Mobile Emerging Market Overview

- Two types of market (3.3B cellphones WW)
  - City center / USA and European (10%)
  - Rural and urban (90%)
- Rural / Urban characteristics (BOP)
  - Very large numbers of people / Socially based systems
  - Very low income / Low value transactions
  - Little or no technology, skills or infrastructure
- Technology Availability
  - Basic cell phone (voice and SMS)
    - Low cost handset and no data plan
- Business models
  - Government to citizen
    - Heath, agriculture, Social Services, Education
  - Telco, Finance
  - Consumer to Consumer

Health and Well Being

- Simple and basic Health Care support and advice can be difficult to obtain:
  - Access to Hospitals, Clinics and Pharmacies
    - Distance
    - Transportation
    - Lines and availability
  - Little or no technology or infrastructure support
    - Internet
    - Computers
- Very large numbers of people require healthcare information
  - Scale
  - Cost
- Real time healthcare information is important and difficult to obtain

Solution

- Simple health care information available from a cell phone
  - Patient phones local access number from basic cell phone
  - Provided with voice menu system which provides simple healthcare information
    - Configured for local healthcare issues
    - In local language using local terms and descriptions
    - Using locally available medicines and treatments
  - Minimal health care professional impact
- Result: Improved health care at a very low cost

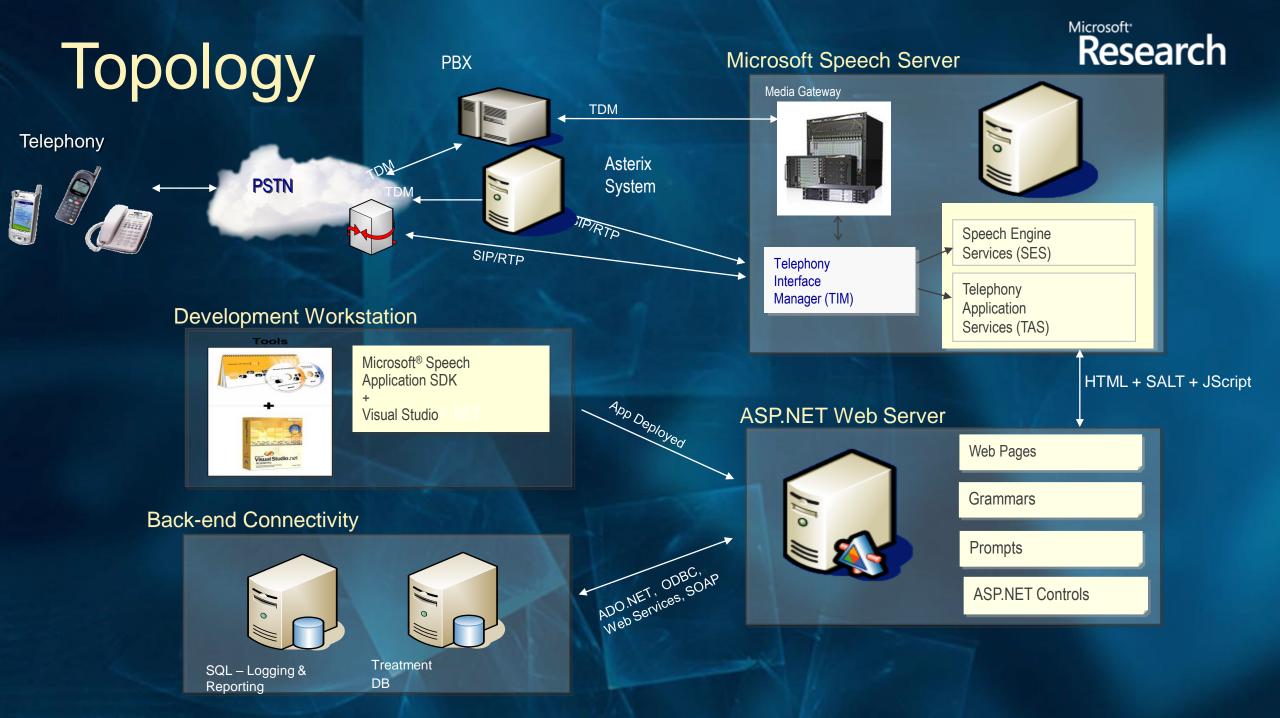*Internet style health care on the cell phone*

Healthcare Applications

- Voice Web pages
  - Provide same information on Web and phone
- Illness information
  - 70% of people want to understand medical problems
  - Rapid growth of web based medical information systems (WebMD etc)
- Health and lifestyle advice
  - Preventative medicine
  - AIDS / Sexual / Diet / Exercise
  - Standard and customized
- Treatment planning
  - Outpatient and long term care

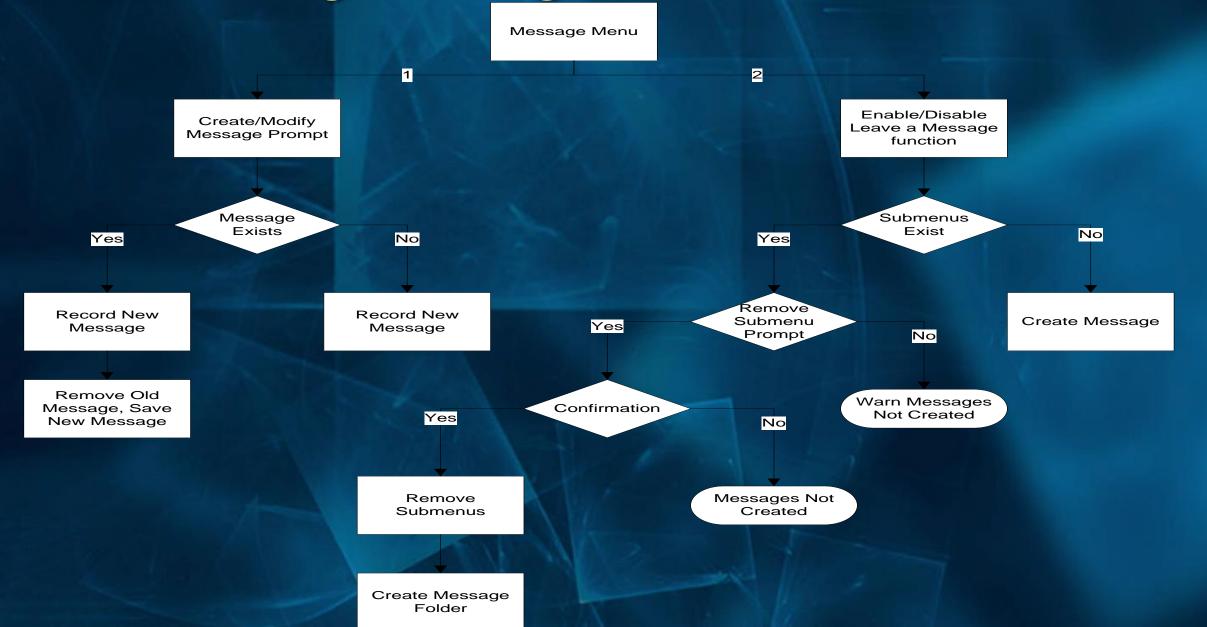*High Visibility, Low Cost Social Program*

Asynchronous Voice

- Voice Based Service (IVR) with voice based programming model
  - Low cost implementation
  - Scalable
  - Basic and feature phone client support
  - Language and Education agnostic
  - No programming skills required
  - Based on Speech Server
  - Cloud service

Topology

Telephony

PBX

PSTN

TDM

TDM

TDM

Asterix System

SIP/RTP

SIP/RTP

Microsoft Speech Server

Media Gateway

Telephony Interface Manager (TIM)

Speech Engine Services (SES)

Telephony Application Services (TAS)

HTML + SALT + JScript

Development Workstation

Tools

Microsoft® Speech Application SDK + Visual Studio® .NET

App Deployed

ASP.NET Web Server

Web Pages

Grammars

Prompts

ASP.NET Controls

Back-end Connectivity

ADO.NET, ODBC, Web Services, SOAP

SQL – Logging & Reporting

Treatment DB

General Programming Workflow

Message Menu

1

2

Create/Modify Message Prompt

Enable/Disable Leave a Message function

Message Exists

Yes — No

Submenus Exist

Yes — No

Record New Message

Record New Message

Remove Submenu Prompt

Yes — No

Create Message

Remove Old Message, Save New Message

Confirmation

Yes — No

Warn Messages Not Created

Remove Submenus

Messages Not Created

Create Message Folder

Integration

- Doctor / healthcare professional
  - Provides information (like a web site)
  - Not a replacement for a Doctor
  - No legal implications
- Emergency and Call Center
  - Not a replacement
  - Call center filtering
- Phone and internet
  - Local phone number in Hospital / Clinic
  - Internet connectivity
  - Service in the cloud

Project Details

- Media gateway in Local Hospital attached to local phone line and Broadband
- Application provides
    - Menu and navigation system
    - Voice and text storage and replay
    - Ability for Medical professional to:
        - Configure and update
- Minimal cost, skills and time
- Pilot testing in a few locations in a few Countries (Mexico and Peru)
- Understand technical, social organizational and health constraints
    - Validate approach

Conclusions

- Success
  - Social
    - Huge demand
    - Simple for end users
    - Provides real low cost healthcare
    - Scales to millions
    - Sparks new applications
  - Technical
    - Basic Phone
    - Voice
    - Voice programming
    - Cloud service

- Issues
  - Scale to billions
  - Economic sustainability
  - Business model
  - Politics