VoIP Solutions Summit
Focus on Disability Access Issues

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Opportunities Presented by IP Enabled Services

- **Video**
  - Conversation and relay service -- Already available
  - Ideal: See both interpreter and conversational partner, conference calls, online forums, etc.
  - "Quality of service" concept for video comparable to voice needed for functional equivalency
  - Broadband = Dialtone for visual communicators (including oral deaf and hard of hearing people who would like to lipread)
  - Streaming video: captioning and description?

Opportunities Presented by IP Enabled Services

- **Language and mode of choice**
  - Visual, textual, and vocal (including wideband audio)
    - Simultaneous or alternating at choice of user
    - Multiple streams possible
  - Information translation on demand

Opportunities Presented by IP Enabled Services

- **Mobile IP-enabled devices allow deaf people to communicate while mobile**
  - Potential is good if we have IP "text everywhere" and open protocol across carriers, tie in to relay services and PSAP
- **Emergency**
  - In future: Connecting with PSAP would connect Relay Center transparently
  - Location technology
  - 3-Way video calls among PSAP, interpreter, and caller

Future Considerations

- **Open platform concept**
  - Permits development of niche applications as well as universal design
  - Open standards as concept in telecom needs to be retained
    - Even niche products must support open standards for interoperability
- **Ease of use**
- **Compatibility with old technology**
- **Authenticating users to prevent fraud**

Acknowledgements

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The opinions expressed in this presentation are those of the grantee and do not necessarily reflect those of the Department of Education.

Accessibility raised to the power of ^{3}

Access opportunities in IP based services.

FCC Summit

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Accessibility raised to the power of 3

VoIP technology gives us the opportunity to improve personal communication

- Leave inaccessible voice telephony behind.
- Use three media in the calls

  Video, with quality for signing, lip-reading, recognition, feelings, showing…

  Text, character-by-character for conversation, addresses, numbers, spelling…

  Voice, for conversation, feelings,…

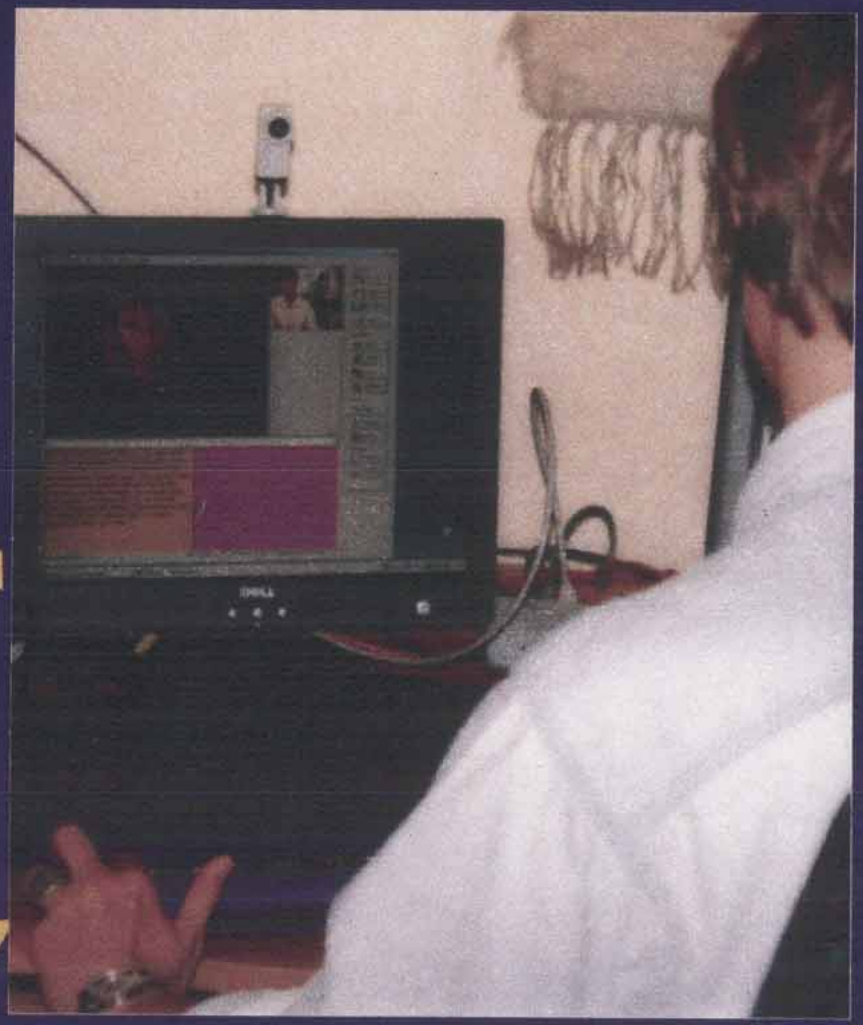
- Satisfy all needs in one universal service in IP with global interoperability.

User interface for three media in the call

Example with deaf-blind user

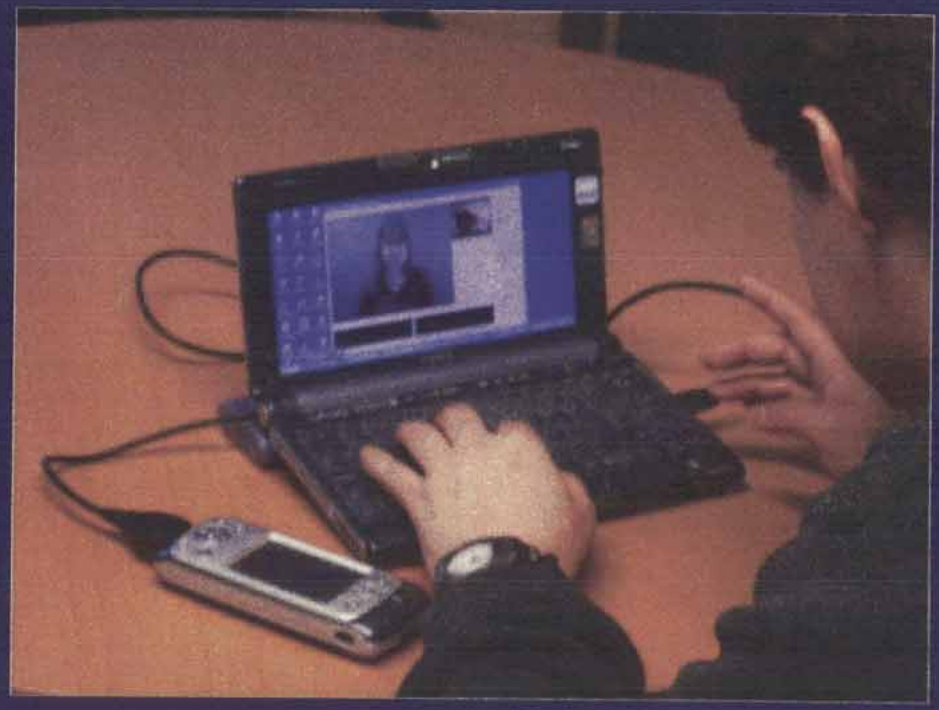
Usability verified in Swedish project 2003

- In this case:
  - Sign language from the deaf-blind user
  - Text back, displayed on braille display
- Many other combinations possible



Example from communication between deaf and hearing persons

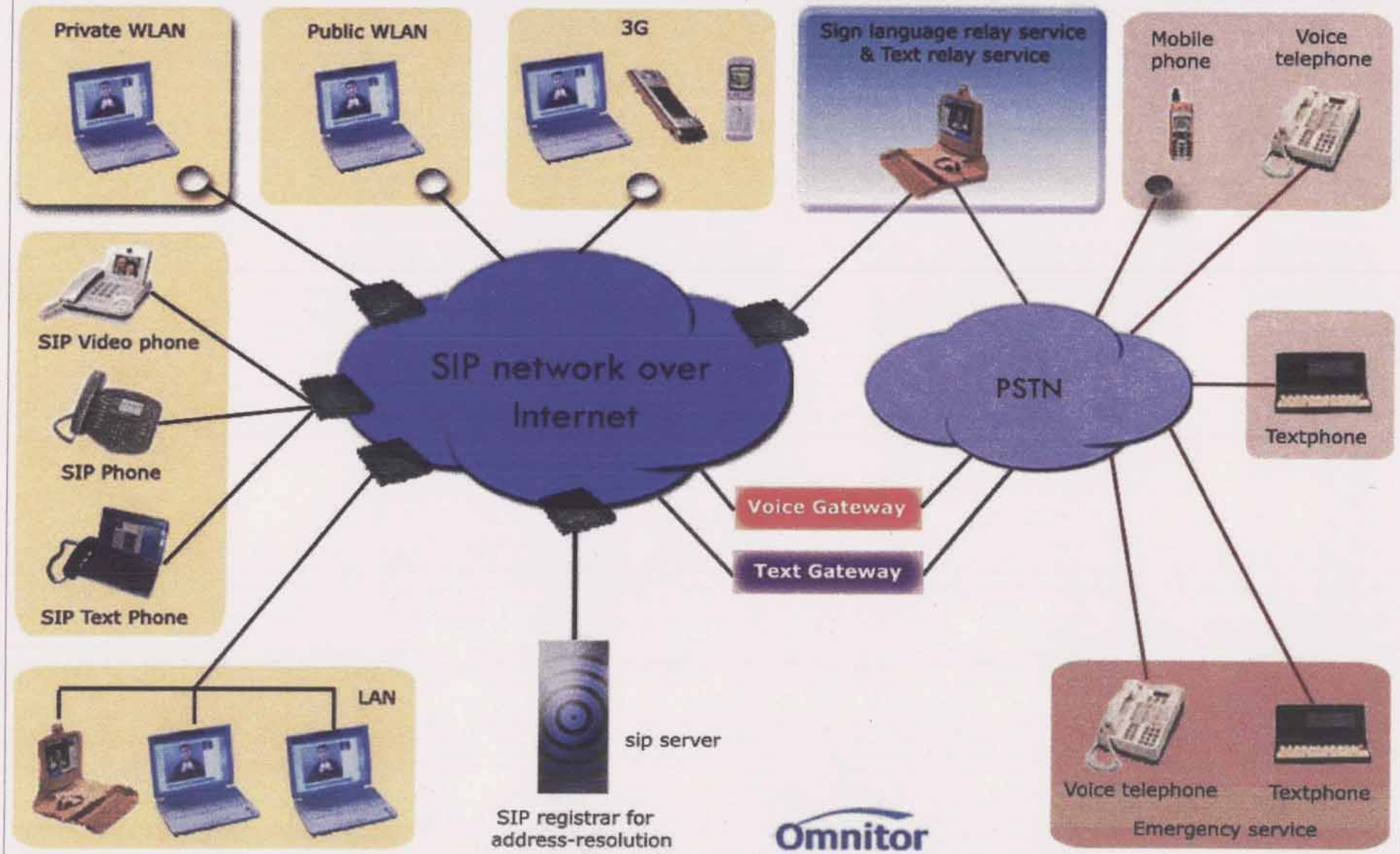
- Text for main conversation
- Video for acknowledgement, recognition, showing things, feelings
- Take any other situation and find that the video-text-voice combination is the solution.
- More value the more widespread it becomes



3G communication in video, text and voice,

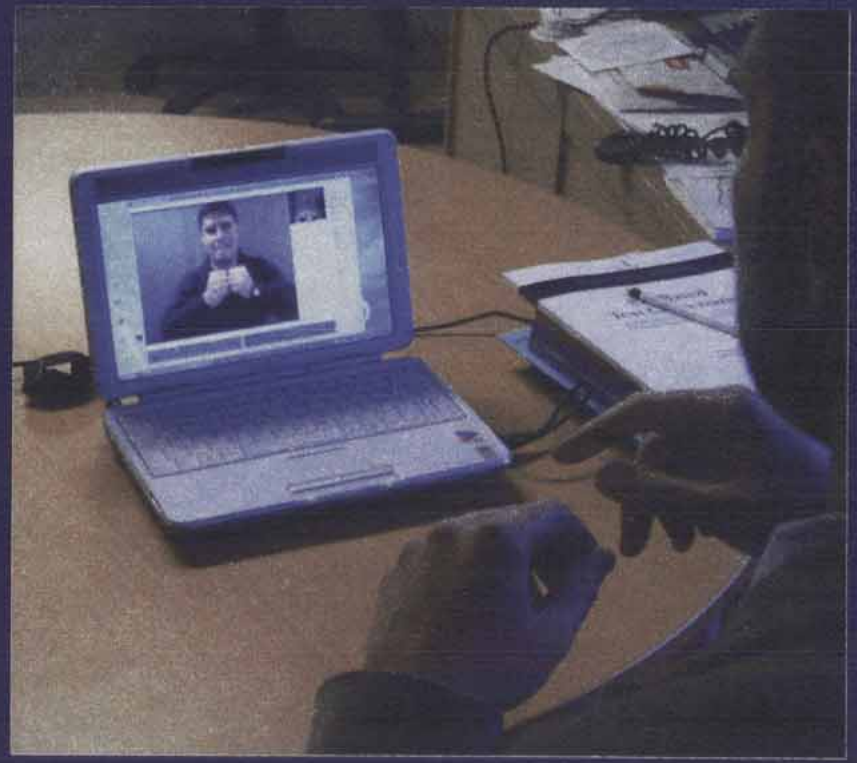
Personal communications network for all

SIP-terminals for video, text and voice



But standards must be applied to achieve global interoperability

- Good standards exist for the call and the three media.
- Promote one preferred set of default standards:
  - IETF SIP Call control
  - H.263 Video
  - T.140/RFC2793 Text
  - G.723.1 Audio
- Use subsets for voice only, text only, voice and text etc.
- Good continued standardisation in IETF, ITU, 3GPP, ETSI, TIA ensures maintained interoperability



Put the user in the center
Same communication for all services

Different terminals, same standardised communication opens for efficient services for personal needs

Total conversation user

Signing users

Text user

Voice VoIP user

gateway

Text telephone (TTY) users

Voice telephone users

Text relay service

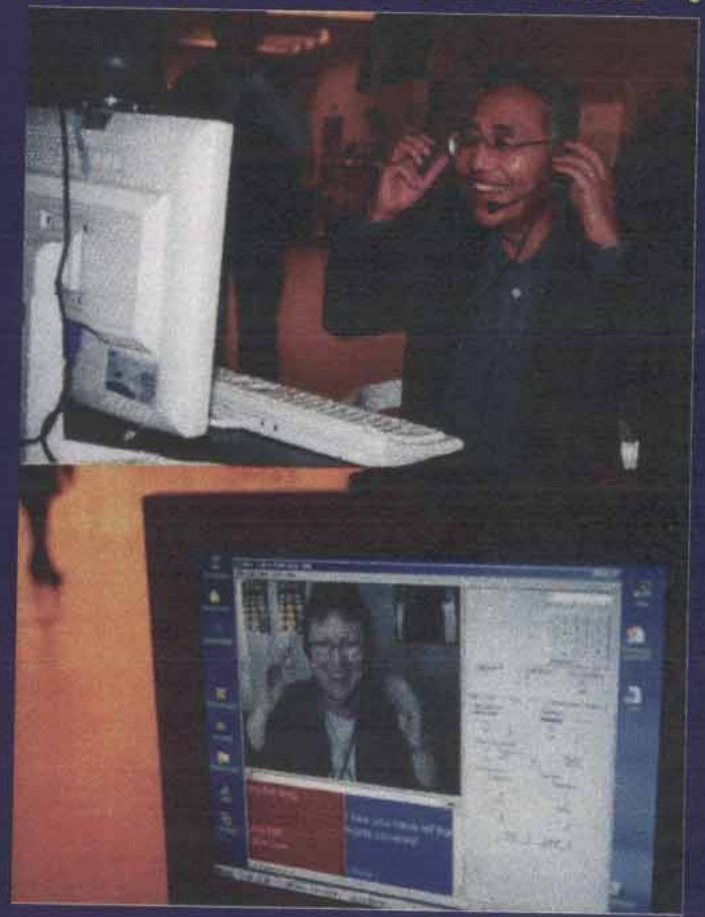
Video relay service

Emergency service

Join in implementation of accessible personal communication for All !

Without harmonization, the benefits will be missed

The IP revolution is a too good opportunity to be missed.



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ACCESSIBILITY AT AOL

America Online has recently made some exciting progress in our mission to provide our members with the most accessible Internet experience possible. From launching a pioneering initiative that brought online captions to the web, to unveiling an accessible, low-cost Internet service, to telephone-based e-mail, AOL continues to strive to deliver solutions and innovations that help bring the power of the Internet to all.

AOL's vision for accessibility is driven by the company's Accessibility Policy, a cross-company directive rooted in the belief that the Internet and AOL should be friendly and easy-to-use for all customers.

One lynchpin of our achievements has been our work with the AOL Accessibility Advisory Committee, a cross-disability group of renowned advocacy leaders and technology experts who provide advice and strategic counsel on a range of accessibility issues. Members include representatives from The National Association of the Deaf, Gallaudet University, Telecommunications for the Deaf Inc., the WGBH National Center for Accessible Media, National Federation of the Blind, AARP, American Association of People With Disabilities and other renowned cross-disability organizations.

Some recent accessibility highlights at AOL include:

Netscape Internet Service: Just the Net you need, the new affordably priced Netscape Internet service, which was designed with accessibility considerations in mind, offers people with disabilities a reliable and low-cost alternative to get online. At just $9.95 a month, the service offers unlimited dial-up connection, web-based e-mail and support for use of standard POP3 e-mail software, and a robust search product.

AOL Online Captions: In late 2003, AOL became the first commercial Internet service provider to offer online captions for select news and entertainment video content and AOL member education tutorials. Visit AOL Keyword: Accessibility for information about where to find streaming content with closed captions on AOL.

AOL Communicator: Set to launch in 2004, AOL Communicator is a suite of stand-alone applications featuring e-mail software, an easy-to-use Instant Message tool, and a player for accessing **Radio@AOL** - the top-rated radio site on the web offering 175 stations of streaming music, news, sports and talk programming, and other applications. Best of all, AOL Communicator offers accessibility-friendly features including: ability to

access multiple AOL and other e-mail accounts, robust keyboard support, comprehensive support of Windows operating system accessibility features, compatibility with leading screen reader and magnification programs including JAWS and ZoomText.

AOLByPhone: AOLByPhone, an audio-based service, offers convenient access to e-mail that is as close as the nearest telephone. Members simply dial a toll-free number to retrieve their e-mails via the phone. They can also send and reply to e-mail messages via voice, access free 411 directory assistance or get information that's relevant to their daily lives, such as news headlines, financial, sports and weather information.

AOL Keyboard Overlays: Custom keyboard overlays, designed for the IntelliKeys keyboard through a partnership with Intellitools, provide alternative, more accessible keyboard solutions for AOL members with physical or cognitive disabilities. The overlays incorporate words, phrases, graphics, and icons in a clear and easy-to-navigate format, making interaction with AOL's E-mail and Instant Message features more efficient and fun.

AOL Keyword: Accessibility: AOL Keyword: Accessibility provides a central location where members can find tips and hints about the accessibility features of AOL products and services as well as general information about AOL's accessibility efforts.

For further information on America Online and Accessibility, please contact Tom Wlodkowski, Director of Accessibility at:
703-265-1999 (voice)
703-265-6677 (TTY)
e-mail- tomwlodkowski@aol.com

Total Conversation through ITU-T & IETF Standards: Sign, Type, and Speak – You Decide

Paul E. Jones
Cisco Systems, Inc.
May 7, 2004

It's All About "Total Conversation"

- The ITU-T and IETF are working on standards that bring about the convergence of
  - Voice telephony
  - Video telephony
  - Text telephony
- These standards aim to enable what it calls "Total Conversation"

Defining the Multimedia Service

- The ITU-T defined a series of service specifications and included text and video as components of the multimedia services (F.700 and F.703)
- Several multimedia protocols evolved, including:
  - H.323 – Multimedia communication over packet-switched networks (ITU-T)
  - SIP – Session Initiation Protocol (IETF)
  - H.320 - Multimedia communication over ISDN (ITU-T)
  - H.324 – Multimedia communication over low bit-rate links (phone lines and mobile phones) (ITU-T, 3GPP)
- Multimedia systems largely focused only on voice and video

Standards focused on Disabilities

- H Series Supplement 1 – Raised awareness about sign language and lip reading as it relates to video quality
- Standards to allow text conversation:
  - ITU-T T.140 defines a representation of text suitable for transmission over IP networks and able to support all languages in the world
  - IETF RFC 2793 defines how to transport T.140 over IP
  - H.323 and SIP can utilize RFC 2793 to transmit text

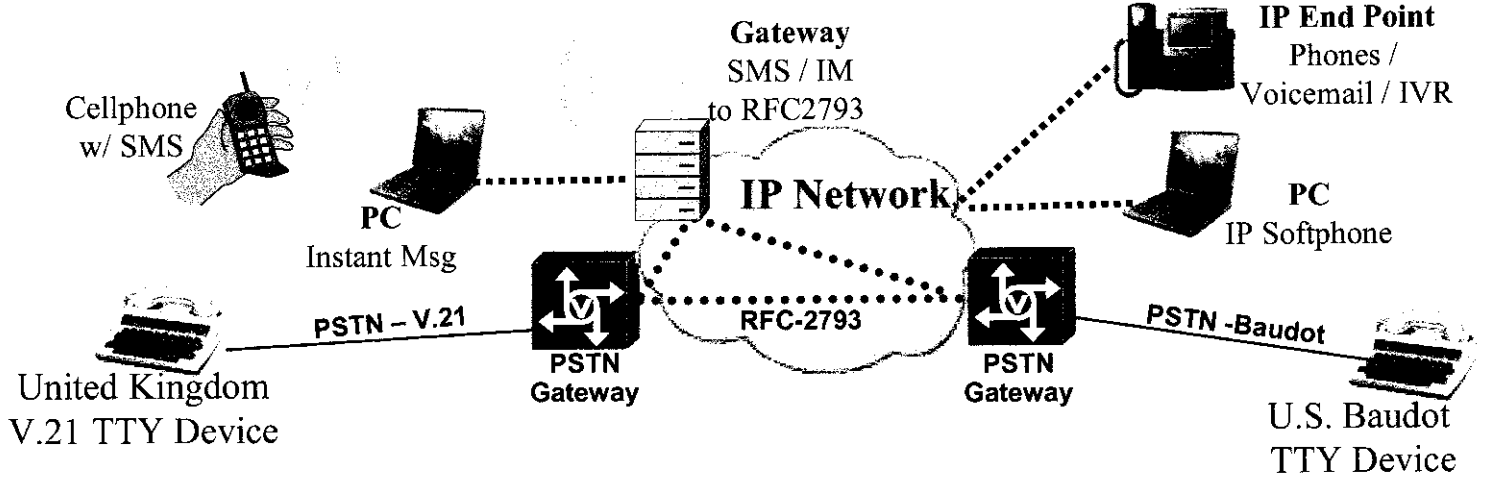
ToIP Objectives

("Text over IP")

- Focused on bridging two PSTN networks via IP
- Allow for character-by-character text communication
- Allow for simultaneous two-way conversation, along with voice and video (inherent limitations of the PSTN an obstacle)
- Standardize on an international character set (Unicode)
- Support all standard TTY device types defined in ITU-T V.18
- Enable different device types to communicate through each other by using the gateways as "interworking" devices (see next slide)
- Enable legacy, PSTN devices to communicate with newer, IP-based systems

ToIP Site: http://www.packetizer.com/iptel/toip/

RFC-2793 Enables Global TTY Communications



- **Today, TTY devices are islands and cannot communicate with other text devices or other TTY protocol around the world**
- **A new standard enables global TTY communications (e.g. V.21 to Baudot)**
  - **RFC-2793 enables transport of real-time text over VoIP**
  - **V.151 defines how to use RFC 2793 between PSTN gateways, allowing interconnection of dissimilar TTY types (expected ratification late 2004 / early 2005)**
- **RFC-2793 enables text communication revolution**
  - **Integration with IP End Points (e.g. IP Phones, Voicemail, Softphone, etc.)**
  - **Integration with Instant Messaging (70M users)**
  - **Integration with wireless Short Messaging Systems (75M US users – IDC 2003, 1.3B world-wide users – Radicati)**