Mobile Video Interpretation Service Platform for Hearing-impaired

Christina Chung, I/T Specialist
China Development Lab, Taiwan
Agenda

- Project Introduction
- User Scenarios
- Solution Architecture
- Current Status
- Future Work
Project Background

- Deafness and Hearing Impaired Community Service Background
  - Deafness and hearing impaired are social vulnerable groups.
  - Around 200,000 population with deafness and hearing impaired in Taiwan.
  - Taipei City government provides 20hrs/month face to face interpretation to the applicants by two-week advanced application.
    - This kind of service could not provide the immediate assistance.

- Hearing impaired people rely on SMS to communicate with each other
  - Some of them can not read well.
  - It takes time to type SMS and can only carry little information.
  - Sending a lot of SMS costs much money. It’s a big financial burden!
Project Overview

- **Objective**
  - Create a **smarter communication** for deafness and hearing impaired people.
  - Provide a friendly environment for them and make the city smarter by exploiting the WiMAX’s bandwidth

- **Requirements**
  - Hearing impaired to hearing impaired real time communication
    - Instant Message with Video Chat helps hearing impaired to communicate with each other in real time.
  - Hearing impaired to hearing people real time communication
    - In order to communicate to hearing people, there is a need to convert **sign language** to **spoken language**. The interpreter service should be available at anytime and anywhere.

- **Solution**
  - A **Video Interpretation Service (VIS) Platform** enables the communication at **anywhere, anytime and anyone**.
    - A Service Center will be established to serve as the intermediate between hearing impaired and hearing people.
VIS Platform Value Proposition

- The first-of-a-kind (FOAK) service model for the hearing impaired in Asia Pacific.
- One application of Smart Planet. Create smarter communication model for hearing impaired people. This solution is not only limited to hearing impaired, but also can be extended to Remote Healthcare Solution.
- Contribute to Corporation Social Responsibility (CSR) to take care social vulnerable groups.
- Service-Oriented platform to bridge the communication and information gap between hearing impaired community and hearing people.
Video Interpretation Service Platform

Portal (Sign Language Friendly)

WiMAX / Wi-Fi

Location A
Hearing Impaired
Office (Employer)
Hospitals (Physician)
Emergency (Police)
Life Assistance
Lawyer Counsel
Hearing Persons

Location B
Hearing Impaired
Office (Employer)
Hospitals (Physician)
Emergency (Police)
Life Assistance
Lawyer Counsel
Hearing Persons

Location C
WiMAX / Wi-Fi
Internet GSM
VIS Center
Interpreters

© 2007 IBM Corporation
Car Accident: Seeks Police Support

- **Scenario**: car accident
- **Location**: same location
- **Mode**: video
- **Path**: Hearing impaired

Hearing Impaired

Hearing Persons

Police

VI Center

Interpreter

WiMAX / Wi-Fi

WiMAX / Wi-Fi

Hearing person

Interpreter

Hearing impaired

Hearing person

video

sign language

video

voice

video

voice

video

sign language
Request for Doctorial Consulting

- **Scenario**: hospital registration; medical consultation
- **Location**: different locations
- **Mode**: video / voice
- **Path**: Hearing impaired

![Diagram showing communication flow between Hearing Impaired, Hearing Persons, Doctor, Interpreter, and Vis Center using various media such as WiMAX/Wi-Fi, Phone line/GSM, video, sign language, and voice.]

Hearing person (phone, voice) → Interpreter (voice, video, sign language) → Hearing impaired (video, sign language) → Interpreter (phone, voice) → Hearing person (phone, voice)
Communications between hearing-impaired

- **Scenario**: chatting or making appointment between hearing-impaired people
- **Location**: different locations
- **Mode**: video
- **Path**: Hearing impaired

Diagram: WiMAX / Wi-Fi

- Video
- Sign language
Share information using video portal

- **Scenario**: hearing impaired people share information using video portal
- **Location**: different locations
- **Mode**: video
- **Path**: Hearing impaired

Video portal (Web 2.0) (sign-language friendly)

Content Provider

- Medical Resource
- Legal Resource
- News

Video portal

Hearing Impaired

Interpreter

Hearing Impaired

WiMAX / Wi-Fi / Internet
Solution Architecture for VIS Platform

- **Client**
  - Web Browser
  - Instant Message Client
  - Netbook / Eee PC
  - Mobile Internet Device (MID)

- **Service Center**
  - Reverse Proxy
  - Lotus Connections
  - SSO LDAP
  - Sametime Load Balancer
  - Unify communication Server (Sametime)

- **Web 2.0 Content Provider**
  - Google Facebook Youtube

- **Service Hub**
  - Database Server
  - Information Hub (web service, .Net, COM+)

- **WiMAX / Internet**
  - Web Browser
  - Instant Message Client
Current Status – VIS Platform

- Pilot-run start from September, 2009
- Service over 30000 people, total service time over 4000 hours
- Currently has around 450 members
- Service category includes: Doctor appointment, Occupational Assistance, Social Welfare Application, etc.
- Cooperated with Taipei City Government to provide municipal service
Current Status – isign-ihear Video Portal

- More than 71,592 visits since September, 2009 and visitors came from all over the world such as USA, UK, Germany, Brazil, and Asia Pacific Countries.
- There are more than 500 video clips uploaded in the video portal
- There are currently over 450 registered members

http://www.isign-ihear.org.tw
Support 2009 Deaflympic in Taipei

Support Call Relay Center in deaflympic
Future Work

- Provide Smarter Living Style
- Extend the service to Remote Healthcare scenario
- Provide foreign labors or tourist service
- Extend the platform to mobile phone support