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(54) **INSTANT MESSAGING WITH VOICE CONVERSATION FEATURE**

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See application file for complete search history.

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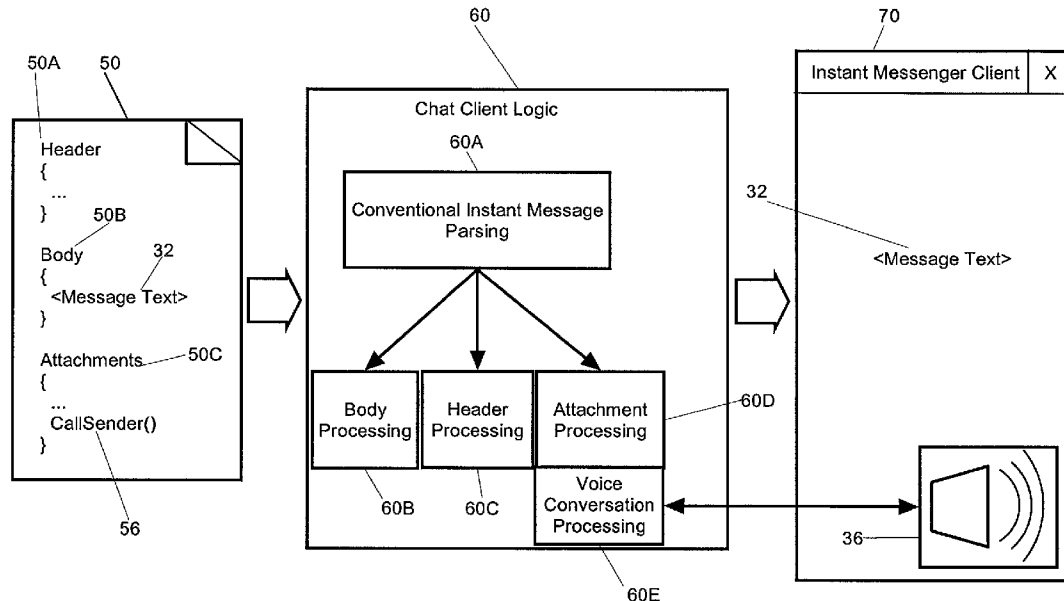
Primary Examiner—Brian Nguyen

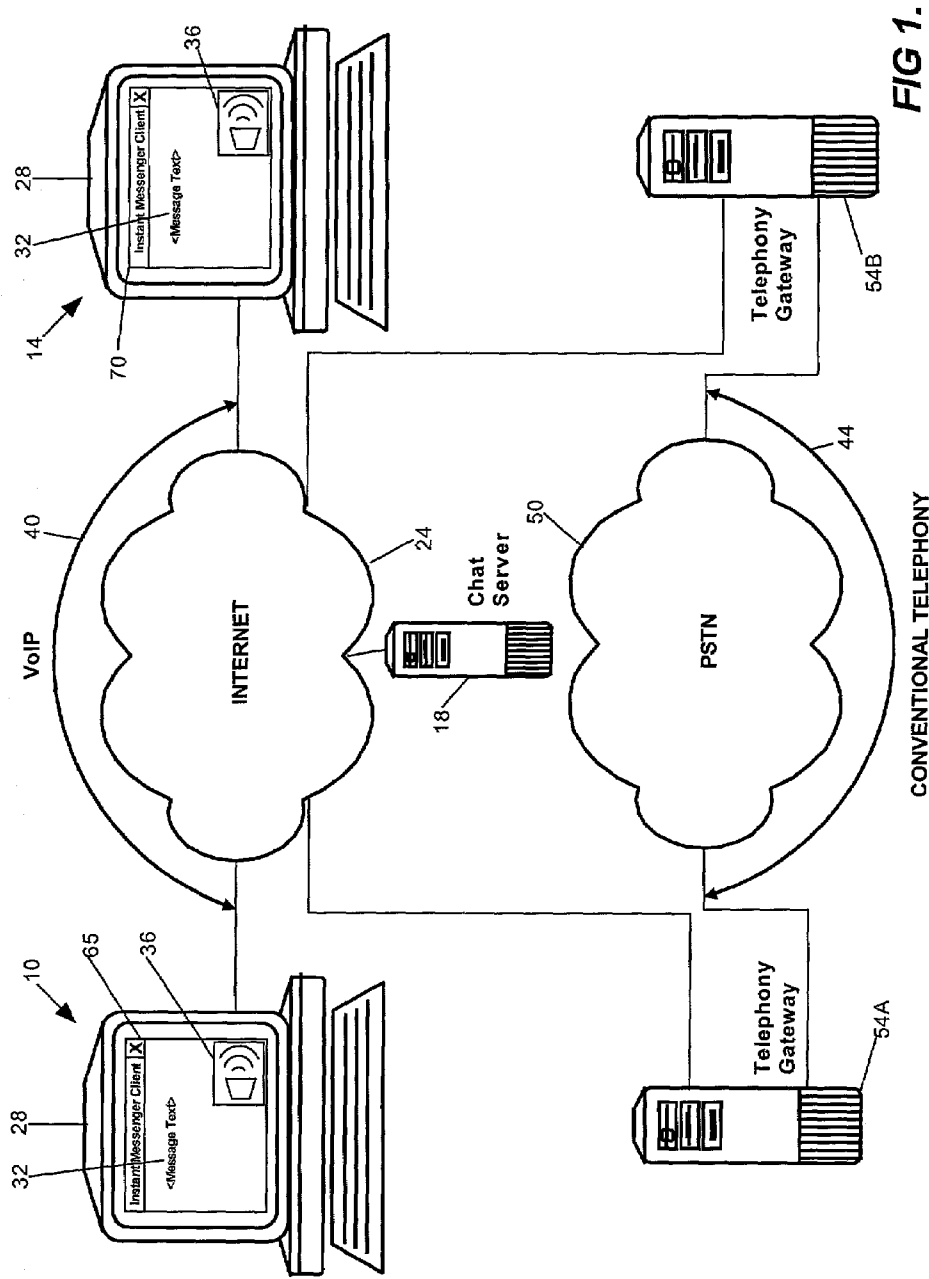
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(57) **ABSTRACT**

An instant message (IM) communication method. An IM communication method can include the steps of: detecting a voice communications identifier in an IM transmitted by a sender; responsive to detecting the voice communications identifier, displaying a selectable icon; and, responsive to a selection of the icon, establishing a voice communications link with the sender. The establishing step can include the step of, responsive to the recipient selecting the voice communications identifier, establishing a Voice over IP (VoIP) based voice communications link with the recipient. Alternatively, the establishing step can include the step of, responsive to the recipient selecting the voice communications identifier, establishing a telephony-based voice communications link with the recipient over a public switched telephone network (PSTN).

37 Claims, 2 Drawing Sheets





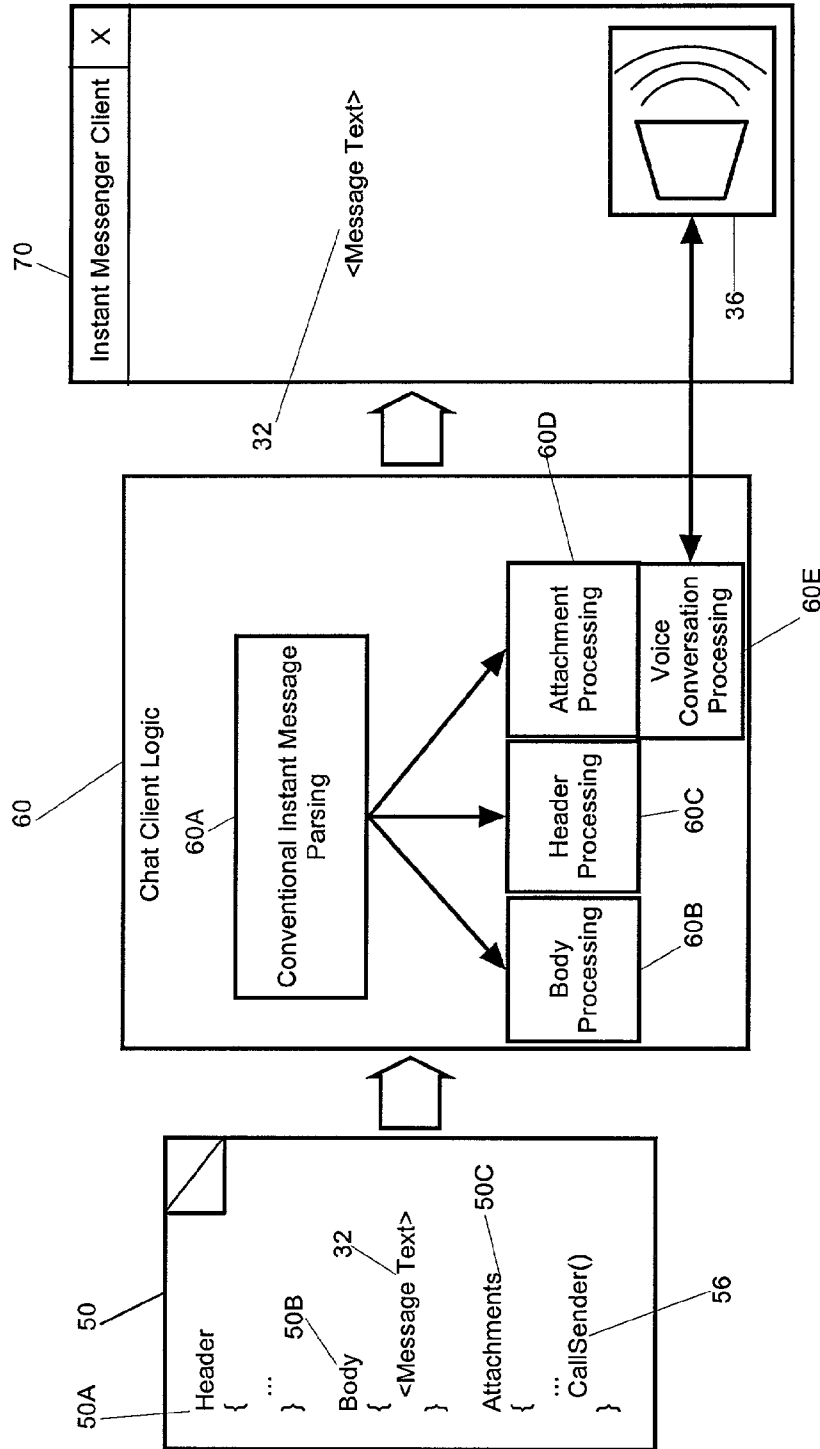


FIG. 2

INSTANT MESSAGING WITH VOICE CONVERSATION FEATURE

BACKGROUND OF THE INVENTION

1. Technical Field

This invention relates generally to Internet-based communication systems, and more particularly to text-based Internet communication systems such as instant messaging and on-line chat.

2. Description of the Related Art

Text-based internet communication systems such as instant messaging and chat over a data communications link have become increasingly popular due to the substantially real time nature of the communication, low cost, and simplicity of use. The instant messaging or chat (IM/Chat) client typically has a message text window in which an incoming text-based instant message (IM) can be presented to an end user. IMs that are sent by the end user through the IM/Chat client also can appear in the message text window.

IM/Chat systems work well for many communications, but there are times when clients would prefer voice communications. For example, on occasion the contents or subject matter of an IM/Chat session can give rise to a desire for voice communications. In such instances, it is usually necessary to terminate the IM/Chat session, drop the data communications link and establish a voice communications link through known methods such as a conventional telephony over the publically switched telephone network (PSTN). In such instances, the spontaneity of the conversation is lost, and details of the conversation can be forgotten. The voice communications link sometimes cannot be established, in which case all communications, both data and voice, are terminated. The extra steps necessary to establish a voice communications link will impede some from establishing such a link even when such may be necessary or desirable.

Conventional IM/Chat systems also can support the exchange of attachments. Attachments are electronic files such as images, documents or binary objects which can be attached to an IM and transmitted therewith from a sender to a recipient. Attachments can be embedded in a labeled section of an IM such that an IM client processing the IM can identify the presence of an attachment and can decode the contents of the attachment so that the attachment can be further processed by the recipient. Hence, attachments can enhance the utility of exchanging IMs and can provide a supplemental medium for communicating ideas between participants in an IM/Chat session.

Still, IM and IM attachments are not always an adequate replacement for live voice conversations between IM/Chat session participants, particularly where extensive interaction between the participants is necessary or desirable. In some instances, such conversations are necessary to explain or discuss the message text included in the IM, attached documents or audio/visual files. Moreover, a telephone sometimes is not available to the participants, or the use of a telephone requires lengthy dialing procedures which interrupts the spontaneity of the communication. Sometimes telephone access by the participants requires that at least one of the participants terminate an on-line connection to the

SUMMARY OF THE INVENTION

The present invention is an instant message (IM) processing system and method and an IM article of manufacture for use therewith. From the perspective of a person sending an IM to one or more recipients, an IM communication method in accordance with the inventive arrangements can include the steps of: inserting in an IM a voice communications identifier; transmitting the IM to a recipient; and, responsive to the recipient selecting the voice communications identifier, establishing a voice communications link with the recipient. The establishing step can include the step of responsive to the recipient selecting the voice communications identifier, establishing a Voice over IP (VoIP) based voice communications link with the recipient. Alternatively, the establishing step can include the step of, responsive to the recipient selecting the voice communications identifier, establishing a telephony-based voice communications link with the recipient over a public switched telephone network (PSTN).

The inserting step can further include the step of inserting in the IM a selectable symbol denoting voice communications availability. Moreover, the inserting step can further include the steps of: inserting in the IM a reference to a sender of the IM; and, embedding computer program code in the IM, wherein the computer program code is configured to establish a voice communications link with the sender. In that case, the establishing step can include the step of, responsive to the recipient selecting the voice communications identifier, executing the embedded computer program code in order to establish a voice communications link with the sender.

The establishing step can include the steps of, responsive to the recipient selecting the voice communications identifier, determining a link address for the sender based on the reference, and executing the embedded computer program code in order to establish a voice communications link with the sender according to the determined link address. Notably, the link address can be a telephone number. Also, the link address can be an IP address.

By comparison, from the perspective of a recipient node receiving an IM transmitted by a sending node, an IM communication method can include the steps of: detecting a voice communications identifier in an IM transmitted by a sender; responsive to detecting the voice communications identifier, displaying a selectable icon; and, responsive to a selection of the icon, establishing a voice communications link with the sender. The establishing step can include the step of, responsive to the recipient selecting the voice communications identifier, establishing a Voice over IP (VoIP) based voice communications link with the recipient. Alternatively, the establishing step can include the step of, responsive to the recipient selecting the voice communications identifier, establishing a telephony-based voice communications link with the recipient over a public switched telephone network (PSTN).

Notably, the establishing step can include the steps of: extracting from the IM embedded computer program code configured to establish a voice communications link with the sender; and, responsive to the selection of the icon, executing the embedded computer program code in order to establish a voice communications link with the sender. Also, an embedded reference to the sender can be extracted from the IM. In that case, the executing step can further include the steps of: determining a link address for the sender based

munications link with the sender according to the determined link address. Notably, the link address can be a telephone number. Also, the link address can be an IP address.

The invention also contemplates the transmission of an IM to multiple recipients. In that case, the method can further include the steps of extracting from the IM embedded references to the sender and at least one other recipient of the IM; and, displaying a corresponding selectable icon for each of the at least one other recipients. Additionally, responsive to a selection of one of the selectable icons, a corresponding recipient can be identified and a link address can be determined for the corresponding recipient based on the extracted reference; and, the embedded computer program code can be executed in order to establish a voice communications link with the corresponding recipient according to the determined link address. Finally, responsive to a selection of two or more of the selectable icons, a corresponding recipient can be identified for each selected icon and a link address determined for the corresponding recipients based on the extracted references; and, the embedded computer program code can be executed in order to establish a conference call with the corresponding recipients according to the determined link addresses.

In accordance with the inventive arrangements, IMs can be created, transmitted and parsed in the computer communications network. An IM article of manufacture for use with IM/Chat session clients in the computer communications network can include a header component encapsulating a reference to at least one of a sending node in the network and a recipient node in the network; a text message component encapsulating message text which can be extracted from the IM and displayed in an IM/Chat session client; and, an executable voice communications link program component configured to establish a voice communications link between the sending and recipient nodes. The voice communications link can be a Voice over IP (VoIP) based communications link. Alternatively, the voice communications link can be a telephony-based link

Also in accordance with the inventive arrangements, IMs can be processed in an IM/Chat session client. An IM client configured to process an IM can include a conventional IM processor, the conventional IM processor extracting and displaying message text encapsulated in a received IM; and, a voice conversation processor, the voice conversation processor identifying a voice communications link identifier encapsulated in the received IM, displaying a selectable icon in response to detecting the voice communications link identifier and, responsive to a selection of the selectable icon, establishing a voice communications link with a sender of the received IM.

BRIEF DESCRIPTION OF THE DRAWINGS

There are shown in the drawings embodiments which are presently preferred, it being understood, however, that the invention is not limited to the precise arrangements and instrumentalities shown, wherein:

FIG. 1 is a schematic diagram of a network based instant message (IM)/chat system for use in the present invention.

FIG. 2 is a block diagram of an IM/chat client processing

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention is an instant message (IM) communications method and system for processing an IM which has been configured in accordance with the inventive arrangements. The method can include both a sender inserting in the IM a voice communications identifier and the sender transmitting the IM to a recipient. The recipient can detect the voice communications identifier in the IM and, in addition to displaying message text contained in the IM, the recipient can display a selectable icon. Responsive to the selection of the icon, a voice communications link can be established between the sender and the recipient. In particular, the voice communications link can be a Voice over IP (VoIP) based voice communications link over the computer communications network, or a telephony-based voice communications link over a public switched telephone network (PSTN).

An exemplary network based IM/chat system according to the invention is shown in FIG. 1. A first IM/chat client **65** in a sending node **10** and a second IM/chat client **70** in a recipient node **14** are shown although the invention can be utilized with any number and configuration of IM clients acting as both sending and receiving nodes. In one exemplary case illustrated in FIG. 1, however, IMs can be transmitted and received by the first IM client **65** over a computer communications network such as the Internet **24** through a chat **18**. Similarly, IMs can be transmitted and received by the second IM client **70** over a computer communications network such as the Internet **24** through the chat server **18**. Still, the invention is not limited to a particular chat server configuration and more than one chat server can be used by the first and second IM clients **65**, **70** to send and receive IMs.

Once received, an IM can be parsed and the contents **32** can be displayed in the IM client **70** as is well-known in the art. Additionally, information pertaining to the sender, recipient and other pertinent data can be extracted from the IM and optionally displayed in the IM client **70**. Examples of pertinent data can include references to the sender and one or more recipients such as network IP addresses. Pertinent data also can include a message subject and transmission date and time information.

Importantly, a voice communications identifier can be included in the IM to indicate that a voice communications link can be established between the sending and recipient nodes **10**, **14**. Upon receipt of an IM, the IM client **70** can detect the voice communications identifier when parsing the IM. Responsive to detecting a voice communications identifier in the IM, the IM client can display a selectable voice communications icon **36** which can indicate to an IM recipient that a voice communications link can be established between the sending node **10** and the recipient node **14**. The icon **36** is preferably displayed within the present message text **32**, although alternative placement of the icon **36** is possible. The icon **36** can be any suitable text or graphic symbol, but preferably represents voice communications to a typical viewer.

Selection of the icon **36** by a viewer can cause the establishment of a voice communications link between the recipient node **14** and the sending node **10**. In particular, though the voice communications link can be provided through any suitable voice communications technology, in one aspect of the present invention, a voice communications

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