

Workshop Title: Bridging the Digital and Language Divides
Presenter: Emdad Khan, InternetSpeech

The workshop discussed and demonstrated using the telephone for voice transmission and reception of content on the Internet. The workshop concluded that voice Internet can help bridge the digital and language divides. It can help promote education and other key areas such as e-government, e-commerce, and e-health, and e-banking. Target users are businesses, governments, civil society among others.

PROBLEMS and OPPORTUNITIES

Internet access worldwide is limited. Present access to the Internet is through computer based applications and 450 million people worldwide are connected to computers. By contrast, only 14 percent of the global phone users have Internet access.

The impediments to Internet access are:

- lack of computer or computer skills
- access to PCs is difficult, limited, visual and costly
- many modes of mobile access, such as driving in a car or walking, are not practical with the visual display on a computer screen.

For these reasons, the digital divide with people at the bottom of the social pyramid of any country cannot be easily be bridged using the present computer-based technological ICT set up.

The solution that Internet Speech computer has come up with is to make Internet accessible through any simple telephone or cellular phone in what the company terms a True Voice-Internet technology. Using this technology, an intelligent agent, called NetEcho, mediates between the user and the Internet; it retrieves and renders text on any Web site or content modification; it makes messages short, precise, easy to navigate, and pleasant to listen to.

Thus, using the telephone a caller have their e-mail read and reply in a similar way; can browse; surf, search the Net; listen to music and radio, and get e-commerce information -all on voice over the telephone. The user may not have time to listen to everything on an Internet page and can use the Internet Interface to download and even translate into another language that part of a document wanted.

The system gives highlights of items only, rather than an entire page. The user then chooses the item wanted and gives verbal instruction for that to be read in its entirety. Paragraphs and pages can be skipped or revisited. The objective of the Internet telephone is to deliver any information by voice in a simple manner. The system has now started to be use in the United States and Canada. It is also in China and some European and African countries.

CHALLENGES, ADVANTAGES and APPLICATIONS

For education, many schools and students do not have computers. At home the students would not be able to do homework assignments. Even if they did, there may be more than one child

wanting to access the Net. Many children, though, have telephones and could access the needed information using this Internet telephone system. More than one child could, therefore, access the Net simultaneously.

Voice recognition and accents is possible with Voice Internet: Internet Speech has created a vocabulary of less than 50 words, so it works very well and does not mistranslate. This system recognizes any accent. A voice interrogator will ask for clarification of request if the incoming voice or accent is not recognized or understood.

Many schools do not have teachers who know how to use a computer and the Internet. The Internet phone is thus good for people at the bottom of the social pyramid

The system is good for the phone companies, ISP and ASP and other service providers in that they could provide this service to the public

Voice Internet is low cost, an easy to learn practical way to meet the Internet access and e-learning needs

WAY FORWARD

In the last 9 months Internet Speech has been working with the UN to deploy the system worldwide. It is also working with NGOs, governments, youths; educational institutions; service providers such as ISP and ASP, content providers, voice portals, and system integrators.

The strategy to deploy worldwide also includes sponsorship and participation in key educational, communication, economic and development projects.

Future products include voice computers, phone-based access to computer, micro browser – allowing all web sites to be viewed on a cell phone screen without rewriting any web site, and allowing Voice Over Internet Provider (VoIP) calls from any phone to call any phone without a broadband connection or broad band phone.

Developing countries, such as Kenya, would need a server here to test the system. Internet Speech can talk to local telecoms company and the mobile cellular operators to see if they can host a demonstration unit.

RECOMMENDATIONS

The following policy steps are proposed in order to make the system usable.

- Ensure low affordable calling rate when the Internet is accessed by phone
- Make Voice Internet available to all Cyber Cafes
- Make Voice Internet as part of computer training
- Make Voice Internet available to all schools/educational institutions

COSTS:

Costs for the server varies from one country to another. In the US it costs the consumer US \$14/month; in China is \$3/month. The costs depends on the deal Internet Speech has with its partner in any particular country.