A Vision for the Personal Assistant

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AGENDA

- Company Overview SemanticEdge

- A Vision for the Personal Assistant
Company overview SemanticEdge

Core Competencies:

- Development and integration of modular natural language applications and industry solutions
- Development of state-of-the-art dialog technology

Customer references:

Partners:

- IBM
- SIEMENS
- intervoice
- CosmoCom
- GENESYS
- NUANCE
- MetaDesign

- Sparda-Bank
- Dresdner Bank
- DHL
- Deutsche Post
- GDV
- Berliner Sparkasse
- LBB
- LandesBank Berlin
- Schwab
- BAIM
- DAIMLERCHRYSLER
- OTTO
- MVV
- free.net
- ARCOR
- SONY
- Visible Strategies
SemanticEdge Enterprise Solutions

- Banking
- Telecom & ISPs
- Logistics & Mail order
- Public Transport
- Personal Assistant
- Directory Assistance
- Natural language routing
- Customer satisfaction survey

Sparda-Bank Hamburg: „Best Enterprise-Solution“
DHL: „Best Enterprise-Solution“
DaimlerChrysler: „Best Innovation Award“
NLU-Framework

- Configuration
- Deployment
- Reporting
- Administration

Management Environment

- Development of new Services
- Testing
- Handling of Modules

Dialog IDE

Log Database
- Portal Diagnostics
- Session Evaluation
- Grammar Optimization

NLU Dialog Manager

Modular Application

Integration Layer

VXML, MRCP, SIP, CTI, Lotus N., Siebel, ... Customer Backends
Personal Assistant

Navigation Commands
- "Call back"
- "Voice Dialing"
- "Configuration"
- "Stop"
- "Repeat"
- "Instructions"
- "Mobile"
- "Business", "Private"
- "List"

Interface

Personal Addressbook

Company Directory

Options when not available

Presence-based Solution

Lotus-Domino

Update

New Call

Identification

Call back
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Apple iPhone: A giant step for mobile user…

- A revolution in **graphical UI-Design**
- Makes new applications (Internet, maps, videos, music…) easily accessible
- Outclasses the traditional mobile phone design with hardware keypads

**But…**

- Browsing the internet is totally inefficient
- Just a fraction of the spectrum of desires of mobile users is covered
The user-interface dilemma

One of the largest barriers to the instantaneous desire satisfaction is the limited user-interface of mobile devices and the unlimited access to semantically aggregated content and semantically tagged transaction interfaces.
Drivers of the next generation of mobile devices

- **Evolution of mobile networks and tariffs**
  - Area-wide broadband access
  - Flat-rates for voice and data
  - IP as the common standard for voice and data
  - Due to flat-rates, users are permanently online

- **Evolution of mobile devices**
  - Strong growth in feature richness
  - Larger screens and better GUI-design (e.g. iPhone)
  - Open operating systems and applications (G-Phone/Android) and multimodal browsers

- **Evolution of the Content**
  - Open access and strong growth of systematic content coverage (e.g. Wikipedia, Google)
  - Increasingly semantically tagged content (Web 3.0)
  - Personalized content (iGoogle)

- **Evolution of speech-technology**
  - Robust mobile dictation SW und embedded ASR
  - Power of mobile processors
  - Naturally sounding TTS
  - Intelligent dialog technology and modular voice application architecture
Mobile search and communication today

Internet-search
- www.google.com
- www.amazon.com
- www.wikipedia.com
- www.ebay.com
- www.itunes.com

Phone call
- 030-890… (supermarket)
- 0171- 34509… (girlfriend’s mobile)
- 01802-… (train information)
- 0800-… (telefone banking)

Manual actions
- Turn on radio
- Zip through TV-channels

„Telefene numbers and the URLs will soon become history“
Personal Assistant – The Vision

The Personal Assistant – a centralized interface for all major service and information desires.
The Personal Assistant – the operating system for personalized mobile services

**Plug-ins Personal Assistant**

**Mobile-Control**
- Multimodal control of mobile phone
- Voice control of car multimedia and navi.

**Mobile Internet**
- Voice search
- Talking wikipedia

**Mobile Community**
- Messaging
- Friend finder
- Event-notification...

**Mobility Services**
- Navigation
- Mobile Search
- City guide
- Travel planner...

**Communication-center**
- Voicedialing
- SMS-dictation
- Audio messaging

**Podcast**
- News
- Audiobooks
- Video-on Demand
- You-Tube...

**Home-Control**
- Electric devices
- Light
- Multimedia
- Shoppinglist...

**Shopping**
- Supermarket
- Ebay-auctions
- Amazon...

**The Personal Assistant**

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The Future of Unified Communication

<table>
<thead>
<tr>
<th>Applications</th>
<th>Voice-Use-Cases (examples)</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone</td>
<td>• Name-Dialing with intelligent multichannel messaging</td>
<td>Presence based solution</td>
</tr>
<tr>
<td>SMS</td>
<td>• Outbound call triggered by new contact or message in business community</td>
<td>Navigation System</td>
</tr>
<tr>
<td>email</td>
<td>• SMS-/e-Mail dictation. Handsfree messaging anywhere, anytime</td>
<td>Business Community</td>
</tr>
<tr>
<td>Voice Mail</td>
<td>• Telephone conferences/voice dictated chats with community-partners (acceleration)</td>
<td>Sports Community</td>
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<tr>
<td>Chat</td>
<td>• Voice messages to community members (Instant voice messages)</td>
<td>Friends Community</td>
</tr>
<tr>
<td>Calendar</td>
<td>• Outbound call triggered by friend finder (requires GPS module) when community member close to current position</td>
<td>Family</td>
</tr>
</tbody>
</table>
Multimodal Personal Assistant

Hi Pete
What can I do for you?

Communication
Name dialing
SMS
E-mail

Mobility
POIs
Navigation
Timetable

Podcast
News
Audiobook
You-Tube

Personalized, localized ads

e.g., „Send SMS“
Components of the PA-architecture

Multimodal Browser
- Visual Rendering
- Voice Rendering
- emb.ASR
- emb.TTS

Integration Layer
- NLU-Framework
- TTS
- Dictation-ASR
- Grammar-ASR

Application
- MMML/VXML
- VOIP

Webservices
- Content
- e.g. Outlook-Lotus-Notes adapter
- e.g. iPhone adapter
- e.g. Google adapter
- e.g. Open-Social/Facebook adapter
- e.g. EBay-/Amazon adapter
- e.g. Home-Bus adapter
- e.g. Audible-adapter
- e.g. Google-Maps-adapter