet
DIY
Kitchen Store
Consumer Electronic Store
Mass Merchandizer
Telecom/IT Specialist Store

Siemens integrated Smart Home Devices:
- Household appliances
- Lighting
- HVAC
- Security systems and devices
- IT / Telecommunication / Entertainment

Operator specific retail outlets
Smart Home Gateway
STB
CPE Equipment
Aggregated Managed Services
DSL

Telcom Operator
(local brand)

Siemens ONE
(per country)

Customer Premises &
Network (back-end) equipment

Managed Services
Security
Entertainment
Information
Health
etc.
Successful Smart Home business requires cooperation 2/2

- Complementary offering of manufacturer through Operator and Housing industry

Enduser
purchases pre-equipped apartment/villa directly from Property Developer according to Services Packages options from Operator

Property Developer / Housing Industry

Operator Service Offerings

Siemens integrated Smart Home Devices:
- Household appliances
- Lighting
- HVAC
- Security systems and devices
- IT / Telecommunication / Entertainment

Siemens ONE
(per country)

Property Developer / Housing Industry

Operator Service Offerings

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Siemens ONE
(per country)

Operator Service Offerings

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Siemens ONE
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Operator Service Offerings

Siemens integrated Smart Home Devices:
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- Security systems and devices
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Siemens ONE
(per country)
Siemens Smart Home Solutions -
A comprehensive value proposition

With the Siemens Smart Home solutions, the residential end-user increases security and comfort in his daily life in a unique and pleasurable way.

<table>
<thead>
<tr>
<th>User Interfaces</th>
<th>Home Devices</th>
<th>New Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operate different home devices through one unified user interface through a control unit of his choice (PDA, PC, TV, etc.) inside and outside the house</td>
<td>Set-up cross application scenarios involving devices of: Safety and security Home automation ¹) Home appliances Entertainment Computing and networking Personal communication</td>
<td>Use individual, managed services Alarm monitoring Personalized information provision Home media content Healthcare and wellness / physical fitness Education Control energy consumption and save costs</td>
</tr>
</tbody>
</table>

Due to the modular, scalable and open system character, the user takes advantage of an attractive entry to the world of Smart Home.

¹) Lighting, blinds, heating, ventilation, air conditioning