(54) Title: VOICE CONTEXT E-MAIL.

(57) Abstract: An electronic mail messaging system includes an interface, message formatting and a methodology to provide e-mail having audio voice clips keyed to specific passages of text or to the whole of the text of the e-mail. Audio voice files are attached to the text portion of the message and a header is provided with includes coding associating the voice files with the passages in the text. The user activates a voice clip playback by clicking on one of the passages, or by selecting from a voice clip play list which is displayed with the text portion of the e-mail. The user is provided with playback controls for controlling the recording and playback of the clips.
TITLE OF INVENTION

VOICE CONTEXT E-MAIL

TECHNICAL FIELD OF THE INVENTION

This invention relates to electronic messaging. In particular this invention relates to the provision of enhanced features for electronic mail.

BACKGROUND OF THE INVENTION

The body of the vast majority of electronic mail (e-mail) messages sent today consists of pure text. In some cases, content in other formats is also present by way of HTML graphic objects, HTML web pages, ASCII-based imaging, or other elements bundled into the body of the e-mail message.

Typically more involved multimedia content is conveyed by means of attachments to the e-mail message. This is the preferred approach for conveying media formats such as audio, music, video, images, data, or text. Conveying them as attachments allow the recipient to open, save, play, read, forward or otherwise deal with the attachments at the recipient's leisure.

The desirability of providing multimedia enhancements to text-based e-mail messages and of providing different means for conveying such content has been recognized in the prior art.
United States Patent No. 6014688 to Venkatraman, et al. discloses an e-mail program for transmitting, opening and presenting a container having digital content (e.g. visual images, audio) using embedded executable software. The sender inserts images, sounds, and functional attributes that the sender inserts into the e-mail message that is sent. The header of the e-mail includes the e-mail address of the sender, and recipient executable embedded software that ensures the recipient will be able to view contents and perform the functional attributes that make up the E-mail message.

According to the '688 patent, the executable software that is transmitted as part of the E-mail message is written using the Java (trademark of Sun Microsystems) programming language and contains a self-opening message feature, such that the container automatically opens and is initially viewed with all of the desired content appearing. Thereafter, depending upon the content originally included by the sender, and the action taken on the part of the recipient, different portions of the content and functional attributes are displayed. Thus visual, audible and functional attributes may be enabled under the control of the recipient.

United States Patent No. 5,995,093 to Lambourne et al. discloses a message formatting interface enabling the sender to compose a message consisting of video, audio, and text monomedium elements.

United States Patent No. 6,018,774 to Mayle et al. discloses a system for storing an image file on a server and for presenting a combination of the image and text matter to a recipient of an electronic postcard.

United States Patent No. 6,014,689 to Budge et al. noted that text-only e-mail fails to utilize the full potential of the electronic medium. Budge et al. disclose a video e-mail system capable of incorporating both audio and video into a “video e-mail” message. Optionally executable video e-mail
software is embedded in a header of the video e-mail message. A recipient of the video e-mail is provided with a graphical user interface enabling the recipient to control the play of the video e-mail. The message comprises media packets each of which includes data identifying the packet as a component of the video or audio portion of the message.

However, none of the prior art appears to provide a system for providing voice over content that is specifically keyed to various passages in the text portion of an e-mail message or in which the voice and text components can be played concurrently and independently.

It is therefore an object of the present invention to provide a medium for collaborative and individual communications, which are enriched in relation to simple text-based e-mail.

It is a further object of this invention to provide means for enhancing the contextual experience of sending and receiving e-mail, by allowing a voice overlay to a text-based message and to provide such voice overlay that is enabled to run concurrently with the display of the complete text and also be cued to run by specific text portions of the e-mail message and that may be controlled independently of the text portion of the message by the recipient.

These and further objects of the invention will be appreciated by reference to the summary of the invention and to the detailed description of the preferred and alternative embodiments which follow.
SUMMARY OF THE INVENTION

The present invention provides a system for creating, configuring, presenting and receiving an e-mail message that includes one or more voice files that are associated with specific passages in the text portion of an e-mail message.

The enhanced e-mail according to the invention allows the recipient to select text and to play the audio file corresponding to a given passage in the text and to play that file. The association of an audio file with a given portion of text is indicated by highlighting of the text, in the form of a colour and an underline or in some other convenient way.

In a preferred embodiment, the audio files comprise voice over narrative segments to provide clarification or context for text portions of the e-mail message.

The recipient is provided with a graphical user interface for controlling the display of the text portion of the enhanced message and for the independent and concurrent control of the audio portion of the enhanced message.

In one aspect of the invention, the sender and the recipient do not need to have a microphone application in order to create or respond to a voice/text e-mail. Either the sender or the recipient can trigger a voice context e-mail server to phone them to record or play the audio depending upon whether they are composing (replying, forwarding) or viewing an enhanced message.
If an audio file has been attached to the whole message and not cued to highlighted portions of the text then the audio file may be played automatically upon opening the message or manually by pressing a 'play audio' control.

Another aspect of the invention is a one step response feature, which activates the recipient’s recording functionality and allows for a simple audio only response.

Other aspects of the invention will be more fully appreciated by reference to the following detailed description of the preferred and alternative embodiments and to the claims by which the exclusive rights to the invention are defined.

**BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 illustrates a browser based voice context e-mail application from a subscriber recipient’s point of view according to the preferred embodiment of the invention;

Fig. 2 illustrates a composing screen showing the compose/reply/forward viewer for subscribers and non-subscribers;

Fig. 3A to 3D are a flowchart describing the server processes according to the invention; and,

Fig. 4A and 4B are an illustration of the header and text portion of an e-mail according to the invention.
DETAILED DESCRIPTION OF THE INVENTION

In the preferred embodiment, a voice context e-mail server offers the e-mail capability of the invention to remote users through application software residing on the server. Access to the application is provided through a web browser. The application provides basic e-mail functionality as well as the functionality for the voice context e-mail according to the invention. The server interacts with the user’s web browser to provide the interface needed to present and control the voice context e-mail according to the invention.

Fig. 1 illustrates a typical e-mail message displayed according to a first embodiment of the invention. The illustrated example uses the format of a specific web browser but the invention is of course not confined to any specific web browser.

A text message 10 is displayed in the preview window (12) of the browser with a sidebar frame 18 having audio controls 16 and a play list 20. In the illustrated example, the first passage or cue 14 is denoted by highlighting and/or underlining. By clicking on the cue, the audio component is launched and the audio message is played over the recipient’s audio output device while the text portion continues to be displayed.

The menu bar of audio controls 16 is provided in the sidebar frame 18 of the preview window 12 to enable the recipient to stop, continue, rewind or fast forward the audio playback at the recipient’s leisure. Other such control functions may also be provided. The composition window illustrated in Fig. 2, a record button 27 is also provided for use by the sender in composing a message or by the recipient for formulating a reply as discussed below.
If an audio message is associated with the whole text of the e-mail rather than with a single passage, the audio may be set to play automatically upon viewing or when the play control is used.

In order to create an audio enhanced e-mail message, the sender uses the web browser to access the voice context e-mail application on the voice context e-mail server.

The first window the user sees will look like a generic e-mail interface but the text window will include a sidebar frame which includes audio control buttons. The user clicks on the “New Message” (or equivalent) button and a composition window appears as illustrated in Fig.2. The audio controls menu bar 26 occupies the top portion of the sidebar frame in the composition window. The user begins to create the message.

In order to provide a voice over for a given portion of text, the sender highlights a word, phrase, sentence, or any amount of text within the composition window and selects “record audio” button 27. An instruction dialog box appears instructing the user to commence recording and the user records the voice over. When the recording is complete, the user clicks the Stop button and the audio clip is automatically associated with the passage in the text, which had been highlighted.

In each case, the audio file is saved in a compressed format as an attachment to the e-mail message and the text cue is automatically underlined by the application and displayed in the cue play list window 28 to show that the recording has been made and cued successfully.

The sender may audit the recording by clicking on the cue in the text window.
The sender then clicks on the send icon 22, the message is formatted with the appropriate standard e-mail and internet headers, and with the masked header according to the invention (described below), and is stored on the voice context e-mail server for retrieval by the recipient in the usual way. Where the recipient is not a subscriber to the voice context e-mail service, a simple plain text message with an embedded URL is sent inviting the non-subscribing recipient to contact the server to view and listen to the message.

The invitation includes instructions following standard operating system conventions on how to proceed if the invitation is presented as plain text and they are unable to connect to the embedded URL.

Fig. 3 is a flowchart of the steps taken in using the voice context e-mail service according to the invention. This flowchart and discussion assumes that the application software resides on a server remote from the users.

Upon a subscribed user accessing the program (30), the user is logged into the server (31) and the user preferences and configurations are retrieved (32) for the session. In the case of a non-subscriber, the non-subscriber requests the URL (33) provided him by the server and after the ID is validated, a generic configuration is loaded (34) for the non-subscriber.

In both cases, the hardware capabilities are determined, controls initiated, and the client software is transmitted to the user’s browser (35). Once this is complete, the main interface for the application is presented on the user’s browser (36), including a message list and preview window.
The message list and preview window can be used to read mail and play voice context e-mail messages (38), or it can be used to open a particular message (39). When the message is displayed, the application waits for the user (37), and the user may again read the message and play audio portions (38).

In creating a new message, or replying to, or forwarding an existing message (42), the user is presented with a blank message window (43), and the application waits for the user's input (44).

The user typically would enter text (45) and then highlight the text (46) to be associated with an audio clip. It is possible to use the "record" feature (47) without entering text, in which case the recorded voice cue will automatically be associated with the whole message. When "record" is selected, the highlighted text location and highlight information is gathered (48).

If the user's computer has appropriate hardware for the recording and playback of audio, then the hardware is activated, and recording begins (49).

Optionally, if the appropriate hardware cannot be detected, or cannot be used for some reason (no microphone or speakers to use with the soundcard), then the user's phone number is read from the user's profile. If the number cannot be found, or the user is non-subscribed, they are prompted for a telephone number where they can be reached. The number is dialed by the server (50). In this case, the call is answered by the user, the server provides instruction on how to use the features to record their message. The server waits for the appropriate key presses (51).
The user may pause during recording a message in order to prevent gaps in the message, or ending the message and having to continue in a second separate message (52). Any audio captured prior to pausing is saved in order to speed processing of further audio (53).

Once the recording is complete as indicated by a final Stop (52), the audio stream is saved along with the cursor or highlighted location and the location of the first 50 characters of the associated text (54). The audio capture and/or phone call are ended (55).

When the user elects to send the message (56), the audio stream, is converted and embedded into the message (57). After ensuring that the recipient has been entered, the header is written, and message is stored on the server for retrieval (58).

The server determines whether or not the recipient is a subscribed user or not (59) and if so, reloads the message list window (36). If the user is not, a simple text message is sent to the non-subscribed recipient inviting them to view, and reply to, the message using the voice context e-mail service (60).

In the preferred embodiment, the recipient uses a web interface to access the voice context e-mail server to retrieve messages. The server provides a first interface window that looks similar to a typical e-mail window but includes a sidebar frame with audio controls.

Upon opening a message, the recipient will see the text and the associated audio cues 14 as illustrated in Fig. 1. In order to hear an audio clip, the recipient simply clicks on the audio cue. The recipient can therefore
elect to hear the voice over associated with portions of the text message. The recipient uses the audio controls to stop, start, rewind, pause or fast forward through the media clip.

When a recipient wishes to reply to a message, the recipient clicks on the usual "Reply" button on the tool bar. The resulting composition window will include a sidebar with audio controls 26 as described above in relation to the creation of an original message.

In the composition window, the recipient will be able to see the text and audio cues from the sender and will be able to create a reply in the usual way. The recipient may add text and create cues for the message in the same manner as the sender did initially. If new cues or text are added to the original body of the text, the new cues and/or text are denoted by the user's name in brackets and in colors matching the new cues. This structure and color scheme will be reflected in the sidebar frame play list.

As a result, the message will then contain audio and text portions from each party. The recipient clicks on the send icon and the message is sent back to the sender. When the sender checks the e-mail, both parties' text and audio cues will be visible and any of the audio clips of either party can be played back.

The application comprises of software written in any of the various application development languages for the internet including but not limited to Java (a trademark of Sun Microsystems, Inc.), Active X or Flash (a trademark of Macromedia, Inc.) which have the benefit of being largely platform independent. As long as there is a suitable run-time environment or plug-in on a user's computer, regardless of the hardware or operating
system, the user will be able to take advantage of the software to enable the invention.

The basic structure and layout of the server-based interface is programmed in HTML using frames to separate the audio control toolbar from the text and audio cue portions of the e-mail messages.

The application stores the details of the association between each audio clip and each portion of the text in a unique encoded message header described below.

Audio embedded within a message can be considered to be an attachment to the message. The attachment is a binary file that is encoded to text data using any of the standard techniques, including but not limited to MIME and UUEncode, for transmission to, and storage on, the server.

Enhanced e-mail messages according to the invention may include standard Internet e-mail headers. However, the body of the message must include a unique encoded header recognizable as such only to the voice context e-mail application and that is masked or viewed as unreadable data to other applications. The additional header comprises information that defines it as an audio enhanced message, provides details of the audio in the message, such as what audio files link to what portions of the text, and the length of the audio clips.

Voice and text are formatted and stored together. By doing so the logistics of file management and storage when residing on the server disappear. The audio files included in the text message as an encoded attachment are automatically correlated and are compressed together easily.
When messages are viewed, the application reads the headers of each message. When a message is found that includes the unique encoded message header, the application activates any links within the text to provide access to the audio messages as described on page 4 "overview of functionality and user interface."

In the preferred embodiment of the invention, any recipient of an enhanced e-mail message according to the invention who is not a subscribed user may reply to, and only to, the sender of the message using a functionally limited version of the application on the server through a link that is offered within the body of the e-mail message. The link provides information to the recipient's web browser that includes who the sender was, and an ID for the original message. This information allows the application server to validate the use of the facility by the non-subscribed user. The link also includes a small message offering access to the service should the recipient wish to subscribe.

In another embodiment when sending to a non-subscribed user, who can be presumed to not have access to the voice context e-mail application on the server, the attachment will be organized as multiple attachments (as per the header information) and the embedded cues will be included as cue number references in the text body so that the recipient can cue and play the associated audio files. The files will be stored in standard file formats and then transmitted to the mail server of the non-subscribed recipient. Upon receipt, the attachment is decoded back to binary data using the same techniques and made available for the recipient to listen to.

In order to accommodate the use of audio in a text document, audio input must be collected. Where the appropriate hardware exists, namely a sound device capable of recording audio and playing it back, it is any easy
enough task to enable the sound device and record or playback audio using functions built in to the operating system. However, when there is no sound device present on the PC capable of recording or playing audio, another method must be used. To this end, part of the information stored by the application on the server, includes a phone number where the user may be reached, and/or can prompt the user for a number where they may be reached when creating or reading enhanced e-mail. The server then initiates a call to the user prompting them with instructions over their telephone. The user can record any number of audio clips within the same message using this method.

Likewise, when playing back received e-mail, the server can initiate a phone call to the user and play the audio in the message over the phone. This process opens the scope of usability of the product so that anyone, regardless of platform may listen to the Voice Context E-Mail messages. Similarly, a user receiving e-mail on a wireless unit could then be contacted by the server and the audio clips associated with the text messages could be played over their cellular telephone. The telephone link portion of the application can employ, but is not limited to, any of VOIP, cellular, POTS or other technologies.

The voice context e-mail header takes on a form that allows the program to determine information about the links to the audio within the e-mail message. The components of the header are as follows:

VCHeaderID: [A unique ID created from the Time/Date stamp, sender e-mail address, recipient e-mail address, and that delimits the beginning of the header]
C=Cue [A unique integer that delimits the beginning of a Cue]
B=Begin [Character position from beginning of document]
L=Length [Number of characters from and including B]
D=Distance [Number of characters from and including L, maximum 50
or to the end of the line or beginning of the next cue ]
S=Source [1=Audio, 2=outside link]
T=Time [number in seconds, URL if S=2]
I=Terminate Cue line

(Repeat above from C=Cue to I=Terminate Cue Line for each subsequent
cue)

VCH=Header=Terminate header

Fig. 4 illustrates a header created from the date and time, the
sender’s e-mail address, and the recipient’s e-mail address, and the text
portion of a message.

Set out below is a play list generated by parsing the voice context e-
mail header of Fig. 4:

1. The Princess and the Pea.
   URL:http://www.millinx.com/pandp/index.html
2. prince. Audio: 25s. prince who wanted to marry a ...
3. princess. Audio: 32s. princess; but she would have to be a real
   princess ...
4. thunder and lightning. Audio: 17s. thunder and lightning, and the rain
   poured down in ...
5. old king. Audio: 26s. old king went to open it...
6. eider-down beds. Audio: 22s. eider-down beds on top of the mattresses...
7. twenty mattresses. Audio: 34s. twenty mattresses and the twenty eider-down beds...

In the preferred embodiment of the invention which has been described herein, the application software enabling the invention resides in an application server remote from the users and the user’s e-mail interface is downloaded from the server. Alternatively the application may be delivered to users as a plug-in to upgrade the user’s existing e-mail software or as a stand-alone application to be loaded on the user’s computer. In such cases, the server’s role may be obviated entirely or may be restricted to providing enhanced functionality to the voice context e-mail. The server may also still be used to provide voice context functionality for users who do not have the plug-in or stand-alone application. In the latter case, the voice context email plug-in or stand-alone program may cause outgoing messages to include instructions for non-users to forward the e-mail to the server and to log in for access to the functionality of the invention.

Upon a subscriber logging into the application server, software is downloaded from the server to the user’s computer to run within the user’s browser. The software includes a graphical user interface for the voice context e-mail program. The software also provides browser-based functionality to compose the text portion of the e-mail message and to control the activation and input from the user terminal audio devices. When the user highlights or otherwise selects passages from the text to be associated with an audio voice clip, the browser-based software provides text highlighting or other visible cues to identify the passages in distinction to the balance of the text.
Upon the user highlighting a passage and activating the record function, the browser-based software configures a cue header identifying the passage, dispatches the header which is then received by the server, and begins transmitting the audio clip to the server. This happens every time the user begins recording in association with a text passage. Once the text message and audio clips have been completed, the user sends the message.

As the successive headers and audio streams are received by the server, the server configures a master header by inserting the individual cue headers in their proper sequence. Upon receipt of the complete text message after the user has sent the message to the server, the server bundles up the audio streams into a number of attachments to the text message and adds the master header. The message is then ready to be either stored for viewing or dispatched to the communication network for forwarding to the intended recipient.

It will be appreciated that the preferred embodiment has been described in some detail. However those skilled in the art will realize that variations to the practical embodiments of the invention may be practised without departing from the principles and scope of the invention.
CLAIMS

1. An electronic mail message for transmission over an electronic medium, said message comprising a text portion and at least one audio voice clip, each of said at least one audio voice clips being associated with a specific passage from said text portion.

2. A message as claim 1 wherein said at least one audio voice clip is a plurality of audio voice clips.

3. A message as in claim 2 wherein each specific passage is visibly marked as having an associated voice clip.

4. A message as in claim 3 wherein said marking comprises presenting said passage in a script, font, style or colour that is different from the portions of text not associated with a voice clip.

5. A message as in claim 4 further comprising playback controls for controlling the playback of said voice clips.

6. A message as in any of claims 1 to 3, further comprising playback controls for controlling the playback of said voice clips.
7. A message as in any of claims 1 wherein the message comprises a header, said header not being displayed on a user's screen, said header comprising information associating each of said voice clips with said specific passages of text.

8. A message as in claim 7 wherein said header further comprises information detailing the length of each voice clip.

9. A message as in claim 7 or claim 8 wherein said header further comprises a predetermined number of characters from the passage associated with each voice clip.

10. A message as in claim 7 or 8 further comprising playback controls for controlling the playback of the voice clips.

11. A message as in claim 1, 7 or 8 further comprising a list of voice clips identified by reference to the characters in the text associated with said passage.

12. An electronic mail message for transmission over an electronic medium, said message comprising a text portion and a single audio voice clip, said message further comprising audio playback controls for controlling the play of said voice clip.
13. A message as in claim 12 wherein said voice clip is cued to play automatically when the text portion of said message is presented on screen for viewing.

14. A message according to claim 1, 2, 3, 7, 8 or 12 further comprising information identifying at least one audio voice clip as originating with a previous recipient of said message.

15. A method of providing to a remote user the means for creating and sending over a communication network electronic mail messages that include a text message and at least one audio clip associated with specific passages in said text message, characterized by:

- providing a graphical user interface for use by said remote user's terminal device;
- receiving information from said terminal device associating said passages with audio clips;
- receiving at least one audio clip from said terminal device;
- receiving the complete text message from said terminal device;
- configuring an electronic message including said information, said text message and said audio clips; and,
- making said message available for viewing to said communication network.
16. A method as in claim 15 wherein said step of receiving information occurs each time said user commences recording an audio voice clip in association with one of said passages.

17. A method as in claim 16 wherein said step of receiving audio clips from said terminal device occurs each time said user commences recording an audio voice clip in association with one of said passages.

18. A method as in claim 16 wherein said step of configuring an electronic message comprises the step of creating a message header that includes the information received each time said user commenced recording said voice clips.

19. A method as in claim 18 wherein said header further comprises information detailing the length of each voice clip.

20. A method as in the claim 18 wherein said step of configuring an electronic message comprises the step of embedding said audio clips as encoded ASCII code attached to the text portion of the message.

21. A method as in any claims 15 to 20 wherein said graphical user interface includes audio playback and record controls.
22. A method as in claim 15 further comprising the step of providing a telephone link to a user to enable the user to record or audit an audio voice clip.

23. A method as in claim 22 further comprising the step of determining whether said user has an audio input and output device, and if said user does not, inviting said user to provide a telephone number and initiating said telephone link.

24. A method as in claim 22 further comprising the step of determining whether said user has an audio input and output device, and if said user does not, inviting said user to telephone a predetermined telephone number, receiving said telephone call and providing to said user instructions for recording or auditing an audio voice clip.

25. A method as in any of claims 22 to 24 further comprising the step of recording an audio voice clip using said telephone link, and configuring said message to include said audio voice clip.

26. A graphical user interface for electronic mail messages wherein said messages include a text portion and at least one audio voice clip associated with specific passages in the text, comprising:

   a text display window;

   a list of said voice clips; and,

   audio playback controls for controlling the playback of said voice clips.
27. A graphical user interface as in claim 26 wherein said list of voice clips identifies characters of text associated with each voice clip.

28. A graphical user interface as in claim 26 wherein said list of audio voice clips identifies a predetermined number of characters of text beginning with the first character of text within the passage to which the voice clip is associated.

29. A graphical user interface as in claim 26, 27 or 28 wherein said passages are visibly identified as having an associated audio voice clip.

30. A graphical user interface as in claim 26, 27 or 28 wherein the playing of voice clips does not displace or modify the display of text in the text display window.

31. A method for a user to cause an electronic mail message to be configured and dispatched over a communication network comprising:

establishing a communication link and initiating a communication session with a remote application service provider; and,

communicating to said application service provider a text portion for said message, at least one audio voice clip, and information associating each audio voice clip with a specifically identified passage in said text.
32. A method as in claim 31 wherein said information is communicated to said application service provider as a plurality of information packets separately communicated to said application service provider in the course of said session.

33. A method as in claim 31 or 32 wherein each of said plurality of audio voice clips is separately communicated to said application service provider in the course of said session.

34. A method as in claim 31 further comprising the step of identifying at least one specific passage of text to be associated with an audio voice clip by highlighting said passage, and initiating an audio recording.

35. A method for a user to cause an electronic mail message to be configured and dispatched over a communication network comprising:

   establishing a communication link and initiating a communication session with a remote application service provider;

   providing text input;

   selecting at least one passage from said text input for association with an audio voice clip;

   initiating the recording of an audio voice clip; and,
dispatching said text input and said audio voice clip to said application service provider for forwarding to a recipient of said message.

36. A method as in claim 35 wherein said step of selecting at least one passage comprises the step of highlighting said passage of text.

37. A method as in claim 36 wherein said step of initiating the recording of an audio voice clip comprises the user selecting a record button.

38. Software for enabling a user to configure and send an electronic mail message, said software comprising the following functions:

   establishing a communication link and initiating a communication session with a remote application service provider;

   providing a graphical user interface to said user;

   accepting text input from said user;

   enabling the user to identify each of a plurality of specific passages from said text for association with an audio voice clip;

   enabling the user to commence recording an audio voice clip;

   storing information associating said audio voice clip with said specific passage;
enabling the user to terminate the recording of said audio voice clip;

dispatching said information to said application service provider;

dispatching said audio voice clip to said application service provider; and,

dispatching said text input to said application service provider.

39. Software as in claim 38 wherein said step of dispatching said information relating to a given audio voice clip takes place immediately upon the termination of the recording of said given audio voice clip.

40. Software as in the claim 39 wherein said step of dispatching said audio voice clip begins immediately upon the commencement of the recording of said audio voice clip.

41. Software as in claim 38, 39 or 40 wherein said information is configured according to a predetermined header structure prior to said step of dispatching said audio voice clip.

42. Software as in claim 39 wherein said information is communicated to said application service provider as a plurality of information packets separately communicated to said application service provider in the course of said session.
43. Software as in claim 40 wherein each of said plurality of audio voice clips is separately communicated to said application service provider in the course of said session.

44. Software as in claim 38 further comprising the step of identifying at least one specific passage of text to be associated with an audio voice clip is by the user highlighting said passage and initiating an audio recording.

45. A method for transmitting an electronic mail message over a communication network, said mail message comprising text, said method comprising the steps of associating a plurality of audio voice clips with specific passages in said text, configuring an electronic mail message that includes the text, the audio voice clips and information associating each audio voice clip with a specific passage in said text, and transmitting said electronic mail message.

46. A method as in claim 45 wherein said information is provided in a header portion of said message.

47. A method as in claim 45 or 46 wherein said audio voice clips are coded as encoded ASCII and bundled as an attachment to said text.

48. A method for transmitting an electronic mail message over a communication network, said mail message comprising text, said method comprising the steps of associating at least one audio voice clip
with a specific passage in said text, configuring an electronic mail 
message that includes the text, the audio voice clip and information 
associating the audio voice clip with said specific passage in said text, 
and transmitting said electronic mail message.

49. A method of presenting an electronic mail message for review, said 
message comprising a text portion, at least one audio voice clip, and a 
header containing information associating each of said at least one 
audio voice clip with specific passages in said text portion, said method 
comprising the steps of:

   parsing said header into a plurality of cues, each of said cues 
   associating an audio voice clip with a specific passage in said 
text portion; and,

   displaying said text portion with each of said specific passages 
   being visibly distinguished from the balance of said text portion 
to indicate an association of said passages with an audio voice 
clip.

50. A method as in claim 51 further comprising the step of enabling each of 
said visibly distinguished passages to be selected by a user to trigger 
the playing of the audio voice clip associated with said passage.
51. A method as in claim 50 further comprising the step of displaying a list of said audio voice clips and enabling each of said listed audio voice clips to be selected for playing of said audio voice clip.

52. A method of reviewing an electronic mail message comprising a text portion, at least one audio voice clip, and a header containing information associating each of said at least one audio voice clip with specific passages in said text portion, said method comprising the steps of:

- causing the text portion of said message to be displayed, said display including an identification of said specific passages; and,
- clicking on one of said specific passages to cause to cause said audio voice clip to play on an audio output device.

53. A method as in claim 52 further comprising the step of selectively stopping or continuing the play of said audio voice clip.

54. A method as in claim 52 further comprising the step of initiating a recording of an audio voice clip, associating said audio voice clip with said message and replying to said message.
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<th>VIEW</th>
<th>GO</th>
<th>HELP</th>
<th>BACK</th>
<th>FORWARD</th>
<th>RELOAD</th>
<th>HOME</th>
<th>SEARCH</th>
<th>PRINT</th>
<th>STOP</th>
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**LOCATION**: HTTP://WWW.MILINX.COM

**FOLDERS**
- TODAY
- INBOX
- OUTBOX
- CALENDAR
- CONTACTS
- DRAFTS
- TRASH

**NEW** | **DELETE** | **REPLY** | **SEND** | **FORWARD** | **SEND** | **CHECK MAIL** |
|--------|------------|------------|-----------|-------------|-----------|---------------|

**RECEIVED**

**FROM**
- JAN FORCIER
- NEW TELEPHONE PROMPT VOICE
- Thu 4/6/00
- GRENFOO...
- CUSTOM USER INTERFACE DOCUMENT
- Thu 4/6/00

**TO**
- (MILINX)

**SUBJECT**
- JAN FORCIER
- NEW TELEPHONE PROGRAMMING

**MESSAGE CUE**
- AUDIO: 15S
- TELEPHONE: 21S
- TELEPHONE PROGRAMMING
- GROUP IN THE PROPER TO THE "VOICE" ON THE OFFICE SYSTEM.
- THERE WILL ALSO BE A TRANSITION PERIOD OVER THE NEXT FEW WEEKS OR SO.

**TIME**
- 00:07

**PAYLOAD**

**FIG. 1**

**TABLE**

**1/8**

**SUBSTITUTE SHEET (RULE 26)**
USER LOGS IN

VALIDATE USER

URL REQUESTED BY NON-SUBSCRIBER

ID IS VALIDATED GENERIC CONFIGURATION LOADED

READ CONFIGURATION

PROBE CLIENT HARDWARE CAPABILITIES INITIATE CONTROLS TRANSMIT CLIENT

LOAD MESSAGE LIST WINDOW

F
FIG. 3B

LOAD MESSAGE WINDOW
LOAD CONTROLS
DISPLAY MESSAGE

QUERY DB FOR MESSAGES
WHERE USER IS RECIPIENT

VIEW MESSAGE

CREATE/REPLY/FORWARD
NEW MESSAGE

LOAD NEW MESSAGE WINDOW
FIG. 3C

D

E

(47) RECORD VOICE

(48) MARK CURSOR LOCATION

(49) ACTIVATE SOUND HARDWARE
BEGIN AUDIO CAPTURE

(50) READ PHONE NUMBER FROM PROFILE
ASK IF IT IS THE CORRECT NUMBER TO CALL
DIAL PHONE NUMBER

(51) WAIT FOR CALL TO BE ANSWERED
PROVIDE INSTRUCTIONS
RECORD MESSAGE
MONITOR KEY COMMANDS

(52) STOP PAUSE

(53) WRITE AUDIO STREAM TO TEMP FILE
WAIT FOR UN-PAUSE

(54) WRITE AUDIO STREAM TO TEMP FILE
WRITE CUE TO TEMP HEADER

(55) STOP AUDIO CAPTURE OR TERMINATE PHONE CALL

(44) WAIT FOR USER ACTION
FIG. 3D

(45) ENTER TEXT

(46) HIGHLIGHT TEXT

(56) SEND MESSAGE

(57) ATTACH TEMP AUDIO FILE(S) TO MESSAGE

(58) ENSURE ADDRESSING INFO IS ENTERED WRITE HEADER INFO TO MESSAGE STORE MESSAGE

(59) IS RECIPIENT SUBSCRIBED?

YES

NO

(60) SEND PLAIN TEXT MESSAGE TO RECIPIENT
The Princess and the Pea By Hans Christian Andersen (1835)

Once upon a time there was a prince who wanted to marry a princess; but she would have to be a real princess. He travelled all over the world to find one, but nowhere could he get what he wanted. There were princesses enough, but it was difficult to find out whether they were real ones. There was always something about them that was not as it should be. So he came home again and was sad, for he would have liked very much to have a real princess.

One evening a terrible storm came on; there was thunder and lightning, and the rain poured down in torrents.

Suddenly a knocking was heard at the city gate, and the old king went to open it.

It was a princess standing out there in front of the gate. But, good gracious! What a sight the rain and the wind had made her look. The water ran down from her hair and clothes; it ran down into the toes of her shoes and out again at the heels. And yet she said that she was a real princess.

“Well, we'll soon find that out,” thought the old queen. But she said nothing, went into the bedroom, took all the bedding off the bedstead, and laid a pea on the bottom; then she took twenty mattresses and laid them on the pea, and then twenty eider-down beds on top of the mattresses.
Fig. 4B

On this the princess had to lie all night. In the morning she was asked how she had slept.

“Oh, very badly!” said she. “I have scarcely closed my eyes all night. Heaven only knows what was in the bed, but I was lying on something hard, so that I am black and blue all over my body. It’s horrible!”

Now they knew that she was a real princess because she had felt the pea right through the twenty mattresses and the twenty eiderdown beds.

Nobody but a real princess could be as sensitive as that.

So the prince took her for his wife, for now he knew that he had a real princess; and the pea was put in the museum, where it may still be seen, if no one has stolen it.

There, that is a true story.
A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F17/60

According to International Patent Classification (IPC) or to both national classification and IPC.

B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched.

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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<th>Relevant to claim No.</th>
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<td>X</td>
<td>MOELLER E ET AL: &quot;The BERKOM multimedia-mail teleservice&quot; COMPUTER COMMUNICATIONS.NL,ELSEVIER SCIENCE PUBLISHERS BV, AMSTERDAM, vol. 18, no. 2, 1 February 1995 (1995-02-01), pages 89-102, XP004032505 ISSN: 0140-3664</td>
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<tr>
<td>A</td>
<td>the whole document</td>
<td>7-10, 12-30, 35-44, 47, 49-51</td>
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</table>

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents:
  *A* document defining the general state of the art which is not considered to be of particular relevance
  *E* earlier document but published on or after the international filing date
  *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
  *O* document referring to an oral disclosure, use, exhibition or other means
  *P* document published prior to the international filing date but later than the priority date claimed
  *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
  *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
  *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
  *S* document member of the same patent family

Date of the actual completion of the international search
2 February 2001

Date of mailing of the international search report
28/02/2001

Name and mailing address of the ISA
European Patent Office, P.B. 5816 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl
Fax. (+31-70) 340-3016

Authorized officer
Schmidt, A

Form PCT/ISA/210 (second sheet) (July 1992)
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<td>LEE, HYUNG-WOO ET AL.: &quot;Integrated Multimedia E-mail Handler with Authoring Tool&quot;&lt;br&gt;PROC. OF HIGH PERFORMANCE COMPUTING ON THE INFORMATION SUPERHIGHWAY ASIA 1997,&lt;br&gt;28 April 1997 (1997-04-28)&lt;br&gt;- 2 May 1997 (1997-05-02), pages 517-522,&lt;br&gt;XP002159314&lt;br&gt;abstract&lt;br&gt;section 1: Introduction&lt;br&gt;section 4: Multimedia E-mail Handler with Authoring Tool</td>
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<td>US 5 826 062 A (FAKE JR JOHN WESLEY ET AL) 20 October 1998 (1998-10-20)&lt;br&gt;column 1, line 27 - column 2, line 5</td>
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<td>EP 0 570 147 A (OLIVETTI &amp; CO SPA)&lt;br&gt;18 November 1993 (1993-11-18)&lt;br&gt;abstract&lt;br&gt;page 2, line 34 - page 3, line 5</td>
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