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Technical Evaluation Report

31: Internet Audio Products (3/3)

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Abstract

Two contrasting additions to the online audio market are reviewed: *iVocalize*, a browser-based audio-conferencing software, and *Skype*, a PC-to-PC Internet telephone tool. These products are selected for review on the basis of their success in gaining rapid popular attention and usage during 2003-04. The *iVocalize* review emphasizes the product's role in the development of a series of successful online audio communities – notably several serving visually impaired users. The *Skype* review stresses the ease with which the product may be used for simultaneous PC-to-PC communication among up to five users.

Editor's Note: This paper serves as an introduction to reports about online community building, and reviews of online products for disabled persons, in the next ten reports in this series. *JPB*, *Series Editor*.

Product Trials

iVocalize

1) *iVocalize* is an audio conferencing software with screen reader capability (tested and reviewed by Linda Matula Schwartz). The ability to generate a sense of community among students is an important aspect of distance education. A wide range of online communities has been established around a particular software product, *iVocalize*. These groups include:

- *The Access Technology Institute*, which provides software training and discussion forums on technology for persons with visual impairments and their trainers.
- *Audio Avenue*, of the Mid-Illinois Talking Book Center, provides an online community for programming, distance training and outreach to librarians and other professionals serving persons with visual impairments.
- *Audio-Tips*: this online group began as an *iVocalize* audio chat program for persons with visual impairment. Now open to the general public, sighted people and those with impaired vision mingle in an online community.
- *Global Learn Day*, sponsored by the Benjamin Franklin Institute for Global Education, uses *iVocalize* in conjunction with a telephone call center to provide an annual 24-hour international forum showcasing innovative educational projects.

- Mississippi State University (MSU) uses *iVocalize* in conjunction with *WebCT*, to review course material, to prepare recordings for students and for weekly class conferences incorporating instructor and student *PowerPoint* presentations (Puckett, personal communication, 2003).
- *Webheads in Action*, an international group of instructors for English as a second language, is part of the *Tapped In* online community of distance education professionals. One group activity (<http://www.alado.net/webheads/>) uses *iVocalize* for an informal weekly forum. Community participant, Michael Coghlan, estimates that the group has experienced 90 percent reliability in using *iVocalize* (personal communication, 2003).

Features

iVocalize provides synchronous multipoint voice-over-IP audio conferencing and compatibility with selected screen reader programs. Minimum system requirements include a 266 MHz Pentium computer, with 64 MB RAM, Windows 98 SE or later, 28.8K dialup connection (56K recommended, dual channel sound card, and *Internet Explorer* 6). For recording sessions, microphone, speakers/ headphone, and *Windows Media Player* 9.x are required. User features include synchronous audio and text chat; time stamp on text entries; speaker queue; private conversations; active participant list; website/ presentation navigation; adjustable text area; favorites list; and active URLs in text chat. The browser design allows users to activate links in the presentation without disturbing other users who continue to see the page sent by the moderator. Additional features increasing accessibility for visually impaired persons include:

- Keyboard shortcuts
- Adjustable font size and color
- Sound alerts – participant entry/ exit; control key to speak; keyword detected in text chat
- Private message sent/ received
- On-screen volume control to eliminate need to navigate to *Windows* sound control
- Compatibility with *WindowEyes* and *Jaws* screen reader software
- Append text icons to user names
- Highlight new text messages
- Suppress private conversation tabs
- Suppress colors in text messages

A *PowerPoint* converter allows asynchronous presentations of slides saved to an FTP server or images available via URL. Recordings, played back via *Windows Media Player*, synchronize all audio, text chat and websites/ slides presented in the main room. Access to the recorded file is via a webpage with an automatically generated HTML link. Private conversations are not recorded. At the basic transmission rate (13 kbps), a one-hour presentation compresses into a 4.5 - 4.7 MB file. (A comparable .wav file would be approximately 80 MB.) Web tours can be broadcast, with recorded audio, but without text or audio chat. Features under development include application sharing and file-transfer, video, Japanese language support, and server integration with external database. *iVocalize* works well with *Dragon Naturally Speaking Preferred* voice recognition software, allowing a blind person to enter text into the chat area by speaking rather than of typing (Murtha, 2003; retrieved July 28, 2004). The accessibility of the product's audio accessibility for hearing-impaired users needs investigation.

Complexity and Control

iVocalize is intuitive and extremely easy to use. The user navigates to the host website, and enters a name and optional password. The software is installed in minutes, automatically when *Active X* is enabled in *Internet Explorer*. Installation may also be done manually. Server installation was

not tested during this review. Navigation is driven by drop-down menus and/ or keyboard shortcuts. Moderator status is configured through a separate administrative module. The moderator has complete control of the tool: audio and text mute, broadcast mode, recording, time stamp on text entries, active participant list, microphone control, audio quality and text chat control. Up to three private conversations can be held in addition to the main conference. Access controls include: block user, room lock, speaker queue, disconnect speaker, volume control, password management, and tool privilege levels. Customizable features include: program icon, room layout, background, banners, border, and menu. Technical support is provided by email, online documentation, and a live 24/7 audio/ text chat help desk.

Clarity

iVocalize was tested with 28.8K and 56K dialup and broadband connections and performed very well. Screen layout is uncluttered and logical. Audio volume and quality varied widely among users in trial sessions. An initial audio check is essential to make adjustments. No audio delay was experienced, even with 28K modem access. Audio quality can be adjusted at variable bit rates. Use of the product for music instruction might, for example, require very high quality audio, while lower quality is sufficient for voice chat. Recorded audio was very clear. Users may intermittently be dropped from a conference. Often the session continues to be audible and the user is reconnected to the server automatically. The use of simultaneous tools did not affect presentation quality. A trial with a demonstration version of the *WindowEyes* screen reader software did not reveal any compatibility problems. During an international conference, some technical difficulties were experienced, but these were not inconsistent with other conference products involving worldwide attendance. An Internet server problem traced to a router in another country caused many users to be booted out of one session. Technical support was available owing to the magnitude of this particular conference.

Common Technical Framework

Support for the *Macintosh*, *Unix*, and *Linux* platforms is planned for 2004. Alternatively, a *Windows* emulator may be used. Scalability was not tested. *Talking Communities* indicates that the program can accommodate in excess of 1,000 users. Http tunneling support is incorporated. File sharing is not supported. Full Unicode support allows the program to display commands in multiple languages.

Cost

A free trial of *iVocalize*'s conferencing features may be obtained through the product developer and vendor, *iVocalize* LLC. A single click on the *iVocalize.com* website creates a trial three person conference room. *Talking Communities*, one of the web conferencing services that uses the product, operates a room rental service. Rental prices are in the region of \$3-5/ seat/ month, depending upon features. The user operating system requirement is Win/2000 or later, and the server software is available via purchase, lease or rental from the vendor alone. Purchase pricing is based on a one-time cost of US \$60 per user (20-user minimum). Server lease prices range from \$1 - 6/seat/month (50-user minimum). [Price check updated October, 6, 2004, *JPB, Series Editor*]

Skype

Skype is PC-to-PC telephone freeware (tested and reviewed by Adrienne de Schutter, Patricia Fahrni and Jim Rudolph; updated 28/July/04).

Skype provides a simple and user-friendly means for 2-5 people to communicate in real time over the Internet using either audio and/ or text. The beta version of *Skype* was tested, released in 2003 by the developers of the successful *Kazaa* audio file-sharing software. The product initializes a direct connection between the users' IP addresses. It allows users free online calls locally and internationally, although the developers suggest this may change in future releases. The process of downloading and configuring *Skype* was relatively straightforward using the installation wizard, which in one case seamlessly configured the software to a testers' firewall. Establishing voice communication was a simple matter of selecting the other user's name from a previously created list, and clicking on the call icon. Unlike other audio-conferencing products, there is no need to invite users into a private chat room: communication is direct between users. It can also be enhanced using the text feature. On the inexpensive headsets used in our tests, audio clarity was very clear – in fact comparable to standard telephone technology. The software is intuitively easy to use, and a help file plus answers to frequently asked questions are available online.

A drawback of the program is its restriction to no more than five simultaneous users (**Note:** up to four users were possible during our test of the beta version). Establishing an address list requires the user to know the *Skype* IDs of each person in order to add them to the list. *Skype* operates on *Windows 2000 and XP* platforms. Its audio transmissions are routed using peer-to-peer (P2P) technology, by which each end-user's PC is utilized for traffic routing, processing, and additional bandwidth. By contrast, other IP audio programs may utilize one or more central servers to perform these functions. *Skype*'s decentralized approach (messages passed directly from one user to another) helps to encrypt communications. The compression algorithm for voice communications can be configured to operate on a 28k baud modem.

Update

Skype v.1.0 has been released on July 27, 2004 with enhancements including file-transfer and support for mobile phone users.

Conclusions

For distance education (DE) users, *iVocalize* is an intuitive, user-friendly *Windows*-based audio-conferencing software with a wide range of useful features. The product's browser-based design makes it unusually easy for computer novices to install and use. *iVocalize* combines modest hardware and software specifications with a reasonable pricing structure, particularly for educational organizations unable to provide high-speed bandwidth. DE students can review archived recordings in revision work or as a substitute for a missed conference. Broadcast presentations can be used as online seminars or demonstrations. The product could also be configured to reach a wider DE audience by the addition of a telephone call center and relay for radio broadcast. This would be particularly valuable for students with minimal Internet access. The support planned for the *Macintosh*, *Unix*, and *Linux* platforms will increase the product's utility. The special value of *iVocalize* for disabled users suggests numerous valuable questions for further testing.

As with *iVocalize*, *Skype* is easy to use and install. As long as only audio conferences are small (five or less), the product provides economical and straightforward service. Both of these products represent a new generation of online audio products, emphasizing cost-effectiveness and ease of use.

The next report in the series discusses Internet audio and accessibility issues.

N.B. Owing to the speed with which Web addresses become outdated, online references are not cited in these summary reports. They are available, together with updates to the current report, at the Athabasca University software evaluation site: cde.athabascau.ca/softeval/. Italicised product names in this report can be assumed to be registered trademarks.

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