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(71) Applicant *(for all designated States except US)*: **INTERNATIONAL BUSINESS MACHINES CORPORATION** [US/US]; New Orchard Road, Armonk, NY 10504 (US).

(71) Applicant *(for MG only)*: **IBM UNITED KINGDOM LIMITED** [GB/GB]; PO Box 41, North Harbour, Portsmouth, Hampshire PO6 3AU (GB).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **BROWN, Michael** [US/US]; 529 River Down Road, Georgetown, TX 78628 (US). **PAOLINI, Michael** [US/US]; 6407 Wallace Cove, Austin, TX 78750 (US). **SMITH, Newton, Jr.** [US/US]; 11002 Bitteroot Circle, Austin, TX 78726 (US).

(74) Agent: **WATSON, Justine, Nicola**; IBM United Kingdom Limited, Intellectual Property Law, Hursley Park, Winchester, Hampshire SO21 2JN (GB).

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(54) Title: PROVIDING A PORTION OF AN ELECTRONIC MAIL MESSAGE

(57) Abstract: There is provided method, apparatus, article, system for providing a portion of an email. It is first determined whether it is desirable to provide less than all of an email. A portion is selected and is then provided. Selection may be based upon a transfer rate, a message size, and a file format.

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Description

PROVIDING A PORTION OF AN ELECTRONIC MAIL MESSAGE

Technical Field

[001] This invention relates generally to electronic mail messaging.

Background Art

[002] Electronic mail has become a central feature of modern life and users have come to expect to receive electronic mail messages at any time and in virtually any place. For example, during the course of one day of travel, a user may receive electronic mail messages at a home desktop computer in the early morning, an office desktop computer in midmorning, via a cell phone or personal digital assistant in a taxi on the way to the airport, on a laptop computer via a wireless local area network while waiting in the airport lounge, via an in-flight telephone on the airplane, and in a hotel room via a high-speed Internet connection provided by the hotel at the end of the day.

[003] Thus, depending on the circumstances, electronic mail messages may be transmitted and/or received by a wide variety of devices at any given time. In addition to the aforementioned end-user devices, such as desktop computers, laptop computers, cell phones, personal digital assistants, and the like, electronic mail messages typically also pass through a variety of network servers, network switches, hubs, routers, transmission lines, wireless transmission media, modems, interface cards, and the like. The transfer rates of these devices and/or media can vary by many orders of magnitude. For example, a laptop computer's modem may be limited to a transfer rate of 56K bits per second, a cable modem may easily provide data at a transfer rate of 1-2 megabits per second, and a T-3 connection may provide data at a transfer rate as high as 40 megabits per second.

[004] The complexity and size of electronic mail messages has increased roughly in proportion with the available transfer rate. Early electronic mail message systems relied upon comparatively slow modems and thus these electronic mail messages were typically limited to short ASCII text documents. Modern electronic mail messaging systems, on the other hand, may utilize high-speed connections to transmit documents containing complex formatting, audio, graphics, video, and the like. For example, a user may send and/or receive an electronic mail messages with a PowerPoint attachment including formatted text, images, and animations. For another example, a user with the appropriate licenses may send and/or receive a feature length movie as an

electronic mail message. The size of these files may easily exceed several megabytes, and users may expect to transmit even larger files in the future.

[005] Despite the advantages of using high-speed connections to transmit large information-rich electronic mail messages, the same messages can become problematic when they must be transmitted by a lower speed connection. For example, a user reading electronic mail messages on a laptop computer connected to the Internet via a 14.4K dial-up modem may have to wait an inordinate amount of time for a large electronic mail message to be downloaded through the modem. As another example, a user writing electronic messages on the laptop computer connected to the Internet via a 14.4Kbps(K bits per second) dial-up modem may want to attach a large document to an electronic mail message, but may have to wait an unreasonable amount of time for the electronic mail message to be uploaded through the modem. In addition, bottlenecks, heavy traffic, device malfunctions, severed transmission lines, geomagnetic storms, and the like can dramatically, and often unpredictably, decrease the transfer rate of even the highest speed networks. Consequently, the user may have to wait an unreasonable amount of time to receive any indication of the content of the electronic mail message, including any attached files.

[006] Moreover, it may be difficult for the user to determine what information may be contained in the electronic mail message without receiving the entire message. For example, conventional electronic mail messaging systems are not typically able to identify and/or provide relevant portions of electronic mail message attachments to the user unless the entire message has been received by the user. This problem is exacerbated by the large number of different file formats or file types that may be included in the attachments.

[007] For example, conventional electronic mail messaging systems are not typically able to play audio files in electronic mail message attachments unless the entire message has been received by the user. For another example, conventional electronic mail messaging systems are not typically able to display graphics files, such as films and/or animations, in electronic mail message attachments unless the entire message has been received by the user. This problem is exacerbated by the virtually unlimited number of formats, such as Moving Picture Experts Group (MPEG), Joint Photographic Experts Group (JPEG), Graphics Interchange Format (GIF), Portable Network Graphics (PNG), Video for Windows, Apple Quicktime®, AVI, and the like, available for the files that may be included in the attachments.

[008] Electronic mail messages are often used to schedule meetings and to distribute

materials that may be useful to the participants in the meeting. For example, electronic mail may be an efficient way to transmit documents to geographically dispersed participants in a teleconference, a video conference, and the like. However, it may be difficult for some participants to receive these documents if, for example, the files containing the documents are relatively large and the participants are receiving the electronic mail message via a low speed connection. Thus, the participants may not be able to timely receive the documents for the scheduled meeting.

[009] The content of an electronic mail message may also be subject to a variety of digital rights management rules, including copyright restrictions, distribution rights, broadcast rights, reproduction rights, publication rights, licensing restrictions, fair use, other restrictions imposed by the Digital Millennium Copyright Act, and the like. For example, a musician may create a digital representation of a musical composition in a format such as the Moving Pictures Expert Group 1 Audio Layer 3 format, commonly known as MP3. Although the musician may want to distribute the MP3 file to a wide audience, he/she may also want to be reimbursed for the creative work of composing the music. Consequently, the musician may only grant the right to use the MP3 file to listeners that have purchased digital rights, *e.g.* a license, to use the MP3 file. The listener, on the other hand, may not want to purchase the digital rights until he/she has previewed the composition.

[010] The present invention is directed to addressing, or at least reducing, the effects of, one or more of the problems set forth above.

Disclosure of Invention

[011] According to a first aspect, there is provided a method, comprising: determining whether it is desirable to provide less than all of an electronic mail message; selecting a portion of the electronic mail message; and providing the selected portion of the electronic mail message.

[012] According to a second aspect, there is provided an article comprising one or more machine-readable storage media containing instructions that when executed enable a processor to: access an electronic mail message for delivery to a remote device; determine whether it is desirable to provide less than all of the electronic mail message; select a portion of the electronic mail message; and provide the selected portion of the electronic mail message to the remote device.

[013] According to a third aspect, there is provided an apparatus, comprising: an interface; and a control unit coupled to the interface and adapted to: determine whether it is desirable to provide less than all of an electronic mail message; select a portion of

the electronic mail message; provide the selected portion of the electronic mail message.

[014] According to a fourth aspect, there is provided a system, comprising: a first processor based device adapted to provide an electronic mail message; a second processor based device adapted to receive the electronic mail message; and at least one module adapted to: determine whether it is desirable to provide less than all of the electronic mail message; select a portion of the electronic mail message; and provide the selected portion of the electronic mail message.

[015] According to a fifth aspect, there is provided a method, comprising: determining that less than all of an electronic mail message has been transmitted, the electronic mail message including scheduling information indicative of a calendar event; associating the electronic mail message with the calendar event based upon the scheduling information; and providing a notification that less than all of the electronic mail message has been transmitted based on the calendar event.

[016] According to a sixth aspect, there is provided a method for interfacing with a user of a computer system having a graphical user display, comprising: displaying at least one indicator of an event associated with at least one undelivered portion of at least one electronic mail message; monitoring the position and selection status of a pointer controller to detect that one of the at least one indicator has been selected by the user; and providing scheduling information associated with the at least one undelivered portion of the at least one electronic mail message and the event in response to detecting that one of the at least one indicators has been selected by the user.

[017] According to a seventh aspect, there is provided a method for interfacing with a user of a computer system having a graphical user display, comprising: determining whether it is desirable to provide less than all of an electronic mail message; selecting at least one portion of the electronic mail message; displaying at least one text string indicative of the at least one portion of the electronic mail message; displaying at least one indication of a version of the at least one portion of the electronic mail message having a reduced resolution; displaying at least one selection field corresponding to the reduced-resolution version of the at least one portion of the at least one electronic mail message; monitoring the position and selection status of a pointer controller to detect that one of the at least one selection fields has been selected by the user; and altering the appearance of the selected one of the at least one selection fields in response to detecting that one of the at least one selection fields has been selected by the user.

[018] According to a eighth aspect, there is provided a method for interfacing with a user

of a computer system having a graphical user display, comprising: displaying at least one indicator of a digital rights management rule associated with at least one portion of at least one electronic mail message; monitoring the position and selection status of a pointer controller to detect that at least one of the at least one indicators has been selected by the user; and providing an indication of a user authorization associated with the at least one portion of the at least one electronic mail message and the digital rights management rule in response to detecting that at least one of the at least one indicators has been selected by the user.

[019] According to a ninth aspect, there is provided a method for interfacing with a user of a computer system having a graphical user display, comprising: displaying at least one text string indicative of at least one portion of at least one electronic mail message; displaying at least one indication of an estimated time to download the portion of the electronic mail message; displaying at least one selection field corresponding to the at least one portion of the at least one electronic mail message; monitoring the position and selection status of a pointer controller to detect that one of the at least one selection fields has been selected by the user; and altering the appearance of the selected one of the at least one selection fields in response to detecting that one of the at least one selection fields has been selected by the user.

[020] According to one embodiment, there is provided a method of providing a portion of an electronic mail message based upon a transfer rate, a message size, and a file format. In this embodiment, the method includes determining whether it is desirable to provide less than all of an electronic mail message and determining a format associated with the electronic mail message in response to determining that it is desirable to provide less than all of the electronic mail message. The method of this embodiment also includes selecting a portion of the electronic mail message using the determined format and providing the selected portion of the electronic mail message. An apparatus for implementing the method, as well as an article comprising one or more machine-readable storage media containing instructions that when executed enable a processor to carry out the method, are also preferably provided.

[021] In one embodiment, there is provided a method of providing a portion of an electronic mail message having a reduced resolution. The method of this embodiment includes determining whether it is desirable to provide less than all of an electronic mail message, selecting a portion of the electronic mail message, and reducing a resolution of the selected portion of the electronic mail message. The method of this embodiment also includes providing the portion of the electronic mail message with

reduced resolution. An apparatus for implementing the method, as well as an article comprising one or more machine-readable storage media containing instructions that when executed enable a processor to carry out the method, are also preferably provided.

[022] According to one embodiment, there is provided a method for interfacing with a user of a computer system having a graphical user display, comprising: determining whether it is desirable to provide less than all of an electronic mail message; selecting at least one portion of the electronic mail message; displaying at least one text string indicative of the at least one portion of the electronic mail message; displaying at least one indication of a version of the at least one portion of the electronic mail message having a reduced resolution; displaying at least one selection field corresponding to the reduced-resolution version of the at least one portion of the at least one electronic mail message; monitoring the position and selection status of a pointer controller to detect that one of the at least one selection fields has been selected by the user; and altering the appearance of the selected one of the at least one selection fields in response to detecting that one of the at least one selection fields has been selected by the user.

[023] According to one embodiment of the present invention, there is provided, a method of providing a notification of an undelivered portion of an electronic mail message based upon a calendar entry. The method of this embodiment includes determining that less than all of an electronic mail message has been transmitted, the electronic mail message including scheduling information indicative of a calendar event, associating the electronic mail message with the calendar event based upon the scheduling information, and providing a notification that less than all of the electronic mail message has been received based on the calendar event.

[024] According to one embodiment, there is provided a method of providing a notification of an undelivered portion of an electronic mail message based a determined transfer rate value, a determined value associated with a size of the undelivered portion of the electronic mail message, and the calendar event. The method of this embodiment includes determining that less than all of an electronic mail message has been transferred, the electronic mail message including scheduling information indicative of a calendar event, and associating the electronic mail message with the calendar event based upon the scheduling information. The method of this embodiment also includes providing a notification that less than all of the electronic mail message has been received based on the calendar event, determining a value associated with a data transfer rate, and determining a value associated with a size of an undelivered

portion of the electronic mail message. The method of this embodiment further includes scheduling a transfer time for the undelivered portion of the electronic mail message based upon the determined transfer rate value, the determined value associated with the size of the electronic mail message, and the calendar event.

[025] According to one embodiment, there is provided a method for interfacing with a user of a computer system having a graphical user display. The method of this embodiment includes displaying at least one indicator of an event associated with at least one undelivered portion of at least one electronic mail message, monitoring the position and selection status of a pointer controller to detect that one of the at least one indicator has been selected by the user, and providing scheduling information associated with the at least one undelivered portion of the at least one electronic mail message and the event in response to detecting that one of the at least one indicators has been selected by the user.

[026] According to one embodiment, there is provided a method of providing a portion of an electronic mail message based upon digital rights. The method of this embodiment includes determining that a user is authorized to receive less than all of an electronic mail message based on at least one digital right associated with the electronic mail message, selecting a portion of the electronic mail message such that the user is authorized to receive the selected portion of the electronic mail message, and providing the selected portion of the electronic mail message. An apparatus for implementing the method, and an article comprising one or more machine-readable storage media containing instructions that when executed enable a processor to perform the method, are also preferably presented.

[027] According to one embodiment, there is provided a method for interfacing with a user of a computer system having a graphical user display, comprising: displaying at least one indicator of a digital rights management rule associated with at least one portion of at least one electronic mail message; monitoring the position and selection status of a pointer controller to detect that at least one of the at least one indicators has been selected by the user; and providing an indication of a user authorization associated with the at least one portion of the at least one electronic mail message and the digital rights management rule in response to detecting that at least one of the at least one indicators has been selected by the user.

[028] According to one embodiment, there is provided, a method of providing a portion of an electronic mail message based upon a transfer rate and a message size. The method of this embodiment includes determining a value associated with a data

transfer rate, determining a value associated with a size of an electronic mail message, and determining a mail transfer criteria. The method of this embodiment also includes selecting a portion of the electronic mail message based upon the determined transfer rate value, the determined value associated with the size of the electronic mail message, and the determined mail transfer criteria. The method of this embodiment further includes providing the selected portion of the electronic mail message. An apparatus for implementing the method, and an article comprising one or more machine-readable storage media containing instructions that when executed enable a processor to perform the method, are also preferably presented.

[029] According to one embodiment, there is provided a method for interfacing with a user of a computer system having a graphical user display, comprising: displaying at least one text string indicative of at least one portion of at least one electronic mail message; displaying at least one indication of an estimated time to download the portion of the electronic mail message; displaying at least one selection field corresponding to the at least one portion of the at least one electronic mail message; monitoring the position and selection status of a pointer controller to detect that one of the at least one selection fields has been selected by the user; and altering the appearance of the selected one of the at least one selection fields in response to detecting that one of the at least one selection fields has been selected by the user.

[030] It will be appreciated that the present invention may be implemented in computer software.

Brief Description of the Drawings

[031] Preferred embodiments of the present invention will now be described, by way of example only, and with reference to the following drawings:

[032] Figures 1A to 1C illustrate a system for practicing various embodiments of the present invention.

[033] Figures 2A to 2E show various embodiments of an e-mail that may be stored by an e-mail management module;

[034] Figure 3 shows one embodiment of an attachment to an e-mail such as the e-mail shown in Figure 2A.

[035] Figures 4A and 4B conceptually illustrate alternative embodiments of a system that may implement one or more embodiments of the present invention.

[036] Figures 5A, 5B, 5C and figure 6 each illustrate an embodiment of a method for providing a portion of an electronic mail message, in accordance with various embodiments of the present invention.

[037] Figures 7A, 8A, 9A, 10A and 11A each show an exemplary embodiment of a user profile, in accordance with various embodiments of the present invention.

[038] Figures 7B, 8B, 9B, 10B and 11B each show an exemplary embodiment of a dialog box, in accordance with various embodiments of the present invention.

[039] Figure 12 shows one exemplary embodiment of a detail box, in accordance with one embodiment of the present invention.

[040] Figure 13 shows another exemplary embodiment of a detail box, in accordance with another embodiment of the present invention.

[041] Figure 14 shows one embodiment of a calendar entry, in accordance with one embodiment of the present invention.

[042] Figure 15 shows one embodiment of a method for providing a portion of an electronic mail message, in accordance with one embodiment of the present invention.

[043] Figure 16 shows one embodiment of a dialog box including scheduling information, in accordance with one embodiment of the present invention.

[044] Figure 17 shows one embodiment of a notification, in accordance with one embodiment of the present invention.

[045] Figure 18 shows one embodiment of an urgent notification, in accordance with one embodiment of the present invention.

[046] Figure 19 illustrates one embodiment of a method for providing a notification of an undelivered portion of an electronic mail message, in accordance with one embodiment of the present invention.

[047] Figure 20 illustrates one embodiment of a method for providing an electronic mail message, in accordance with one embodiment of the present invention.

[048] Figure 21 illustrates one embodiment of an acquisition dialog box and one embodiment of a modification dialog box, in accordance with one embodiment of the present invention.

[049] Figure 22 shows a stylized block diagram of a processor-based device, in accordance with various embodiments of the present invention.

[050] While the invention is susceptible to various modifications and alternative forms, specific embodiments thereof have been shown by way of example in the drawings and are herein described in detail. It should be understood, however, that the description herein of specific embodiments is not intended to limit the invention to the particular forms disclosed, but on the contrary, the intention is to cover all modifications, equivalents, and alternatives falling within the spirit and scope of the invention as defined by the appended claims.

Mode for the Invention

[051] Illustrative embodiments of the invention are described below. In the interest of clarity, not all features of an actual implementation are described in this specification. It will of course be appreciated that in the development of any such actual embodiment, numerous implementation-specific decisions must be made to achieve the developers' specific goals, such as compliance with system-related and business-related constraints, which will vary from one implementation to another. Moreover, it will be appreciated that such a development effort might be complex and time-consuming, but would nevertheless be a routine undertaking for those of ordinary skill in the art having the benefit of this disclosure.

[052] The words and phrases used herein should be understood and interpreted to have a meaning consistent with the understanding of those words and phrases by those skilled in the relevant art. No special definition of a term or phrase, *i.e.* a definition that is different from the ordinary and customary meaning as understood by those skilled in the art, is intended to be implied by consistent usage of the term or phrase herein. To the extent that a term or phrase is intended to have a special meaning, *i.e.* a meaning other than that understood by skilled artisans, such a special definition will be expressly set forth in the specification in a definitional manner that directly and unequivocally provides the special definition for the term or phrase.

[053] As will be described in detail below, the present invention provides for intelligent use of the bandwidth available for transmitting electronic mail messages (in accordance with various embodiments), which will be referred to hereinafter as e-mails, in accordance with common usage. For example, in one embodiment of the present invention, an e-mail server may autonomously decide whether an e-mail should be uploaded and/or downloaded based upon environmental factors such as a connection speed of a local system to a remote server. In another embodiment of the present invention, an e-mail server may autonomously decide whether an electronic mail message should be uploaded and/or downloaded based upon operating conditions such as a connection speed of a local system to a remote server and a scheduled time and/or event. In another embodiment of the present invention, an e-mail server may autonomously decide whether an e-mail should be uploaded and/or downloaded based upon digital rights management rules such as copyright restrictions, distribution rights, broadcast rights, reproduction rights, publication rights, licensing restrictions, fair use, and the like.

[054] In one embodiment, a user may decide, manually or using an automated process

based upon selected user preferences, what portions of an e-mail are sent and/or received. In particular, a downcasted portion of one or more attachments having a reduced resolution may be sent and/or received. In another embodiment, a user may decide, manually or using an automated process based upon selected user preferences, what portions of an e-mail associated with a scheduled time and/or event are sent and/or received. The user, or the e-mail server, may then be provided with a notification indicating that an undelivered portion of the electronic mail message remains, and requesting that the user, or the e-mail server, complete transmitting the electronic mail message before a scheduled time and/or event. In another embodiment, a user may decide, manually or using an automated process based upon selected user preferences, what portions of an e-mail are sent and/or received to conform to the digital rights management rules. The user may also be provided with notifications of what choices are available and what actions have been taken.

[055] Figures 1A, 1B and 1C each illustrate a system 100 for practicing one or more embodiments of the present invention. Like reference numerals represent like elements. In particular, Figures 1A, 1B, 1C conceptually illustrate embodiments that include a plurality of processor-based devices 105(1-2) coupled to a server 110 by a network 115. In the illustrated embodiments, the processor-based device 105(1) is a desktop computer and the processor-based device 105(2) is a laptop computer, although in other embodiments, these processor-based devices 105(1-2) may be any desirable type of computer, personal digital assistant, cellular telephone, and the like.

[056] The server 110, in some embodiments, may be one form of a processor-based device that can be accessed over the network 115. In accordance with some embodiments of the present invention, and as discussed below, the server 110, if desired, provides a less than the entire electronic mail message to a remote user. In some embodiments, the server 110 may be capable of performing tasks such as receiving, queuing, storing, and/or distributing e-mails to one or more users. Although not so limited, one or more of the described embodiments of the present invention can be implemented within a conventional e-mail server, such as a Microsoft® Exchange Server. In the interest of clarity, the potential functionality of the server 110 not related to the present invention will not be described in further detail, as these tools and/or features are well known to persons of ordinary skill in the art.

[057] In the embodiments illustrated in Figures 1A, 1B, 1C the processor-based devices 105(1-2) and the server 110 are communicatively coupled to the network 115 over one or more communications links 120(1-3). In various alternative embodiments, the links

120(1-3) may be one or more of infrared links, wireless local area network (LAN) links, wired LAN connections such as Ethernet connections, cellular network links, circuit board traces, wires, cables, radiofrequency links, satellite links, and the like. Moreover, any desirable protocol may be used for communications between the processor-based devices 105(1-2) and the server 110 via the network 115. For example, a transmission control protocol/Internet protocol (TCP/IP), a user datagram protocol/Internet protocol (UDP/IP), a file transfer protocol or trivial file transfer protocol (FTP/TFTP), and the like may be used.

[058] In the embodiments illustrated in Figures 1A, 1B, 1C the server 110 includes an e-mail management module 125, which may process (*e.g.* receive, queue, store, and/or deliver) one or more one or more electronic mail messages, hereinafter referred to as e-mails, in accordance with common usage in the art. An e-mail 200 that may be processed by the e-mail management module 125 is shown in Figures 2A, 2B, 2C, 2D and 2E. Like numerals reference like elements. In the embodiment(s) illustrated, the e-mail 200 includes a header 210, a body 220, and one or more attachments 230. The header 210 generally includes information indicative of the recipients of the e-mail (*i.e.* person1@ibm.com), the sender (*i.e.* person2@ibm.com), and the subject of the e-mail 200 (e.g. test message or Teleconference). The body 220 generally includes the message being conveyed. For example, in the e-mail 200 of figures 2A, 2C and 2D, the body includes a text string, "This is a test message", "This is a test message containing copyright protected material" or "Our group will have a teleconference".

[059] The e-mail message 200 shown in the figures also includes attachments 240(1-3) that, in the illustrated embodiment, include a text document 240(1), a graphics file 240(2), and an audio file 240(3). However, persons of ordinary skill in the art will appreciate that any desirable number of files, as well as any desirable type and/or format of file, may be attached to the e-mail 200. Additionally, it should be appreciated that the e-mail 200 illustrated in Figures 2A to E is exemplary in nature, and that in other embodiments it may include more, fewer, or different elements. For example, the e-mail 200 may only include a header 210 and a body 220. As another example, the e-mail 200 may also include routing information that may be used to direct the e-mail 200 to a desired destination.

[060] The e-mail 200 may also have an associated time field 245 that includes an indication of a time associated with the e-mail 200 (see figure 2C). In the illustrated embodiment, the associated field 245 includes a day (Tuesday) and a time (1:00pm) which may correspond to, for example, a scheduled day and time of a meeting.

However, the present invention is not limited to any one particular format employed for the associated field 245. In alternative embodiments, any desirable format for the field 245 may be used. For example, the time "January 1, 2000 at 12:00am" may also be represented by "1/1/00 at midnight," "1/1/2000 -- 12:00am," and the like. Alternatively, the e-mail 200 may include an indication of an event associated with the e-mail 200, such as the teleconference indicated in the exemplary e-mail 200 shown in Figure 2C.

[061] Portions of the e-mail message 200 may be subject to one or more digital rights management rules, as indicated by the closed padlocks shown in the attachments 240(1-3) in figure 2D. For example, the text document 240(1) may be an original work of fiction and the copyright for the text document 240(1) may be owned by an author, a publisher, and the like. For another example, the graphics file 240(2) may be an original work of art, such as a film, a movie, an animation, a photograph, an image, an architectural rendering, and the like. The copyright, broadcast rights, reproduction rights, distribution rights, and the like may be owned by the artist, a studio, an entity that has purchased one or more of the aforementioned rights, and the like. For yet another example, the audio file 240(3) may be a musical composition, a spoken word performance, and the like, which may be owned by a composer, a musician, or other entity.

[062] The attachments 240(1-3) may be created using a variety of tools/in any of a variety of formats. For example, the text document 240(1) may be created using Microsoft Word®, Acrobat Distiller®, Power Point®, Lotus WordPro®, or another document creation or publication tool. Thus, the e-mail management module 125 may, in one embodiment, determine a format of the e-mail 200 and/or the attachments 240(1-3), and then provide a selected portion of the e-mail 200 and/or the attachments 240(1-3), such as the attachments 290(1-3) that are determined to not violate the associated digital rights management rules, based upon the determined format. For example, the e-mail management module 125 may identify at least one chart, table, page, agenda, table of contents, summary, audio clip, or video clip based upon the determined format.

[063] For another example, the graphics file 240(2) and/or the audio file 240(3) may be formed in various proprietary and non-proprietary formats including, but not limited to, one of the Moving Picture Experts Group (MPEG) formats, a Joint Photographic Experts Group (JPEG) format, Graphics Interchange Format (GIF) format, Portable Network Graphics (PNG) format, Video for Windows® format, AVI format, and Apple

Quicktime® format. Thus, in one embodiment the e-mail management module 125 may determine a format of at least a portion of the e-mail 200 (including the attachments 240(1-3)), select a portion of the e-mail 200 to transmit and downcast the selected portion of the e-mail 200. In one embodiment, the e-mail management module 125 may select portions of an audio file, video file, a multimedia file, an image file, a graphics file, and the like to form the attachments 290(1-3) that are determined to not violate the associated digital rights management rules. In one alternative embodiment, the e-mail management module 125 may downcast one or more attachments 240(1-3), *i.e.* the e-mail management module 125 may provide reduced resolution portions of an audio file, a video file, an image file, a multimedia file, a graphics file, and the like to form the attachments 290(1-3) that are determined to not violate the associated digital rights management rules.

[064] The various document creation or publication tools may create files, such as the text document 240(1), in a wide variety of formats. For example, Microsoft Word® may create files in a format that may be read by other document creation or publication tools. For another example, Acrobat Distiller® may create files in Portable Document Format (PDF), which may be read using document reading tools such as Acrobat Reader®. The graphics file 240(2) and the audio file 240(3) may also be created and/or read using a variety of tools employing any number of desirable formats.

[065] The format of the attachments 240(1-3) may be indicated in a variety of manners. In one embodiment, the file name extension may indicate the file format. For example, files in the PDF format may be indicated by the file name extension "pdf." For another example, files in MP-3 format may be indicated by the file name extension "mp3". For another example, files in the JPEG format may be indicated by the file name extension "jpg." Alternatively, the format of the attachments 240(1-3) may be indicated by one or more characters, control characters, strings, and the like, which may be included in the attachments 240(1-3). The format of the attachments 240(1-3) may then be determined by parsing a portion of the attachment 240(1-3).

[066] Referring back to Figures 1A and 1C the e-mail management module 125 on the server 110 provides the e-mail 200, or a selected portion, to one or more designated recipients, which, for illustrative purposes, are assumed to be the users of the processor-based systems 105(1-2). Thus, in this illustrative example, the e-mail management module 125 provides at least the selected portion of the e-mail 200 to the processor-based devices 105(1-2). However, persons skilled in the art will appreciate that, in alternative embodiments, any number of users of any desirable processor-based

systems may be designated as the recipients and may receive portions of the e-mail 200 provided by the e-mail management module 1 25. The portion of the e-mail 200 transmitted to the user of each processor-based device 105(1) and 105(2) is hereinafter designated reference numbers 140(1) and 140(2), respectively.

[067] Referring to figure 1B, in one embodiment, the e-mail 200 may be associated with one or more calendars 133(1-2), 137. For example, the header 141, body 142, and attachments 143 may be associated with an entry in one or more of the calendars 133(1-2), 137. In various alternative embodiments, the calendars 133(1-2), 137 may be the calendars 133(1-2) maintained on the processor based devices 105(1-2), respectively, and/or the calendar management module 137 maintained on the server 110. For example, the calendars 133(1-2) may be provided by copies of Microsoft Outlook® that are running on the processor based devices 105(1-2). However, in alternative embodiments, any desirable scheduling and/or calendar tool may be used.

[068] Regarding figure 1B, the e-mail management module 125 on the server 110 may provide the e-mail 200, or a selected portion, to one or more designated recipients, which, for illustrative purposes, are assumed to be the users of the processor-based systems 105(1-2). Thus, in this illustrative example, the e-mail management module 125 provides at least the selected portion of the e-mail 200 to the processor-based devices 105(1-2). However, persons skilled in the art will appreciate that, in alternative embodiments, any number of users of any desirable processor-based systems may be designated as the recipients and may receive portions of the e-mail 200 provided by the e-mail management module 125. The portion of the e-mail 200 transmitted to the user of each processor-based device 105(1) and 105(2) is hereinafter designated in Figure 1B by reference numbers 140(1) and 140(2), respectively.

[069] In various embodiments, the e-mail management module 125 may provide the e-mail 200 via a variety of communication paths 130(1-2). In the illustrated embodiments, the e-mail management module 125 may transmit a selected portion of the e-mail 200 (designated by reference number 140(1)) to the processor-based device 105(1) along the communication path 130(1), which may include the link 120(3), the network 115, and the link 120(1). The e-mail management module 125 may also transmit a selected portion of the e-mail 200 (designated by reference number 140(2)) to the processor-based device 105(2) along the communication path 130(2), which may include the link 120(3), the network 115, and the link 120(2). Those skilled in the art will appreciate that communications paths 130(1-2) may include one or more intermediate gateways (not shown), routers (not shown), and the like.

[070] In one embodiment, depending upon the applicable digital rights, one or more intended recipients of the e-mail message 200 may not be authorized to receive portions of the e-mail message 200 such as the attachments 240(1-3). In order to prote ct the digital rights that may be associated with various portions of the e-mail message 200 and also provide some information indicative of the protected content of the e-mail 200, the e-mail management module 125, in one embodiment, may only transfer a portion of the e-mail 200 along one or more of the communication paths 130(1-2). As will be discussed in detail below, the e-mail management module 125, in one embodiment, may determine that a portion of the protected e-mail message 200 may be provided without violating the associated digital rights management rules. The e-mail management module 125 may then select the portion of the e-mail that is determined to not violate the associated digital rights management rules and provide the selected portion.

[071] As explained above, the data transfer rate along the communication paths 130(1-2) may vary by many orders of magnitude. For example, the communication path 130(1) may consist of a dedicated T-3 connection that may provide data at a transfer rate as high as 40 megabits per second. Accordingly, even if the attachments 240(1-3) attached to the e-mail 200 are large, *e.g.* 100MB, the total time required to transfer the copy 140(1) may remain comparatively low, *e.g.* a few seconds in the case of the 100MB attachments 240(1-3). In contrast, the communication path 130(2) may include a dial-up connection, such as the link 120(2), which may transfer data at a much lower rate. Thus, a user may have to wait several hours for the 100MB attachments 240(1-3) to be transferred via the communication path 130(2).

[072] The long transfer time may inconvenience the user, particularly if the user does not wish to see the entire e-mail 200 and/or the attachments 240(1-3) (and in some embodiments 290(1-3)). (The user may of course want to see one or more e-mails that may be transferred subsequently from the server 110.)

[073] For example, the user may wish to read a summary of the attachment 240(1) or hear only a segment of an audio file attachment or view only an initial few minutes of a video clip of a video attachment. For another example, the user may want to see a selected portion of an attachment 240(1-3), such as a section or a page. Based upon reviewing a portion of the e-mail 200, the user may then decide whether or not to receive the attachments 240(1), an additional selected portion of the attachment 240(1), and/or the entire e-mail 200.

[074] In the case of large-size attachments, such as audio, video, image, and graphic files,

a user may not want to have to download the entire e-mail to identify the nature of the e-mail or it contents. Thus, in accordance with one embodiment of the present invention embodiment, the server 110 provides a user with a lower resolution version of one or more of the e-mail attachments 240(1-3). For example, if the attachment is an audio file, such as attachment 240(2), which may include an MP3 or WAV file, the user may only need to hear a low resolution clip of the song before deciding whether or not to receive the complete attachment 240(2). In another example, if the attachment is a video file, such as attachment 240(3), which may be a Quicktime® file, the user may only need to see a reduced resolution clip of the movie before deciding whether or not to receive the complete attachment 240(3).

[075] In one embodiment, one or more portions of the attachments 240(1-3) may be assigned a higher priority by, *e.g.* a user, than other portions of the attachments 240(1-3). In this embodiment, the user may want to see only the highest priority portions of the attachments 240(1-3).

[076] In order to reduce the potential inconvenience to the user and increase the efficiency of the system 100, the e-mail management module 125, in one embodiment, may only transfer a portion of the e-mail 200 along one or more of the communication paths 130(1-2).

[077] In one embodiment, the e-mail management module 125 may determine a format of the e-mail 200 and/or the attachments 240(1-3), and then provide a selected portion of the e-mail 200 and/or the attachments 240(1-3) along one or more of the communication paths 130(1-2).

[078] In one embodiment, the e-mail management module 125 may determine a format of at least a portion of the e-mail 200 (including the attachments 240(1-3)), select a portion of the e-mail 200 to transmit, downcast the selected portion of the e-mail 200, and transmit the downcasted portion of the e-mail 200 along one or more of the communication paths 130(1-2).

[079] As will be discussed in detail below, the e-mail management module 125 may estimate a data transfer rate for the communication paths 130(1-2) and a size of the e-mail 200. In one embodiment, the estimated data transfer rate and the estimated size of the e-mail 200 may be used to estimate the time required to transfer the e-mail 200 along the communication paths 130(1-2).

[080] In one embodiment, in order to reduce potential inconvenience and to increase the efficiency of the system, the e-mail management module 125 may also select a portion of the e-mail message 200 based upon other criteria such as a data transfer rate, a size

of the e-mail 200, and the like. In one embodiment, this selection process may happen concurrently with the aforementioned selection process based upon the digital rights management rules. However, persons of ordinary skill in the art will appreciate that, in alternative embodiments, selecting a portion of the e-mail message 200 based upon other criteria such as a data transfer rate, a size of the e-mail 200, and the like may occur as a part of a separate process that takes place before, during, or after the aforementioned selection process based upon the digital rights management rules.

[081] In one embodiment, the e-mail management module 125 may select the portion of the e-mail message 200 to be transferred along one or more of the communication paths 130(1-2) by estimating a data transfer rate for the communication paths 130(1-2) and a size of the e-mail 200. In one embodiment, the estimated data transfer rate and the estimated size of the e-mail 200 may be used to estimate the time required to transfer the e-mail 200 along the communication paths 130(1-2).

[082] The e-mail management module 125 may also determine a threshold time, such as a user's maximum preferred time to transfer the e-mail 200, and compare the determined threshold to the estimated e-mail transfer time. For example, the user may select a maximum preferred transfer time of approximately one minute. For another example, the user may select a maximum preferred transfer time of approximately zero minutes to force the e-mail management module to provide a reduced copy 140(2) of all e-mails 200. Alternatively, the threshold time may be a default time.

[083] If the estimated e-mail transfer time is substantially less than the predetermined threshold time, the e-mail management module 125 may transmit substantially all of the e-mail 200. For example, the processor-based device 105(1) may receive the complete copy 140(1) of the e-mail message 200, including a header 141, a body 142, and one or more attachments 143. However, if the estimated e-mail transfer time is substantially more than the predetermined threshold time, and it is not desirable to transmit the entire e-mail 200, the e-mail management module 125 may transmit a portion of the e-mail 200. For example, the processor-based device 105(2) may receive the reduced copy 140(2) of the e-mail message 200, including a header 144, a body 145, and in some embodiments at least a selected portion of one or more attachments 146.

[084] Figures 2A-E show embodiments of a reduced copy 250, which includes a header 260 and a body 270. The header 260 includes information indicative of the recipients of the e-mail (*i.e.* person1@ibm.com), the sender (*i.e.* person2@ibm.com), and the subject of the e-mail 200 (e.g. test message - reduced copy). The body 270 includes a

text string, e.g. "This is a reduced copy of the test message." In addition, the body 270 may include other information, such as the estimated size of the attachments 240(1-3), the estimated transfer time for the entire e-mail 200 and/or for the attachments 240(1-3), and the like. In one embodiment, the reduced copy 250 may include a selected portion 280 representative of the contents of one or more of the attachments 240(1-3). In figure 2A, the selected portion 280 includes a subset 285 of the information included in the text document attachment 240(1). Although not shown in Figure 2A, the selected portion 280 may include other information, such as portions of the graphics attachment 240(2) and portions of the audio attachment 240(3). In figure 2B, the selected portion 280 includes a reduced resolution, or downcast, version 290(2) of the graphics attachment 240(2) and a reduced resolution, or downcast, version 290(3) of the audio attachment 240(3). Although not shown, the selected portion 280 may include other information, such as portions of the text attachment 240(1).

[085] In the embodiment of figure 2C, the body 270 may also include an additional text string 286 that indicates the contents of the attachments 240(1-3). In this embodiment, the additional text string 286 includes the strings "text_attachment," "image_attachment," and "audio_attachment." Although not shown in the Figure 2C, the additional text string 286 may include other information, such as an estimated size of the attachments 240(1-3), the estimated transfer time for the entire e-mail 200 and/or for the attachments 240(1-3), and the like. In alternative embodiments, the reduced copy 250 may also include downcasted portions of one or more attachments 240(1-3), selected portions of one or more attachments 240(1-3), and the like.

[086] In the embodiment of figure 2D, the reduced copy 250 may include an unprotected portion 280 that may include attachments 290(1-3) that are determined not to violate the digital rights management rules associated with the attachments 240(1-3), as indicated by the open padlocks in the attachments 290(1-3). For example, the e-mail management module 125 may determine that a section 290(1) of the text document 240(1), a thumbnail 290(2) of the graphics attachment 240(2), a reduced resolution clip 290(3) of the audio attachment 240(3), and the like may be provided without violating the digital rights management rules associate with the attachments 240(1-3).

[087] In the embodiment of figure 2E, in addition, it one embodiment, the body 270 may also include an additional text string 286 that indicates the contents of the attachments 240(1-3). In the illustrated embodiment, the additional text string 286 includes the strings "text_attachment," "image_attachment," and "audio_attachment." Although not shown, the additional text string 286 may include other information, such as estimated

size of the attachments 240(1-3), the estimated transfer time for the entire e-mail 200 and/or for the attachments 240(1-3), and the like.

[088] Figure 3 illustrates one embodiment of the attachment 240(1) and the selected portion 280 of Figure 2A. In the illustrated embodiment, the attachment 240(1) includes a Table of Contents 300, a Summary 310, and a plurality of charts 320. For example, the attachment 240(1) may be a presentation, such as a Power Point presentation. However, persons of ordinary skill in the art will appreciate that the present invention is not limited to attachments including a Table of Contents 300, a Summary 310, and a plurality of charts 320. In alternative embodiments, the attachment 240(1) may include one or more pages, agendas, audio clips, video clips, sections, chapters, and the like. In one embodiment, the Table of Contents 300, the Summary 310, and the plurality of charts 320, as well as any other portions of the attachment 240(1), may be designated by tags, which may be inserted by a user. In addition, the attachment 240(1) may include background data, setup data, fonts, speaker notes, and the like.

[089] In the illustrated embodiment, the selected portion 280 includes the Table of Contents 300 and the Summary 310. The selected portion 280 may also include additional attachment data 330. For example, the additional attachment data 330 may include information indicating the number of charts 320, the total size of the attachment 240(1), the size of one or more of the charts 320, the format of the attachment 240(1), and the like. For another example, the additional attachment data 330 may include background data, setup data, fonts, speaker notes, and the like. However, persons of ordinary skill in the art will appreciate that the selected portion 280 may include more or fewer selections from the attachment 240(1). Moreover, in some embodiments, the format of the selected portion 280 may not be the same as the format of the attachment 240(1). For example, a selected portion 280 of a PDF file, such as the title of a chart 320, may be provided in Rich Text Format.

[090] Referring to figure 1D, the email management module may provide an email in a single session. Referring back to Figures 1A, B, D and E, the e-mail management module 125 may, in alternative embodiments, "trickle download" e-mail 200, *i.e.* successively download portions of the e-mail 200 in the background during one or more sessions, to the processor-based device 105(2). In one embodiment, the e-mail management module 125 may notify the user to indicate what choices are available, *e.g.* downloading the reduced copy 140(2) or trickle downloading the e-mail 200, and/or what actions have taken place. The e-mail management module 125 may also queue and/or store the e-mail 200. For example, if the reduced copy 140(2) has been

transmitted to the processor-based device 105(2), the e-mail 200 may be queued and/or stored until a higher speed connection is available. As noted, a higher speed connection may be available for a variety of reasons, including the type of connectivity (*e.g.*, T1 line as opposed to a telephone line), the type of processor-based device (*e.g.*, a laptop computer as opposed to a PDA), and the like. In one embodiment, the e-mail management module 125 may periodically provide reminders, such as a pop-up dialog box, asking the user to connect to a high-speed connection and/or asking if the user would like to download the e-mail 200.

[091] In some embodiments, the e-mail management module 125 may periodically provide reminders, such as a pop-up dialog box, asking the user to connect to a high-speed connection and/or asking if the user would like to download the e-mail 200.

[092] In some embodiments, the e-mail management module 125 may queue and/or store the e-mail 200. For example, if the reduced copy 140(2) has been transmitted to the processor-based device 105(2), the e-mail 200 may be queued and/or stored until a higher speed connection is available.

[093] As will be described in detail herein, the e-mail management module 125 may also provide a notification indicating that a portion of the e-mail 200 has not been delivered to the intended recipient, in accordance with one embodiment of the present invention. For example, the e-mail management module 125 may determine that the current time is approaching the associated time 245, *i.e.* the time of the scheduled teleconference (fig 2C). Depending on how close the current time is to the associated time 245, the e-mail management module 125 may provide notifications more frequently and/or with higher urgency. In one embodiment, the e-mail management module 125 may provide a late notice if the current time exceeds the associated time 245.

[094] In accordance with various embodiments, a user may request that the undelivered e-mail 200 be downloaded to the processor-based devices 105(2). The notification may include giving the user an option to download the e-mail 200 and the user may request that the e-mail 200 be downloaded in response to the notification. The e-mail management module 125 may download substantially all of the e-mail 200 to the one or more of the processor-based device 105(2). However, in alternative embodiments, the e-mail management module 125 may "trickle download" the e-mail 200, *i.e.* successively download portions of the e-mail 200 in the background during one or more sessions, to the processor-based device 105(2). In one embodiment, the e-mail management module 125 may notify the user to indicate what choices are available, *e.g.* downloading substantially all of the e-mail 200 or trickle downloading the e-mail

200, and/or what actions have taken place.

[095] In the embodiment of figure 2C, the processor-based devices 105(1-2) may include e-mail modules 160(1-2), which may carry out a portion of the aforementioned processes or additional processes. For example, the e-mail modules 160(1-2) may allow a user to set up preferences as to how electronic mail messages are to be handled. When the user is ready to process electronic mail messages, the e-mail modules 160(1-2) may send a message to the server 110, such as a POP3 or IMAP server 110, which may cause various flags to be set based upon the user preferences. Electronic mail messages may then be processed in accordance with the user preferences indicated by the flags, as will be discussed in detail below. The modules 125, 160(1-2) illustrated in Figures 1A to C are implemented in software, although in other implementations the modules 125, 160(1-2) may also be implemented in hardware or a combination of hardware and software.

[096] Although the e-mail management module 125 may provide the e-mail 140(1-2) in a single session, the e-mail management module 125 may also, in alternative embodiments, "trickle download" the e-mail 140(1-2), *i.e.* successively download portions of the e-mail 140(1-2) in the background during one or more sessions, to the processor-based device 105(2). In one embodiment, the e-mail management module 125 may notify the user to indicate what choices are available, *e.g.* downloading the reduced copy 140(2) or trickle downloading the e-mail 140(1), and/or what actions have taken place.

[097] In some embodiments (e.g. figs 2B and D), the e-mail management module 125 may queue and/or store the e-mail 200. In one embodiment, the e-mail management module 125 may store the e-mail 200 until the intended recipient demonstrates that the appropriate digital rights have been obtained. For example, if the unprotected reduced copy 140(2) has been transmitted to the processor-based device 105(2), the e-mail 200 may be queued and/or stored and the intended recipient may be prompted to purchase or enact a license to receive the protected portions of the e-mail 200. In one embodiment, the e-mail management module 125 may periodically provide reminders, such as a pop-up dialog box, asking the user to acquire the appropriate digital rights and/or asking if the user would like to download the e-mail 200. Alternatively, the e-mail management module 125 may direct the intended recipient to a web site where the appropriate digital rights may be obtained.

[098] In one embodiment, the processor-based devices 105(1-2) may include e-mail modules 160(1-2), which may carry out a portion of the aforementioned processes or

additional processes. For example, the e-mail modules 160(1-2) may allow a user to set up preferences as to how electronic mail messages are to be handled. When the user is ready to process electronic mail messages, the e-mail modules 160(1-2) may send a message to the server 110, such as a POP3 or IMAP server 110, which may cause various flags to be set based upon the user preferences. Examples of flags may include, "Queue send for high speed connection," "Queue flagged target(s) receive for high speed connection," "Don't download attachments greater than xKB," "Prompt before downloading attachment(s)," and "Prompt before uploading attachment(s)."

[099] In one embodiment, the processor-based devices 105(1-2) may include e-mail modules 160(1-2), which may carry out a portion of the aforementioned processes or additional processes. For example, the e-mail modules 160(1-2) may allow a user to set up preferences as to how electronic mail messages are to be handled. For example, the user may set up a profile containing information indicative of the digital rights currently acquired by the user. In various alternative embodiments, the profile, or other indications of the digital rights acquired by the user, may be stored locally or on a remote device. When the user is ready to process electronic mail messages, the e-mail modules 160(1-2) may send a message to the server 110, such as a POP3 or IMAP server 110, which may cause various flags to be set based upon the user preferences. Electronic mail messages may then be processed in accordance with the user preferences indicated by the flags, as will be discussed in detail below. The modules 125, 160(1-2) illustrated in Figure 1A to C are implemented in software, although in other implementations the modules 125, 160(1-2) may also be implemented in hardware or a combination of hardware and software.

[100] Electronic mail messages may then be processed in accordance with the user preferences indicated by the flags, as will be discussed in detail herein. The modules 125, 160(1-2) illustrated in Figure 1A-C are implemented in software, although in other implementations the modules 125, 160(1-2) may also be implemented in hardware or a combination of hardware and software.

[101] Figures 4A and 4B conceptually illustrate a system 400 that may implement one or more alternative embodiments of the present invention. In Figures 4A and 4B, a processor-based device 401 is communicatively coupled to a server 405 by a public switched telephone network (PSTN) 410 and a network 415. Thus, the transmission of e-mails from the processor-based device 401 to the server 405 may be implemented in the alternative embodiment shown in Figure 4A/B.

[102] In various alternative embodiments, the processor-based device 401 may allow one

or more users to create and/or send an e-mail 430 or the processor-based device 401 may be an automated mail server that may create and/or send the e-mail 430. The e-mail 430 may also have an associated time, such as the associated time indicated in the associated time field 245 shown in Figure 2C. As discussed in detail above, in one embodiment, the e-mail 430 may be associated with a calendar 435 using the associated time (fig 4B).

[103] In the illustrated embodiments of figures 4A and B, the processor-based device 401 includes an e-mail management module 420 that may provide a copy of an e-mail 430 to the server 405. For example, the e-mail management module 420 may transmit at least a portion of the e-mail 430 (in one embodiment the e-mail has a reduced resolution, e.g. a downcasted version of at least a portion of the e-mail, in some embodiments the email is not copyright restricted) to the server 410 along the communication path 440, which may include the link 445, the public switched telephone network 410, the link 450, the network 415, and the link 455.

[104] As discussed above, the data transfer rate along the communication path 440 may vary by many orders of magnitude. For example, if the processor-based device 401 is linked to the public switched telephone network (PSTN) 410 via a 14.4Kbps modem (not shown), it may not be desirable to transmit a 100MB attachment (not shown) to the server 405. Thus, the e-mail management module 420 may only transmit a portion of the e-mail 430 along the communication path 440. Alternatively, the e-mail 430 may be trickle uploaded to the server 405 along the communication path 440. In one embodiment, the user may assign a priority level to one or more portions of the e-mail 430, which may be used to select a portion of the e-mail 430 to transmit, as will be discussed in detail below.

[105] In one embodiment, after transmitting the portion of the e-mail 430 along the communication path 440, the e-mail management module 420 may queue and/or store the e-mail 430 until a faster connection becomes available. For example, a user may later connect the processor-based device 401 to the network 415 via a higher-speed connection, such as an Ethernet, and then the e-mail management module 420 may transmit the e-mail 430, or an additional portion thereof, using the higher speed connection. Alternatively, the user may later connect to the network 415 using a different processor-based device 401 (*e.g.,* switch from a PDA to a laptop computer), where the processor-based device 401 employed by the user may, for example, support a higher-speed connection. In one embodiment, the e-mail management module 420 may periodically provide reminders, such as a pop-up dialog box, asking the user to

connect to a high-speed connection and/or asking if the user would like to upload the e-mail 430.

[106] In one embodiment, the e-mail management module 420 may periodically provide reminders, such as a pop-up dialog box, asking the user to connect to a high-speed connection and/or asking if the user would like to upload the e-mail 430.

[107] As will be described in detail below, the e-mail management module 420 may also provide a notification indicating that a portion of the e-mail 430 has not been delivered to the intended recipient, *i.e.* the server 405, in accordance with one embodiment(s) of the present invention. For example, the e-mail management module 420 may determine that the current time is approaching the associated time 245, *i.e.* the time of the scheduled teleconference. Depending on how close the current time is to the associated time 245, the e-mail management module 420 may provide notifications more frequently and with higher urgency. In one embodiment, the e-mail management module 420 may provide a late notice if the current time exceeds the associated time 245.

[108] In response to the notification, the undelivered e-mail 430 may be uploaded to the server 405. In one embodiment, the notification may include giving a user an option to upload the e-mail 430 and the user may request that the e-mail 430 be uploaded in response to the notification. In one embodiment, the e-mail management module 420 may upload substantially all of the e-mail 430 to the server 405. However, in alternative embodiments, the e-mail management module 420 may "trickle upload" the e-mail 430, *i.e.* successively upload portions of the e-mail 430 in the background during one or more sessions, to the server 405. In one embodiment, the e-mail management module 420 may notify the user to indicate what choices are available, *e.g.* uploading substantially all of the e-mail 430 or trickle uploading the e-mail 430, and/or what actions have taken place.

[109] In one embodiment, after transmitting a portion of the e-mail 430 along the communication path 440 (that portion may be copyright unrestricted), the e-mail management module 420 may queue and/or store the e-mail 430 until the e-mail management module 420 receives an indication that the intended recipient has acquired the appropriate digital rights. For example, the intended recipient may purchase or enact a license from a third-party vendor and then provide an indication of the newly acquired license to the e-mail management module 420, which may then provide the queued and/or stored e-mail containing protected content. Alternatively, the intended recipient may be an automated e-mail distributor, which may acquire

digital distribution rights. Moreover, in alternative embodiments, a user with the appropriate authorization may modify the digital rights associated with the e-mail 430.

[110] In one embodiment, after transmitting the portion of the e-mail 430 (in this case having a reduced resolution) along the communication path 440, the e-mail management module 420 may queue and/or store the e-mail 430 until a faster connection becomes available. For example, a user may later connect the processor-based device 401 to the network 415 via a higher-speed connection, such as an Ethernet, and then the e-mail management module 420 may transmit the e-mail 430, or an additional portion thereof, using the higher speed connection. In one embodiment, the e-mail management module 420 may periodically provide reminders, such as a pop-up dialog box, asking the user to connect to a high-speed connection and/or asking if the user would like to upload the e-mail 430.

[111] Figure 5A illustrates one embodiment of the method of 500 for providing a portion of an electronic mail message based upon a data transfer rate, a size of the electronic mail message, and a threshold time. Figures 5B and 5C illustrates other embodiments.

[112] In the embodiments of figure 5A and 5C, a value indicative of, or associated with, a data transfer rate is determined (at 510, 710). For example, an e-mail management module, such as the e-mail management modules 125, 420 and/or the e-mail modules 160(1-2), may determine (at 510, 710) an average data transfer rate using one or more data packets received within a time period. Alternatively, the e-mail management module may determine (at 510, 710) a data transfer rate using a device profile. For example, the e-mail management module may determine (at 510, 710) that a 14.4KB modem is being used to transmit data and, thus, the e-mail management module may determine (at 510, 710) that the data transfer rate may not exceed approximately 14.4Kbps. Persons of ordinary skill in the art should appreciate that the aforementioned techniques for determining (at 510, 710) the data transfer rate are exemplary and not intended to limit the present invention.

[113] Figure 5B illustrates an embodiment for providing a portion of an electronic mail message having a reduced resolution based upon a data transfer rate, a size of the electronic mail message, and a threshold time. In the illustrated embodiment, a value indicative of, or associated with, a data transfer rate is determined (at 610). For example, an e-mail management module, such as the e-mail management modules 125, 420 and/or the e-mail modules 160(1-2), may determine (at 610) an average data transfer rate using one or more data packets received within a time period. Alternatively, the e-mail management module may determine (at 610) a data transfer rate

using a device profile. For example, the e-mail management module may determine (at 610) that a 14.4KB modem is being used to transmit data and, thus, the e-mail management module may determine (at 610) that the data transfer rate may not exceed approximately 14.4KB. Persons of ordinary skill in the art should appreciate that the aforementioned techniques for determining (at 610) the data transfer rate are exemplary and not intended to limit the present invention.

[114] Referring now to figures 5A-C, a value indicative of, or associated with, a size of an electronic mail message is also determined (at 520, 620, 720). The e-mail management module may determine (at 520, 620, 720) the size of the electronic mail message by determining (at 520, 620, 720) the number of bits in the electronic mail message. Alternatively, the size of the electronic mail message may be determined (at 520, 620, 720) using information that may be transmitted with the electronic mail message. In one alternative embodiment (relevant to figure 5B), the e-mail management module may determine (at 620) the value indicative of the size of the electronic mail message by determining (at 620) the number of bits in at least one file attached to the electronic mail message.

[115] Referring to the flow of figure 5A, a format of at least one file associated with an electronic mail message is determined (at 530). In one embodiment, the e-mail management modules 125, 420 and/or the e-mail modules 160(1-2), may determine (at 530) the format of at least one file associated with the electronic mail message. For example, an attachment to the electronic mail message may be a file having a file name extension of "doc", indicating that the file was created by Microsoft Word,® which may be read by other document creation or publication tools. For another example, an attachment to the electronic mail message may have a file name extension of "pdf, indicating that the file is a PDF file created by Acrobat Distiller®. Alternatively, the e-mail management modules 125, 420 and/or the e-mail modules 160(1-2), may determine (at 530) the format of at least one file associated with the electronic mail message by parsing at least a portion of the file in a manner known to those of ordinary skill in the art.

[116] In another example (figure 5B), the e-mail management modules 125, 420 and/or the e-mail modules 160(1-2), may determine (at 630) that the format of at least one file is MPEG, JPEG, GIF, PNG, Video for Windows®, Apple Quicktime®, AVI, and the like. In various alternative embodiments, the e-mail management modules 125, 420 and/or the e-mail modules 160(1-2), may determine (at 630) the file format using a file-type-specific plug-in, transcoder, splitter, and the like. In one embodiment, the e-

mail management modules 125, 420 and/or the e-mail modules 160(1-2), may determine (at 630) the format of the at least one file using a file name extension.

[117] Referring to figures 5A, B, C, a mail transfer criteria is also determined (at 540, 640, 740). In the previously discussed embodiments of the present invention, the mail transfer criteria has been associated with a mail transfer threshold time, such as a user's preferred maximum transfer time or a default threshold time. In these embodiments, the mail transfer criteria is determined (at 540, 640, 740) by determining the threshold time using an indication of the user's preferred maximum transfer time, such as a user profile, or an indication of the default threshold time. However, the potential mail transfer criteria are not limited to the threshold time. In alternative embodiments, the mail transfer criteria may include various user preferences such as a maximum size of an attachment, a minimum average data transfer rate, a time of day, a priority level and the like.

[118] The embodiments of figures 5A, 5B, 5C will be returned to after a digital rights management embodiment has been discussed up to the point when a transfer criteria step has been discussed for that embodiment.

[119] Figure 6 illustrates one embodiment of a method 800 for providing a portion of an electronic mail message based upon digital rights management rules. An e-mail management module, such as the e-mail management modules 125, 420 and/or the e-mail modules 160(1-2), determines (at 830) that a user is authorized to receive less than all of the electronic mail message. As discussed in detail above, the e-mail management module 125 or 420 may determine (at 830) the user authorization based on a variety of digital rights management rules including, but not limited to, rules governing copyright, distribution, broadcast, reproduction, publication, licensing, and fair use. For example, the e-mail management module 125 or 420 may determine (at 830) that, based on the digital rights management rules, the user is not authorized to receive one or more attachments, such as the attachments 240(1-3).

[120] In the embodiment, illustrated in Figure 6, a user may provide a user profile 1200 indicating the digital rights associated with the user (see figure 10A). For example, the user profile 1200 may include an acquired license list 1205. The acquired license list 1205 may include names of the files that are licensed to the user, as well as any other information indicative of the digital rights of the user. For example, the acquired license list may also include a number of times the files may be reproduced and/or distributed, in what media the files may be reproduced and/or distributed, the resolution allowed in versions distributed to non-licensees, whether the user is

authorized to modify the digital rights management rules that apply to the file, and the like. In one embodiment, some or all of the information stored in the user profile 1200 may be manually provided by the user when the user connects to access the stored e-mails, or, alternatively, the information, if pre-stored, may be made available to a device (*e.g.* the server 110) desiring access to the stored information.

[121] Some or all of the information stored in the user profile 1200 may be modified. For example, new licenses may be added to the acquired license list 1205 as the new licenses are acquired. Depending on the implementation, the user profile 1200 may be pre-stored at any desirable location, including the processor-based devices 105(1-2), 301, the servers 110, 405, and the like. For illustrative purposes, it is assumed that the user profile 1200 is stored in a convenient location, and, if desired, can be accessed by the appropriate device and/or module, including the e-mail modules 160(1-2), 420, the e-mail management module 125, and the like.

[122] The e-mail management module 125 or 420 selects (at 820) a portion of the electronic mail message such that the user is authorized to receive the selected portion. In one embodiment, the e-mail management module 125 or 420 may select (at 820) the portion of the electronic mail message by accessing (at 805) one or more protected attachments to the electronic mail message. For example, the e-mail management module 125 or 420 may access (at 805) the protected audio attachment 240(3). The e-mail management module 125 or 420 may then determine (at 810) one or more restrictions imposed on the protected attachments. For example, the e-mail management module may determine (at 810) that no more than 30 seconds of the protected audio attachment 240(3) may be provided to an unauthorized user. The e-mail management module 125 or 420 may then select (at 830) the portion of the protected attachment based upon the determined restrictions. For example, the e-mail management module 125 or 420 may select a 30-second-long clip of the protected audio attachment 240(3). In alternative embodiments, the e-mail management module 125 or 420 may select (at 820) other portions of the protected attachment based upon the determined restrictions including, but not limited to, lower resolution versions of the attachment, lossy versions of the attachment, and versions that may be viewed and/or distributed by e-mail but not printed, copied, or forwarded.

[123] As discussed above, the e-mail management module 125 or 420 may also select (at 840) a portion of the electronic mail message based upon other criteria such as a data transfer rate, a size of the e-mail 200, and the like. Figure 15 illustrates one embodiment of the method of 1700 for selecting (at 840) a portion of the electronic

mail message based upon a data transfer rate, a size of the electronic mail message, and a threshold time. In the illustrated embodiment, a value indicative of, or associated with, a data transfer rate is determined (at 1710). For example, an e-mail management module, such as the e-mail management modules 125, 420 and/or the e-mail modules 160(1-2), may determine (at 1710) an average data transfer rate using one or more data packets received within a time period. Alternatively, the e-mail management module 125 or 420 may determine (at 1710) a data transfer rate using a device profile. For example, the e-mail management module 125 or 420 may determine (at 1710) that a 14.4KB modem is being used to transmit data and, thus, the e-mail management module 125 or 420 may determine (at 1710) that the data transfer rate may not exceed approximately 14.4KB. Persons of ordinary skill in the art should appreciate that the aforementioned techniques for determining (at 1710) the data transfer rate are exemplary and not intended to limit the present invention.

[124] A value indicative of, or associated with, a size of an electronic mail message is also determined (at 1720). In one embodiment, the e-mail management module 125 or 420 may determine (at 1720) the size of the electronic mail message by determining (at 1720) the number of bits in the electronic mail message. Alternatively, the size of the electronic mail message may be determined (at 1720) using information that may be transmitted with the electronic mail message.

[125] A mail transfer criteria is also determined (at 1730). In the previously discussed embodiments of the present invention, the mail transfer criteria has been associated with a mail transfer threshold time, such as a user's preferred maximum transfer time or a default threshold time. In these embodiments, the mail transfer criteria is determined (at 1730) by determining the threshold time using an indication of the user's preferred maximum transfer time, such as a user profile, or an indication of the default threshold time. However, the potential mail transfer criteria are not limited to the threshold time. In alternative embodiments, the mail transfer criteria may include various user preferences such as a maximum size of an attachment, a minimum average data transfer rate, a time of day, and the like.

[126] Referring now to figures 5A, 5B, 5C, 6,, a user may provide a user profile 900, 1000, 1100, 1200, 1300 indicating the user preferences that may be used to determine the mail transfer criteria (see Figures 7A, 8A,9A, 10A and 11A). For example, the user may indicate, via the user profile, that e-mails that can be downloaded within a preselected time (*e.g.*, in 10 minutes or less) should be downloaded. Alternatively, the user profile may indicate that e-mails smaller than a preselected size (*e.g.*, about

250KB or less) should be downloaded and/or that e-mails that can be downloaded at an average rate of greater than a preselected threshold (*e.g.*, about 300Kbps) should be downloaded. (In some embodiments – eg figure 9A, the user may be prompted before the e-mail is uploaded and/or downloaded.) The user profile may also indicate that e-mails having a high priority level should be downloaded (e.g. figs 7A, 8A). The profile may indicate that the user would like to be prompted before uploading and/or downloading portions of the e-mail (figs 7A, 8A, 9A). In one embodiment, some or all of the information stored in the user profile may be manually provided by the user when the user connects to access the stored e-mails, or, alternatively, the information, if pre-stored, may be made available to a device (*e.g.*, the server 110) desiring access to the stored information. Depending on the implementation, the user profile 600 may be pre-stored at any desirable location, including the processor-based devices 105(1-2), 401, the servers 110, 405, and the like.

[127] In some embodiments (figs 7A, 8A, 9A 10A, 11A), the user profile may indicate that e-mails smaller than a preselected size (*e.g.*, about 250KB or less) should be downloaded, that e-mails that can be downloaded at an average rate of greater than a preselected threshold (*e.g.*, about 300Kbps) should be downloaded, and/or that the user should be prompted before the e-mail is uploaded and/or downloaded. In one embodiment, some or all of the information stored in the user profile may be manually provided by the user when the user connects to access the stored e-mails, or, alternatively, the information, if pre-stored, may be made available to a device (*e.g.*, the server 110) desiring access to the stored information. Depending on the implementation, the user profile may be pre-stored at any desirable location, including the processor-based devices 105(1-2), 401, the servers 110, 405, and the like.

[128] Persons of ordinary skill in the art should appreciate that any other desirable criteria, such as a priority level and the like, may be provided in the user profile and may be used to determine (at 630) the mail transfer criteria.

[129] For illustrative purposes, it is assumed that the user profile is stored in a convenient location, and, if desired, can be accessed by the appropriate device and/or module, including the e-mail modules 160(1-2), 420, the e-mail management module 125, and the like. In one embodiment, when the user is ready to process one or more of the received e-mails, a message indicative of the information included in the user profile may be sent to a server, such as the servers 110, 405, which may set flags based upon the user preferences. For example, the flags may indicate that the servers 110, 405 should queue (and in some embodiments, hold) e-mails that are to be sent and/or

received via a high speed connection, should not download attachments larger that the Maximum Download Size indicated in the user profile should prompt before uploading and/or downloading attachments, and the like.

[130] In one embodiment, when the user is ready to process one or more of the received e-mails, a message indicative of the information included in the user profile may be sent to a server, such as the servers 110, 405, which may set flags based upon the user preferences. For example, the flags may indicate that the server 110, 305 should queue and hold e-mails that are to be sent and/or received via a high speed connection, should not download attachments larger that the Maximum Download Size indicated in the user profile should prompt before uploading and/or downloading attachments, should download only files with the necessary licenses, and the like.

[131] In some embodiments, flags may also be set on the processor-based-devices 105(1-2), 401 and other devices (not shown) such as third-party proxy servers, *e.g.* mail servers, and the like. However, persons of ordinary skill in the art should appreciate that the other devices, such as proxy servers, may have additional rules for handling e-mails. For example, a mail server may operate according to a rule that limits the size and/or number of copies of an e-mail that may be sent. The device rules may, in some instances, override the preferences and/or flags that may be determined according to some embodiments of the present invention. For example, the mail server may decline to send copies of a 50MB e-mail to 100 users, regardless of the preferences that may be indicated by the user profile 600 and/or the flags that may be set on the processor-based-devices 105(1-2), 401 and other devices.

[132] Referring back to figures 5A and 5C, having determined a mail transfer criteria, a portion of the electronic mail message is then selected (at 550, 740) based upon the determined data transfer rate, the determined size of the electronic message, (and in some embodiments the file format), and the mail transfer criteria. In one embodiment, the determined data transfer rate and the determined size of the electronic mail message may be used to estimate the total transfer time for the electronic message. The estimated transfer time may then be compared to the threshold time and, if the estimated transfer time does not exceed the threshold time, substantially all of the electronic mail message may be selected (at 550, 740). However, if the estimated transfer time substantially exceeds the threshold time, a portion of the electronic mail message may be selected, as described in detail above. In one embodiment, the e-mail management module may also provide the user with an option to select (at 550, 740) the portion of the electronic mail message.

[133] In the embodiment of figure 5C, a portion of the e-mail is selected (at 740) based upon the determined data transfer rate, the determined size of the e-mail, and the mail transfer criteria. For example, the server and/or one or more clients may use the afore-mentioned flags to automatically select (at 740) the portion of the e-mail. In one embodiment, the determined data transfer rate and the determined size of the e-mail may be used to estimate the total transfer time for the e-mail. The estimated transfer time may then be compared to the threshold time and, if the estimated transfer time does not exceed the threshold time, substantially all of the e-mail may be selected (at 740). However, if the estimated transfer time substantially exceeds the threshold time, a portion of the e-mail may be selected (at 740). In one embodiment, the e-mail management module may also provide the user with an option to select (at 740) the portion of the e-mail.

[134] In the embodiment of figure 5B, a portion of the electronic mail message is selected (at 650) based upon the determined data transfer rate, the determined size of the electronic message, the file format, and the mail transfer criteria. The determined data transfer rate and the determined size of the electronic mail message may be used to estimate the total transfer time for the electronic message. The estimated transfer time may then be compared to the threshold time and, if the estimated transfer time does not exceed the threshold time, substantially all of the electronic mail message may be selected (at 650).

[135] However, if the estimated transfer time substantially exceeds the threshold time, and it is desirable to transmit only a portion of the electronic mail message, a portion of the electronic mail message having a reduced resolution may be selected (at 650) as described in detail above. In one embodiment, the e-mail management module may also provide the user with an option to select (at 650) the portion of the electronic mail message having a reduced resolution dynamically. For example, the user may select (at 650) the portion of the electronic mail message having the reduced resolution by highlighting a desired portion of the electronic mail message. Alternatively, the user may select (at 650) the portion of the electronic mail message having the reduced resolution by specifying a time interval of an audio clip. In another alternative embodiment, the user may select (at 650) the portion of the electronic mail message having the reduced resolution by specifying a time interval and/or a number of frames of a graphics clip.

[136] In some embodiments, illustrated in Figures 7B, 8B, 9B, 10B, 11B, a dialog box 905, 1005, 1105, 1246, 1305 may be displayed to the user. (In one embodiment (Figs

5B, 8B), the user may select (at 650) the portion of the electronic mail message having the reduced resolution.) However, persons of ordinary skill in the art will appreciate that the present invention is not limited to the dialog box. In alternative embodiments, any desirable type of user interface, including a graphical user interface or display, may be displayed to the user in order to provide information to, and/or receive information from, the user. The dialog box may display a list of the e-mails and information associated with the e-mails. For example, as shown in the figures, one entry (indicated by the phrase "test message" in subject field 910, 1010, 1110, 1210, 1310) has a size field 915, 1015, 1115, 1215, 1315 that indicates that the size of the e-mail is approximately 3.001MB and a download time field 920, 1020, 1120, 1220, 1320 that indicates that the entire e-mail may take approximately one hour to download at the current connection speed. Various portions and/or attachments may also be displayed in the dialog box.. For example, the size field indicates that the size of the header is approximately 1KB and the download time field indicates that the header may take approximately 5 seconds to download at the current connection speed. For another example, the size field indicates that the size of the text_attachment (the image_attachment etc – see fig 8B) is approximately 1.0MB and the download time field indicates that the text_attachment (image_attachment) may take approximately 20 minutes to download at the current connection speed.

[137] The e-mails, portions thereof, and/or attachments displayed in the dialog box may be determined in a variety of ways. In one embodiment, a user may determine the e-mails, portions, and/or attachments displayed in the dialog box. For example, a user may create an e-mail including one or more tags that indicate which e-mail portions and/or attachments should be displayed in the dialog box. For another example, a user may highlight a portion of the e-mail by clicking-and-dragging over the desired portion of the e-mail using a controllable pointer element, *e.g.* a mouse, a joystick, and the like. The user may then indicate that the highlighted portion should be displayed in the dialog box by, for example, selecting an option from a drop-down menu using the controllable pointer element. The e-mail management module may then determine displayable information associated with the e-mails including, but not limited to, the size and estimated download time of the e-mail portions and/or attachments. However, persons of ordinary skill in the art should appreciate that the present invention is not limited to embodiments wherein the user determines the portions and/or attachments displayed in the dialog box. In alternative embodiments, the e-mail management module may determine the portions and/or attachments displayed in the dialog box.

For example, the e-mail management module may determine the portions and/or attachments displayed in the dialog box using information such as the user profile, the device profile, the file size, the connection speed, the estimated download time, and the like.

[138] In various embodiments (figs 5A-C), the e-mail management module may select (at 550, 650, 740) portions of the e-mails to be downloaded. For example, based upon the user profile, the e-mail management module may select the "header" of the "test message," the "other message," and the "header" of the "another message," as indicated by the X-marks in selection field 930, 1030, 1130, 1230, 1330. Alternatively, the user may select portions of the e-mail to be downloaded. For example, the user may control a pointer element on the graphical user display with a pointer controller having position and selection status responsive to operation by the user, such as a mouse, a joystick, and the like, to select the text_attachment (or in one embodiment the image_attachment and the sound attachment). For example, the user may use a mouse to click the box in the selection field, thereby selecting the text_attachment (or in the other embodiment image attachment and sound_attachment – fig 8B), as indicated by the check-mark in the selection field. However, in one embodiment (fig 10B) if the user selects a protected attachment, the e-mail management module may override the user selection, or opt to provide only a reduced resolution version, as discussed above.

[139] In accordance with the embodiment of figure 5C, the selected portion of the e-mail is then provided (at 750) to, for example, a processor-based device and/or a server. In one embodiment, the e-mail management module 125 automatically provides (at 750) the selected portion of the e-mail. In one alternative embodiment, the e-mail management module 125 may provide the user with an option to instruct the e-mail management module 125 to provide (at 750) the selected portion of the e-mail. For example, the user may dynamically instruct the e-mail management module 125 to provide (at 750) portions of the e-mail using, e.g., a download button (e.g. 935) that may be provided. In various embodiments, the user may click on the download button to provide (at 750) a new download or resume a previously paused download. For example, the user may elect to instruct the e-mail management module 125 to provide (at 750) a portion of a large e-mail after smaller e-mails have been provided (at 750). In this embodiment, the portion of the e-mail is provided (750) in response to the user opting to provide (at 750) the portion. In one alternative embodiment, the download button may be provided within the e-mail.

[140] In one embodiment, the e-mail management module may provide the user with an

option to provide (at 750) the selected portion of the electronic mail message. For example, a dialog box may be displayed to the user and the user may opt to provide (at 750) the selected portion or the user may opt not to provide (at 750) the selected portion. In this embodiment, the selected portion of the electronic mail message is provided (750) in response to the user opting to provide (at 450) the selected portion.

[141] In the digital rights embodiment of figure 6, the selected portion of the electronic mail message is provided (at 850) to, for example, a processor-based device and/or a server, as discussed in detail above. In one embodiment, the electronic mail message is queued and/or stored, *e.g.* on a client or on a server, after the selected portion of the electronic mail message is provided (at 850). In one embodiment, a user may create the electronic mail message on a processor-based device and the electronic mail message may remain queued and/or stored on the processor-based device. Alternatively, the electronic mail message may remain queued and/or stored on a server. As discussed above, one or more notifications, such a pop-up dialog box and the like, may be provided to the user indicating that the electronic mail message is queued and/or stored.

[142] The electronic mail message may remain queued until the e-mail management module 125 or 420 determines (at 860) that the intended recipient of the electronic mail message has acquired the appropriate digital rights. In one embodiment, the user may initiate the process of acquiring the appropriate digital rights by selecting a closed-lock icon associated with the protected file, such as the closed-lock icons shown in the DRM field 1206 of figure 10B's dialog box. The user may select the closed-lock icon using, for example, a mouse, a joystick, and the like. In response to the user clicking on the closed-lock icon, an acquisition dialog box 2100, such as the exemplary embodiment shown in Figure 21, may be displayed to the user. The acquisition dialog box 2100 may include an action button 2110 that may direct the intended recipient to a web site where the intended recipient may acquire the appropriate digital rights for the associated attachment by, *e.g.* purchasing a license, an action button 2120 that may provide a downcast version of the attachment, an action button 2130 that may allow the user to exit the acquisition process, and the like.

[143] In one alternative embodiment, the user may modify one or more digital rights management rules associated with the portion of the electronic mail message. For example, the user could addend digital rights management rules to a file that did not previously have an associated digital rights management rule. In one embodiment, the user may modify one or more digital rights management rules by selecting an icon

associated with the portion of the electronic mail message, such as the closed-lock or open-lock icons shown in the DRM field 1206 in Figure 10B. The user may select the appropriate icon using, for example, a mouse, a joystick, and the like. In response to the user clicking on the icon, a dialog box 2140, such as the exemplary embodiment shown in Figure 21, may be displayed to the user. The dialog box 2140 may include an action button 2150 that may allow an appropriately authorized user to modify the digital rights management rules for the associated attachment and an action button 2160 that may allow the user to exit the process, and the like.

[144] Returning to figure 6, when the e-mail management module 125 or 420 determines (at 860) that the intended recipient of the electronic mail message has acquired the appropriate digital rights, the e-mail management module 125 or 420 may provide (at 870) the electronic mail message. If the e-mail management module 125 or 420 determines (at 860) that the intended recipient has not acquired the appropriate digital rights, the e-mail management module 125 or 420 may wait to provide (at 870) the electronic mail message until it determines that the intended recipient has acquired the appropriate digital rights. In one embodiment, the e-mail management module 125 or 420 may also provide (at 870) the electronic mail message based upon other mail transfer criteria such as the aforementioned data transfer rate, size of the electronic message, estimated transfer time, threshold time, and the like.

[145] The dialog box may also include a detail field 950, 1050 (see figures 5A,7A; 5B, 8B). In one embodiment, the user may opt to view additional information about the attachment (or in one embodiment, one or more attachments). For example, the user may control a pointer element on the graphical user display with a pointer controller having position and selection status responsive to operation by the user, such as a mouse, a joystick, and the like, to select the magnifying glass icon shown in the detail field. The e-mail management module may use the determined (at 530, 630) file format to display a detailed information box 1400, 1500 that may include information regarding the attachment, as shown in Figures 12 and 13.

[146] An information box may include file summary information 1405, 1505 which may include such information as the filename ("text_attachment" – fig 12) or ("image_attachment – fig 13), the file type ("Portable Document Format" – fig 12) or ("Graphics Image Format – fig 13), and any other desirable information.

[147] In one embodiment (fig 12), the detailed information box also includes information indicative of the content of the attachment. In one illustrated embodiment, this information includes a list of the contents of the attachment, as indicated in content field

1410. For example, the text_attachment may include a Summary, a Table of Contents (TOC), Chapters 1-3, and Charts 1-2. The author of the file may designate which portions of the attachment correspond to the content field 1410 of the attachment, *e.g.* the Summary, the Table of Contents (TOC), the Chapters 1-3, and the Charts 1-2, using delimiters such as tags, control characters, and the like, which may be understood by the e-mail management module. However, the present invention is not limited to author-inserted delimiters. In alternative embodiments, the content field 1410 of the attachment may be determined in any desirable manner, including parsing by the e-mail management module, and the like.

[148] It should be appreciated that irrespective of the file depicted (image file, text file etc), persons of ordinary skill in the art should appreciate that the present invention is not limited to image files/text files etc. In alternative embodiments, any desirable type of attachment may be used, including, but not limited to, the various file types discussed above.

[149] The detailed information box may also include information indicative of a corresponding size field 1415, 1515 of each portion of the attachment, a page count field 1420, 1520 of each portion, and the like. In one embodiment, the size field 1415, the page count field 1420, and any other desirable information may be determined by the e-mail management module. In alternative embodiments, the detailed information box 1400 may also include information not shown in Figure 12, such as an estimated download time of each portion of the attachment, an estimated transfer speed, and the like.

[150] In one embodiment (fig 13), the detailed information box may include information indicative of the content of the attachment. In the illustrated embodiment, this information includes a version field 1510 of the attachment. For example, a full-size, full-resolution version of the image_attachment may be available for download, as well as various downcast versions, including a full-size, reduced resolution version, a reduced-size, reduced-resolution (or "thumbnail") version, a reduced-size, full-resolution version, and the like. Alternatively, the color resolution of portions of the attachments may be reduced by the downcast process. For example, the color resolution of an image containing 65K colors may be reduced to a grey-scale image.

[151] In one embodiment (fig13), the author of the file may designate portions of the image_attachment to be downcast, as well as the downcasting process, using delimiters such as tags, control characters, and the like, which may be understood by the e-mail management module. For example, the author may select a section of the

image_attachment, such as Section 1 shown in Figure 13. However, the present invention is not limited to user-defined downcasting. In alternative embodiments, the version field of the attachment may be determined in any desirable manner, including parsing by the e-mail management module, and the like.

[152] The detailed information box of fig 13 may also include information indicative of a size of the version in a corresponding size field 1515, include information indicative of an estimated download time of the version in a corresponding a time field 1520 of each portion, and the like. In one embodiment, the size field 1515, the time field 1520, and any other desirable information may be determined by the e-mail management module. In alternative embodiments, the detailed information box 1500 may also include information not shown in Figure 13, such as an estimated transfer speed and the like.

[153] A priority level field 1425, 1525 may also be associated with one or more portions of the attachment. In one embodiment, the priority level field may indicate at least one of a high priority 1430, 1530 (indicated by an "!"), a low priority 1435, 1535 (indicated by a downward-pointing arrow), and an average priority (indicated by a blank field 1437, 1537). However, persons of ordinary skill in the art should appreciate that any desirable number of priority levels may be indicated in the priority level field 725, and the priority levels may be indicated in any desirable manner including other symbols or characters, colors, attention-getting techniques such as flashing and/or beeping, and the like. The user may designate the priority level that is associated with each portion (version) of the attachment, *e.g.* the Summary, the Table of Contents (TOC), the Chapters 1-3, and the Charts 1-2, using delimiters such as tags, control characters, and the like, which may be understood by the e-mail management module. Alternatively, the user may designate the priority level using a pointer controller having position and selection status responsive to operation by the user, such as a mouse, a joystick, and the like, to select a priority level interactively using the detailed information box . However, the present invention is not limited to user-defined priority levels. In alternative embodiments, the priority level associated with the portions of the attachment may be determined in any desirable manner. For example, the e-mail management module may assign a default priority level to each portion of the attachment. The designated and/or assigned priority level may then be indicated in the priority level field.

[154] Referring to figures 5A and 12, one or more portions of the attachment corresponding to the contents 1410 of the attachment, *e.g.* the Summary, the Table of Contents (TOC), the Chapters 1-3, and the Charts 1-2, may then be selected (at 550).

In one embodiment, the one or more portions of the attachment may be selected (at 550) based upon indicators in one or more of the size fields 1415, the page count fields 1420, and the priority level fields 1425. For example, the Summary and Chart 1 may be selected (at 550), as indicated by the checkmark in the selection field 740. In various alternative embodiments, the one or more portions of the attachment may be selected (at 550) by the user, the author, the e-mail management module, or in any other desirable manner. Moreover, the one or more portions of the attachment may be selected (at 550) in advance, *e.g.* using the user profile 900 (fig 7A), or dynamically, *e.g.* by the user at the time that the dialog information box 905 is displayed. In alternative embodiments, the one or more portions of the attachment may also be selected (at 550) sequentially. For example, the user may select (at 550) the Summary and select (at 550) Chapter 1 after viewing the Summary.

[155] In one embodiment (fig 5B), one or more portions and/or versions of the attachment may then be selected (at 650). In one embodiment, the one or more portions and/or versions of the attachment may be selected (at 650) based upon indicators in one or more of the size fields 1015, the time fields 1020, and the priority level fields 1025. For example, Section 1 may be selected (at 650), at least in part because of the high priority associated with Section 1, as indicated by the checkmark in the selection field 1540. In various alternative embodiments, the one or more portions and/or versions of the attachment may be selected (at 650) by the user, the author, the e-mail management module, or in any other desirable manner. Moreover, the one or more portions and/or versions of the attachment may be selected (at 650) in advance, *e.g.* using the user profile 1000, or dynamically, *e.g.* by the user at the time that the dialog information box is displayed. In alternative embodiments, the one or more portions and/or versions of the attachment may also be selected (at 650) sequentially. For example, the user may select (at 650) the thumbnail and select (at 650) Section 1 after viewing the thumbnail.

[156] In various embodiments (figs 5A-C), the selected portion of the electronic mail message is provided (at 560, 660, 750) to, for example, a processor-based device and/or a server, as discussed in detail above. In one embodiment (see fig 5A), the e-mail management module may also provide the user with an option to provide (at 560) the selected portion of the electronic mail message. For example, a dialog box may be displayed to the user and the user may opt to provide (at 560) the selected portion or the user may opt not to provide (at 560) the selected portion. In this embodiment, the selected portion of the electronic mail message is provided (560) in response to the

user opting to provide (at 560) the selected portion. In one embodiment, the user may also select a minimum resolution, a section of an image, providing alternative text, and other similar actions.

[157] In one embodiment (see fig 5C), the e-mail management module 125 automatically provides (at 750) the selected portion of the e-mail. In one alternative embodiment, the e-mail management module 125 may provide the user with an option to instruct the e-mail management module 125 to provide (at 750) the selected portion of the e-mail. For example, the user may dynamically instruct the e-mail management module 125 to provide (at 750) portions of the e-mail using, e.g., a download button 1335 that may be provided, as shown in Figure 11B. In various embodiments, the user may click on the download button 1335 to provide (at 750) a new download or resume a previously paused download. For example, the user may elect to instruct the e-mail management module 125 to provide (at 750) a portion of a large e-mail after smaller e-mails have been provided (at 750). In this embodiment, the portion of the e-mail is provided (750) in response to the user opting to provide (at 750) the portion. In one alternative embodiment, the download button 1335 may be provided within the e-mail.

[158] In some embodiments, the electronic mail message is queued and/or stored, *e.g.* on a client or on a server, after the selected portion of the electronic mail message is provided (eg at 560). The electronic mail message may remain queued until it becomes desirable to provide the complete electronic mail message. Alternatively, the user may request an additional selected portion of the electronic mail message. In one embodiment, a user may create the electronic mail message on a processor-based device and the selected portion of the electronic mail message may be provided (eg at 560) to a server and/or another processor-based device. The electronic mail message may remain queued and/or stored on the processor-based device until it becomes desirable to provide the complete electronic mail message, or an additional portion thereof, to the server and/or other processor-based device. Alternatively, the electronic mail message may remain queued and/or stored on a server until it becomes desirable to provide the complete electronic mail message. As discussed above, one or more notifications may be provided to the user indicating that the electronic mail message is queued and/or stored.

[159] The electronic mail message may, in one embodiment, be queued and/or stored, *e.g.* on a client or on a server, after the selected portion of the electronic mail message having a reduced resolution is provided (at 660). The electronic mail message may remain queued until it becomes desirable to provide the complete electronic mail

message. Alternatively, the user may request an additional selected portion of the electronic mail message.

[160] In one alternative embodiment, a user may create the electronic mail message on a processor-based device and the selected portion of the electronic mail message having a reduced resolution may be provided (at 660) to a server and/or another processor-based device. For example, the user may select sections of the electronic mail message, or one or more attachments, which may be indicated with tags and the like. As will be appreciated by persons of ordinary skill in the art, tags are special characters that may be inserted in a data stream to indicate the beginning and/or end of portions of the data stream. In one embodiment, tags may be inserted into data content by a creator and/or user to indicate, for example, a preview of the data content, a summary of the data content, and the like. If it is desirable to provide less than the entire electronic mail message, a reduced resolution version of the user selected sections may then be provided (at 660).

[161] The reduced resolution electronic mail message may remain queued and/or stored on the processor-based device until it becomes desirable to provide the complete electronic mail message, or an additional portion thereof, to the server and/or other processor-based device. Alternatively, the electronic mail message may remain queued and/or stored on a server until it becomes desirable to provide the complete electronic mail message. As discussed above, one or more notifications may be provided to the user indicating that the electronic mail message is queued and/or stored.

[162] In some embodiments (figs 7B, 8B, 9B, 10B, 11B), a pause button 540 may be provided so that the user may select (*e.g.,* by clicking using a mouse or other controller) the pause button (eg 940) to stop a download that is in progress. In one alternative embodiment, the pause button may be provided within the e-mail. A progress field (eg 945), or similar user interface widget, may also be provided to indicate how much of the selected portions have been downloaded. For example, the progress field indicates that the header of the test message has been downloaded and approximately 50% of the text_attachment has been downloaded, *i.e.* approximately 16% of the e-mail has been downloaded.

[163] In one embodiment, the e-mail is queued and/or stored, *e.g.* on a client or on a server, after the selected portion of the e-mail is provided. The e-mail may remain queued until it becomes desirable to provide the complete e-mail. In one embodiment, a user may create the e-mail on a processor-based device and the selected portion of the e-mail may be provided to a server and/or another processor-based device. The e-

mail may remain queued and/or stored on the processor-based device until it becomes desirable to provide the complete e-mail to the server and/or other processor-based device. Alternatively, the e-mail may remain queued and/or stored on a server until it becomes desirable to provide the complete e-mail. As discussed above, one or more notifications may be provided to the user indicating that the e-mail is queued and/or stored.

[164] In some embodiments, the electronic mail message is queued and/or stored, *e.g.* on a client or on a server, after the selected portion of the electronic mail message is provided. The electronic mail message may remain queued until it becomes desirable to provide the complete electronic mail message. In one embodiment, a user may create the electronic mail message on a processor-based device and the selected portion of the electronic mail message may be provided to a server and/or another processor-based device. The electronic mail message may remain queued and/or stored on the processor-based device until it becomes desirable to provide the complete electronic mail message to the server and/or other processor-based device. Alternatively, the electronic mail message may remain queued and/or stored on a server until it becomes desirable to provide the complete electronic mail message. As discussed above, one or more notifications may be provided to the user indicating that the electronic mail message is queued and/or stored.

[165] One or more of the electronic mail messages, or portions thereof, may (in one embodiment) be associated with a time and/or a scheduled event. For example, a user may schedule a meeting and distribute materials to the meeting participants in an electronic mail message, which may include one or more attachments. A meeting notification may also be provided to the users who may participate in the meeting. However, as discussed above, not all of the electronic mail message and/or the attachments may be provided to the users. A user may want to transfer undelivered portions of the associated electronic mail messages, such as the portions that may be queued and/or stored on a server and/or other processor-based device, prior to the associated time and/or event. In some embodiments, the association of an electronic mail message with the scheduled time and/or event may be indicated by a calendar icon located in the event field 1150, shown in Figure 9B. Alternatively, the association of the electronic mail message with the scheduled time and/or event may be indicated by an envelope icon 1655 located in an associated e-mail field 1560 of a calendar entry 1665, as shown in Figure 14.

[166] In one embodiment (figs 9B, 14), the user may view the current status of portions of

the electronic mail message. For example the user may select (*e.g.* with a mouse, a joystick, and the like) the calendar icon in the event field 1150 associated with one or more portions of the electronic mail message or the envelope icon 1655. In response to the user selection, a dialog box 1800 may be displayed, as shown in Figure 16. In one embodiment, the dialog box 1800 may display information including the file name, the title of the attachment, a current time, a scheduled time and/or event, a scheduled download time, and the like. However, persons of ordinary skill in the art should appreciate that any desirable information may be displayed in the dialog box 1800. An edit button 1805 may also be provided in the dialog box 1800. In one embodiment, the user may select the edit button 1805 to be provided with an option to edit one or more of the entries in the dialog box 1800. For example, the user may choose to change the scheduled download time to a more desirable time. Persons of ordinary skill in the art should also appreciate that, in alternative embodiments, an e-mail management module, a server, and the like may schedule the download time. For example, the e-mail management module may automatically schedule a transfer time based upon such factors as default times, historical usage patterns, connection speeds, and the like. The e-mail management module may also prompt the user to connect on-demand.

[167] Although the user may be provided with the aforementioned tools to download portions of an electronic mail message prior to the time and/or event associated with the electronic mail message, the user may not always utilize these tools. Thus, a method 1900 for providing a notification of an undelivered portion of an electronic mail message based on a calendar entry may also be provided. One embodiment of the method 1900 is shown in Figure 19. In the illustrated embodiment, an e-mail management module, such as the e-mail management modules 125, 410 shown in Figures 1 and 4, determines (at 1910) whether or not a portion of an e-mail has been delivered to an intended recipient. For example, the e-mail management module may determine (at 1910) that less than all of an electronic mail message has been delivered to one or more users associated with one or more processor-based devices, one or more servers, and the like. In various alternative embodiments, the e-mail management module may determine (at 1910) that a portion of the electronic mail message has been delivered to the intended recipient by accessing a queue, a storage medium, a register, a flag associated with the electronic mail message, a marker associated with the electronic mail message, and the like. If the e-mail management module determines (at 1910) that all desirable portions of the electronic mail message have been delivered to the intended recipient, the method 1900 may end (at 1920).

[168] If the e-mail management module determines (at 1910) that at least one portion of the electronic mail message has not been delivered to the intended recipient, the e-mail management module determines (at 1930) a time and/or event associated with the electronic mail message. In one embodiment, the associated time and/or event may include a date and a time of day, a meeting, a telephone call, and the like, which may be determined (at 1930) by accessing a calendar or by accessing a portion of the electronic mail message. For example, the time field 245 (fig 2C) may be used to associate the electronic mail message with an entry in a calendar or schedule. The e-mail management module may then access the calendar or schedule entry associated with the electronic mail message to determine (at 1930) the associated time. For example, the associated time may be a date and a time of day of a scheduled meeting, appointment, and the like. A current time may also be determined (at 1940) by, for example, accessing a clock.

[169] The e-mail management module may then compare (at 1950) the associated time and the current time and provide (at 1960) one or more notifications if it is determined (at 1950) that the current time is earlier than the associated time. For example, as shown in Figure 17, the e-mail management module may provide a notification 1810, which may include information such as the file name, the attachment, how long until the scheduled time and/or event, and the like. In one embodiment, the notification 1810 may include one or more buttons 1820, 1830, 1840 that allow the user to initiate one or more actions. For example, the notification 800 may include a schedule download button 1820 that allows the user to schedule the download for a later time, a download now button 1830 that allows the user to initiate the download substantially immediately, a remind me button 1840 that requests another notification at a later time, and the like.

[170] In various alternative embodiments, as described above, the notification may be provided (at 1960) to the intended recipient, such as a user associated with a processor-based device or a server, or to a distributor of the electronic mail message, which may be a user associated with the processor-based device, an automated mail server, and the like. In one embodiment, along with the notification, the user may be provided with an option to receive and/or send electronic mail message immediately or at a scheduled time. If the e-mail management module determines (at 1950) that the current time is later than the associated time, a late notice may be provided (at 1970) and the method 1900 may end (at 1920).

[171] Once the notification has been provided (at 1960), the e-mail management module

may determine (at 1910) whether or not the e-mail has been provided to the intended recipient. For example, the e-mail management module may wait a predetermined time after the notification has been provided (at 1960) before determining (at 1910) whether or not the electronic mail message has been delivered to the intended recipient. In one embodiment, the frequency at which the associated time and the current time are compared (at 1950), as well as the urgency of the notifications, may increase as the difference between the associated time and the current time decreases. For example, the e-mail management module may provide an urgent notification 1850, as shown in Figure 18. In one embodiment, the urgent notification 1850 may include one or more buttons 1860 such as a download now button 1860 that allows the user to initiate the download substantially immediately. In one embodiment, the notifications 1810, 1850 may only be provided when the difference between the associated time and the current time is less than a preselected value. The preselected value, as well as the frequency and/or urgency of the notifications, may be specified by a user and/or a user profile.

[172] As mentioned above, in some alternative embodiments, the user may be provided with an option to receive and/or send electronic mail message at a scheduled time. Figure 20 illustrates one embodiment of a method 2000 of scheduling a time period for providing the electronic mail message to the intended recipient. In the illustrated embodiment, the user opts (at 2010) to receive and/or send the electronic mail message. An e-mail management module may determine (at 2020) the connectivity costs, such as the subscription cost of an Internet connection provided by an Internet Service Provider, the cost of a telephone call used for a dial-up connection, and the like, associated with transmitting the electronic mail message via one or more communication paths (*e.g.* the communication paths 130(1-2), 440) and during one or more time periods.

[173] The e-mail management module may also determine (at 2030) one or more price points based on the determined connectivity costs. For example, the e-mail management module may determine (at 2030) that it will cost $25.00 in connectivity costs to transmit the electronic mail message via a dial-up connection requiring a long-distance telephone call from a gas station on Monday afternoon, but be substantially free if the electronic mail message is transmitted from home later that evening via a cable modem. A time period for providing the electronic mail message may then be scheduled (at 2040) based upon the one or more price points, as well as any other desirable criteria, such as bandwidth availability, user availability, historical access information, and the like. In alternative embodiments, the transfer time may be

scheduled (at 2040) based upon based upon an estimated transfer time and a difference between the time associated with the electronic mail message and the current time. For example, if only 10 minutes remain between the current time and the time of a scheduled event associated with the electronic mail message, and the estimated transfer time is about 10 minutes, the time period for providing the electronic mail message may then be scheduled (at 2040) substantially immediately.

[174] Figure 22 shows a stylized block diagram of a processor-based device 2200, in accordance with one embodiment of the present invention. In one embodiment, the processor-based device 2200 may represent portions of the processor-based devices 105(1-2), 401 and/or the servers 110, 405. The device 2200, depending on the particular implementation, is configured with the appropriate software configuration, including the e-mail management module 125 or the e-mail modules 160(1-2) of Figures 1A to C, or with the e-mail management module 420 in the system 400 of Figure 4A,B.

[175] The device 2200 comprises a control unit 2210, which in one embodiment may be a processor that is communicatively coupled to a storage unit 2220. The software installed in the storage unit 2220 may depend on the features to be performed by the device 2200. For example, if the device 2200 represents one of the processor-based devices 105(1-2), 110, 401, 405 then the storage unit 2220 may include the e-mail management modules 125, 420, as well as the e-mail modules 160(1-2). The e-mail management modules 125, 420 and the e-mail modules 160(1-2) may be executable by the control unit 2210. Although not shown, it should be appreciated that in one embodiment an operating system, such as Windows®, Disk Operating System®, Unix®, OS/2®, Linux®, MAC OS®, or the like, may be stored on the storage unit 820 and be executable by the control unit 2210. The storage unit 2220 may also include device drivers for the various hardware components of the device 2200.

[176] In the illustrated embodiment, the device 2200 includes a display interface 2230. The device 800 may display information on a display device 2235 via the display interface 2230. In the illustrated embodiment, a user may input information using an input device, such as a keyboard 2240 and/or a mouse 2245, through an input interface 2250. The control unit 2210 is coupled to a network interface 2260, which may be adapted to receive, for example, a local area network card. In an alternative embodiment, the network interface 2260 may be a Universal Serial Bus interface or an interface for wireless communications. The device 2200 communicates with other devices through the network interface 2260. Although not shown, associated with the

network interface 2260 may be a network protocol stack, with one example being a UDP/IP or a TCP/IP stack. In one embodiment, both inbound and outbound packets may be passed through the network interface 2260 and the network protocol stack.

[177] It should be appreciated that the block diagram of the device 2200 of Figure 22 is exemplary in nature and that in alternative embodiments, additional, fewer, or different components may be employed without deviating from the spirit and scope of the instant invention. For example, if the device 2200 is a computer, it may include additional components such as a system bus or an I/O bus. In other embodiments, the various elements of the device 800 may be interconnected using various buses and controllers. Similarly, depending on the implementation, the device 2200 may be constructed with other desirable variations without deviating from the spirit and scope of the present invention.

[178] The various system layers, routines, or modules may be executable on control units, such as the control unit 2210. The control unit 2210 may include a microprocessor, a microcontroller, a digital signal processor, a processor card (including one or more microprocessors or controllers), or other control or computing devices. The storage devices referred to in this discussion may include one or more machine-readable storage media for storing data and instructions. The storage media may include different forms of memory including semiconductor memory devices such as dynamic or static random access memories (DRAMs or SRAMs), erasable and programmable read-only memories (EPROMs), electrically erasable and programmable read-only memories (EEPROMs) and flash memories; magnetic disks such as fixed, floppy or removable disks; other magnetic media including tape; and optical media such as compact disks (CDs) or digital video disks (DVDs). Instructions that make up the various software layers, routines, or modules in the various systems may be stored in respective storage devices. The instructions when executed by a respective control unit 2210 cause the corresponding system to perform programmed acts.

[179] In one embodiment, there is provided a method and an apparatus for providing a portion of an electronic mail message based upon a transfer rate, a message size, and a file format are presented. The method includes determining whether it is desirable to provide less than all of an electronic mail message and determining a format associated with the electronic mail message in response to determining that it is desirable to provide less than all of the electronic mail message. The method also includes selecting a portion of the electronic mail message using the determined format and providing the selected portion of the electronic mail message.

[180] In one embodiment there is provided a method and an apparatus for providing a portion of an electronic mail message having a reduced resolution are presented. The method includes determining whether it is desirable to provide less than all of an electronic mail message, selecting a portion of the electronic mail message, and reducing a resolution of the selected portion of the electronic mail message. The method also includes providing the portion of the electronic mail message with reduced resolution.

[181] In one embodiment, there is provided a method and an apparatus for providing notification of an undelivered portion of an electronic mail message based upon a scheduled time. The method includes determining that less than all of an electronic mail message has been transmitted, the electronic mail message including scheduling information indicative of a calendar event, associating the electronic mail message with the calendar event based upon the scheduling information, and providing a notification that less than all of the electronic mail message has been transmitted based on the calendar event.

[182] In one embodiment there is provided a method and an apparatus for providing a portion of an electronic mail message based upon digital rights. The method includes determining that a user is authorized to receive less than all of an electronic mail message based on at least one digital right associated with the electronic mail message, selecting a portion of the electronic mail message that the user is authorized to receive, and providing the selected portion of the electronic mail message.

[183] In one embodiment there is provided a method and an apparatus for providing a portion of an electronic mail message based upon a transfer rate and a message size are presented. The method includes determining a value associated with a data transfer rate, determining a value associated with a size of an electronic mail message, and determining mail transfer criteria. The method also includes selecting a portion of the electronic mail message based upon the determined transfer rate value, the determined value associated with the size of the electronic mail message, and the determined mail transfer criteria. The method further includes providing the selected portion of the electronic mail message.

[184] The particular embodiments disclosed above are illustrative only, as the invention may be modified and practiced in different but equivalent manners apparent to those skilled in the art having the benefit of the teachings herein. Furthermore, no limitations are intended to the details of construction or design herein shown, other than as described in the claims below. It is therefore evident that the particular embodiments

disclosed above may be altered or modified and all such variations are considered within the scope and spirit of the invention. Accordingly, the protection sought herein is as set forth in the claims below.

Claims

[001] A method, comprising: determining whether it is desirable to provide less than all of an electronic mail message; selecting a portion of the electronic mail message; and providing the selected portion of the electronic mail message.

[002] The method of claim 1, further comprising: determining a format associated with the electronic mail message in response to determining that it is desirable to provide less than all of the electronic mail message; and selecting a portion of the electronic mail message based on the determined format.

[003] The method of claim 1 comprising: reducing a resolution of the selected portion of the electronic mail message, wherein the providing step comprises: providing the portion of the electronic mail message with reduced resolution.

[004] The method of claim 3, wherein reducing the resolution of the selected portion of the electronic mail message comprises downcasting a portion of at least one file associated with the electronic mail message.

[005] The method of claim 4, wherein downcasting the at least one file comprises downcasting at least one of an audio file, video file, a multimedia file, an image file, and a graphics file.

[006] The method of claim 5, wherein downcasting the at least one file comprises providing at least one of a full-size, reduced-resolution version of the at least one file, a reduced-size, reduced-resolution version of the at least one file, a reduced-size, full-resolution version of the at least one file, and a reduced-color-resolution version of the at least one file.

[007] The method of claim 1, 2 or 3, wherein determining whether it is desirable to provide all of the electronic mail message comprises: determining a value associated with a data transfer rate; determining a value associated with a size of the electronic mail message; and determining a mail transfer criteria.

[008] The method of claim 2, wherein determining whether it is desirable to provide all of the electronic mail message comprises: determining a value associated with a data transfer rate; determining a value associated with a size of the electronic mail message; and determining a mail transfer criteria, and wherein determining the value associated with the size of the electronic mail message comprises identifying at least one chart, table, page, agenda, table of contents, summary, audio clip, or video clip based upon the determined format.

[009] The method of claim 8, wherein determining the value associated with the size of

the electronic mail message comprises determining a value associated with a size of the at least one identified chart, table, page, agenda, table of contents, summary, audio clip and video clip.

[010] The method of claim 8, wherein selecting the portion of the electronic mail message comprises selecting at least one identified chart, table, page, agenda, table of contents, summary, audio clip, or video clip based upon the determined value associated with the size of the at least one identified chart, table, page, agenda, table of contents, summary, audio clip or video clip.

[011] The method of claim 7, wherein determining the value associated with the data transfer rate comprises determining the value associated with the data transfer rate based upon a device profile or determining an average data transfer rate based upon data in at least one received data packet and a time period associated with the received data packet.

[012] The method of claim 7, wherein determining the mail transfer criteria comprises determining at least one of a threshold time, a default threshold time, a user's preferred maximum transfer time, a maximum attachment size, a minimum average transfer rate, and a time of day based upon at least one of a user input, a user profile, and a device profile.

[013] The method of claim 12, wherein selecting the portion of the electronic mail message comprises: estimating a transfer time using the determined value associated with the data transfer rate and the determined value associated with the size of at least one file associated with the electronic mail message; and comparing the threshold time and the estimated transfer time.

[014] The method of claim 3, wherein selecting the portion of the electronic mail message having a reduced resolution comprises selecting portions of at least one file associated with the electronic mail message.

[015] The method of claim 3, wherein selecting the portion of the electronic mail message having the reduced resolution comprises at least one of selecting a reduced resolution, selecting a section of an image, and providing alternative text.

[016] The method of claim 3, wherein selecting the portion of the electronic mail message comprises dynamically selecting the portion of the electronic mail message.

[017] The method of claim 16, wherein dynamically selecting the portion of the electronic mail message comprises at least one of selecting the portion of the

electronic mail specifying a time interval, and specifying a number of frames.

[018] The method of claim 2 or 3 wherein providing the selected portion of the electronic mail message comprises: transmitting the selected portion of the electronic mail message; and storing the electronic mail message.

[019] The method of claim 18, wherein providing the selected portion of the electronic mail message comprises transmitting the selected portion from a server to a processor based device and storing the electronic mail message on the server, or transmitting the selected portion from a processor-based device to a server and storing the electronic mail message on the processor based device.

[020] The method of claim 2 or 3, further comprising: providing a user an option to provide the selected portion; and providing the selected portion in response to the user opting to provide the selected portion.

[021] The method of claim 2, wherein providing the selected portion of the electronic mail message comprises at least one of trickle uploading and trickle downloading the electronic mail message.

[022] The method of claim 2, further comprising providing an additional selected portion of the electronic mail message substantially after providing the selected portion of the electronic mail message.

[023] The method of claim 22, wherein providing the additional selected portion of the electronic mail message comprises providing the electronic mail message.

[024] The method of claim 3, further comprising: displaying at least one text string indicative of the at least one portion of the electronic mail message; displaying at least one indication of a priority level of the at least one portion of the electronic mail message; displaying at least one selection field corresponding to the at least one portion of the at least one electronic mail message; monitoring the position and selection status of a pointer controller to detect that one of the at least one selection fields has been selected by the user; and altering the appearance of the selected one of the at least one selection fields in response to detecting that one of the at least one selection fields has been selected by the user.

[025] The method of claim 24, further comprising displaying at least one of a size field, a page field, and an estimated download time corresponding to the at least one portion of the at least one electronic mail message.

[026] The method of claim 25, further comprising modifying a priority level of the at least one portion of the at least one electronic mail message in response to detecting that at least one priority level field has been selected by the user.

[027] The method of claim 3, further comprising controlling a pointer element on the graphical user display with a user pointer controller, the pointer controller having position and selection status responsive to operation by the user.

[028] The method of claim 1, comprising: determining a value associated with a data transfer rate; determining a value associated with a size of an electronic mail message; determining a mail transfer criteria, and wherein the selecting step comprises: selecting a portion of the electronic mail message based upon the determined transfer rate value, the determined value associated with the size of the electronic mail message, and the determined mail transfer criteria.

[029] The method of claim 28, wherein determining the value associated with the data transfer rate comprises determining the value associated with the data transfer rate based upon at least one received data packet.

[030] The method of claim 29, wherein determining the value associated with the data transfer rate based upon the received data packet comprises determining an average data transfer rate using data in the received data packet and a time period associated with the received data packet.

[031] The method of claim 28, wherein determining the value associated with the data transfer rate comprises determining the value associated with the transfer rate based upon a device profile.

[032] The method of claim 28, wherein determining the mail transfer criteria comprises determining the mail transfer criteria based upon at least one of a user input, a user profile, and a device profile.

[033] The method of claim 28, wherein determining the mail transfer criteria comprises determining at least one of a threshold time, a maximum attachment size, a minimum average transfer rate, a time of day, a default threshold time and a user's preferred maximum transfer time.

[034] The method of claim 33, wherein selecting the portion of the electronic mail message comprises estimating a transfer time using the determined value associated with the data transfer rate and the determined value associated with the size of the electronic mail message.

[035] The method of claim 34, wherein selecting the portion of the electronic mail message comprises comparing the threshold time and the estimated transfer time.

[036] The method of claim 28, wherein providing the selected portion of the electronic mail message comprises: transmitting the selected portion of the electronic mail message; and storing the electronic mail message.

[037] The method of claim 36, wherein providing the selected portion of the electronic mail message comprises transmitting the selected portion from a server to a processor based device and storing the electronic mail message on the server.

[038] The method of claim 36, wherein providing the selected portion of the electronic mail message comprises transmitting the selected portion from a processor-based device to a server and storing the electronic mail message on the processor based device.

[039] The method of claim 28, further comprising providing a user at least one of an indication of the selected portion and an option to provide the selected portion.

[040] The method of claim 39, wherein providing the selected portion comprises providing the selected portion in response to the user opting to provide the selected portion.

[041] The method of claim 28, wherein providing the selected portion of the electronic mail message comprises at least one of trickle uploading and trickle downloading the electronic mail message.

[042] The method of claim 28, further comprising providing the electronic mail message substantially after providing the selected portion of the electronic mail message.

[043] The method of claim 1, wherein the step of determining whether it is desirable to provide less than all of an electronic mail message comprises determining that a user is authorized to receive less than all of an electronic mail message based on at least one digital right associated with the electronic mail message, wherein the step of selecting a portion of the electronic mail comprises selecting a portion of the electronic mail message that the user is authorized to receive.

[044] The method of claim 43, wherein determining that a user is authorized to receive less than all of the electronic mail message comprises determining that a user is authorized to receive less than all of the electronic mail message based upon at le ast one of a copyright, a distribution right, a broadcast right, a reproduction right, a publication right, a licensing restriction, fair use, and a restriction imposed by the Digital Rights Millennium Copyright Act.

[045] The method of claim 43, wherein determining that the user is authorized to receive less than all of the electronic mail message comprises accessing at least one of a user input and a user profile.

[046] The method of claim 45, wherein accessing the user profile comprises accessing the user profile on at least one of a local device and a remote device.

[047] The method of claim 43, further comprising acquiring authorization to receive a protected portion of the electronic mail message.

[048] The method of claim 47, wherein acquiring the authorization comprises acquiring a license to receive the protected portion of the electronic mail message.

[049] The method of claim 47, wherein acquiring the authorization comprises directing the user to an owner of the digital rights to the protected portion of the electronic mail message.

[050] The method of claim 47, further comprising providing the protected portion of the electronic mail message in response to acquiring the authorization.

[051] The method of claim 43, wherein selecting the portion comprises determining a format of at least one file associated with the electronic mail message.

[052] The method of claim 51, wherein selecting the portion of the electronic mail message comprises identifying at least one chart, table, page, agenda, table of contents, summary, audio clip, or video clip based upon the determined file format.

[053] The method of claim 51, wherein selecting the portion of the electronic mail message comprises reducing the resolution of the at least one file associated with the electronic mail message based upon the determined file format.

[054] The method of claim 53, wherein reducing the resolution of the at least one file comprises downcasting a portion of at least one of an audio file, video file, a multimedia file, an image file, and a graphics file.

[055] The method of claim 43, further comprising determining that it is desirable to receive less than all of the electronic mail message.

[056] The method of claim 55, wherein determining that it is desirable to provide less than all of an electronic mail messages comprises: determining a threshold time; determining a value associated with a data transfer rate; determining a value associated with a size of the electronic mail message; estimating a transfer time using the determined value associated with the data transfer rate and the determined value associated with the size of the electronic mail message; comparing the threshold time and the estimated transfer time; and selecting a portion of the electronic mail message based upon the comparison.

[057] The method of claim 43, wherein providing the selected portion of the electronic mail message comprises transmitting the selected portion from a server to a processor based device and storing the electronic mail message on the server.

[058] The method of claim 43, wherein providing the selected portion of the electronic mail message comprises transmitting the selected portion from a processor-based device to a server and storing the electronic mail message on the processor based device.

[059] An article comprising one or more machine-readable storage media containing instructions that when executed enable a processor to: access an electronic mail message for delivery to a remote device; determine whether it is desirable to provide less than all of the electronic mail message; select a portion of the electronic mail message; and provide the selected portion of the electronic mail message to the remote device.

[060] The article of claim 59, wherein the instructions when executed further enable a processor to: determine a format associated with the electronic mail message in response to determining that it is desirable to provide less than all of the electronic mail message; and select a portion of the electronic mail message using the determined format

[061] The article of claim 59, wherein the instructions when executed enable a processor to: reduce a resolution of the selected portion of the electronic mail message; and provide the portion of the electronic mail message with reduced resolution.

[062] The article of claim 61, wherein the instructions that when executed enable a processor to downcast the selected portion of the electronic mail message.

[063] The article of claim 61, wherein the instructions that when executed enable a processor to select portions of at least one file associated with the electronic mail message.

[064] The article of claim 61, wherein the instructions that when executed enable a processor to select portions of the at least one file associated with the electronic mail message based upon at least one tag.

[065] The article of claim 61, wherein the instructions that when executed enable a processor to dynamically select the portion of the electronic mail message.

[066] The article of claim 60 or 61, wherein the instructions that when executed enable the processor to: determine a value associated with a data transfer rate; determine a value associated with a size of the electronic mail message; and determine a mail transfer criteria.

[067] The article of claim 66, wherein the instructions that when executed enable the processor to: estimate a transfer time using the determined value associated with

the data transfer rate and the determined value associated with the size of at least one file associated with the electronic mail message; and compare the threshold time and the estimated transfer time.

[068] The article of claim 60 or 61, wherein the instructions that when executed enable the processor to transmit the selected portion of the electronic mail message and store the electronic mail message.

[069] The article of claim 60, wherein the instructions that when executed enable the processor to provide an additional selected portion of the electronic mail message substantially after providing the selected portion of the electronic mail message.

[070] The article of claim 60, wherein the instructions that when executed enable the processor to provide the electronic mail message.

[071] The article of claim 59, wherein the instructions when executed, enable a processor to: determine a value associated with a data transfer rate; determine a value associated with a size of an electronic mail message; determine a mail transfer criteria; select a portion of the electronic mail message based upon the determined transfer rate value, the determined value associate with the size of the electronic mail message, and the determined mail transfer criteria.

[072] The article of claim 71, wherein the one or more machine-readable storage media contain instructions that when executed enable the processor to determine an average data transfer rate using data in at least one received data packet and a time period associated with the received data packet.

[073] The article of claim 71, wherein the one or more machine-readable storage media contain instructions that when executed enable the processor to determine at least one of a threshold time, a default threshold time, a user's preferred maximum transfer time, a maximum attachment size, a minimum average transfer rate, and a time of day based upon at least one of a user input, a user profile, and a device profile.

[074] The article of claim 71, wherein the one or more machine-readable storage media contain instructions that when executed enable the processor to compare at least one of the threshold time, the default threshold time, and the user's preferred maximum transfer time with the estimated transfer time.

[075] The article of claim 71, wherein the one or more machine-readable storage media contain instructions that when executed enable the processor to: transmit the selected portion of the electronic mail message; and store the electronic mail

message.

[076] The article of claim 71, wherein the one or more machine-readable storage media contain instructions that when executed enable the processor to provide the electronic mail message substantially after providing the selected portion of the electronic mail message.

[077] The article of claim 59 comprising instructions that when executed enable a processor to: determine that a user is authorized to receive less than all of an electronic mail message based on at least one digital right associated with the electronic mail message; and select a portion of the electronic mail message that the user is authorized to receive.

[078] The article of claim 77, wherein the one or more machine-readable storage media contain instructions that when executed enable the processor to access at least one of a user input and a user profile.

[079] The article of claim 77, wherein the one or more machine-readable storage media contain instructions that when executed enable the processor to acquire authorization to receive a protected portion of the electronic mail message.

[080] The article of claim 79, wherein the one or more machine-readable storage media contain instructions that when executed enable the processor to provide the protected portion of the electronic mail message in response to acquiring the authorization to receive the protected portion of the electronic mail message.

[081] The article of claim 79, wherein the one or more machine-readable storage media contain instructions that when executed enable the processor to direct the user to an owner of the digital rights to the unauthorized portion of the electronic mail message.

[082] The article of claim 77, wherein the one or more machine-readable storage media contain instructions that when executed enable the processor to downcast a portion of at least one of an audio file, video file, a multimedia file, an image file, and a graphics file.

[083] The article of claim 77, wherein the one or more machine-readable storage media contain instructions that when executed enable the processor to: determine a threshold time; determine a value associated with a data transfer rate; determine a value associated with a size of the electronic mail message; estimate a transfer time using the determined value associated with the data transfer rate and the determined value associated with the size of the electronic mail message; compare the threshold time and the estimated transfer time; and select a portion

of the electronic mail message based upon the comparison.

[084] An apparatus, comprising: an interface; and a control unit coupled to the interface and adapted to: determine whether it is desirable to provide less than all of an electronic mail message; select a portion of the electronic mail message; provide the selected portion of the electronic mail message.

[085] The apparatus of claim 84, wherein the control unit is adapted to: determine a format associated with the electronic mail message in response to determining that it is desirable to provide less than all of the electronic mail message; and select a portion of the electronic mail message using the determined format

[086] The apparatus of claim 84, wherein the control unit is adapted to: reduce a resolution of the selected portion of the electronic mail message; and provide the portion of the electronic mail message with reduced resolution.

[087] The apparatus of claim 86, wherein the control unit is adapted to downcast at least the selected portion of the electronic mail message.

[088] The apparatus of claim 86, wherein the control unit is adapted to select at least one portion of at least one file associated with the electronic mail message.

[089] The apparatus of claim 86, wherein the control unit is adapted to select the portion of the at least one file associated with the electronic mail message based upon at least one tag.

[090] The apparatus of claim 86, wherein the control unit is adapted to dynamically select the portion of the electronic mail message..

[091] The apparatus of claim 85 or 86, wherein the control unit is adapted to: determine a value associated with a data transfer rate; determine a value associated with a size of the electronic mail message; and determine a mail transfer criteria.

[092] The apparatus of claim 91, wherein the control unit is adapted to: estimate a transfer time using the determined value associated with the data transfer rate and the determined value associated with the size of at least one file associated with the electronic mail message; and compare the threshold time and the estimated transfer time.

[093] The apparatus of claim 85 or 86, wherein the control unit is adapted to transmit the selected portion of the electronic mail message and store the electronic mail message.

[094] The apparatus of claim 85, wherein the control unit is adapted to provide an additional selected portion of the electronic mail message substantially after

providing the selected portion of the electronic mail message.

[095] The apparatus of claim 85, wherein the control unit is adapted to provide the electronic mail message.

[096] The apparatus of claim 84 wherein the control unit is adapted to: determine a value associated with a data transfer rate; determine a value associated with a size of an electronic mail message; determine a mail transfer criteria; and select a portion of the electronic mail message based upon the determined transfer rate value, the determined value associate with the size of the electronic mail message, and the determined mail transfer criteria.

[097] The apparatus of claim 96, wherein the control unit is adapted to determine the value associated with the data transfer rate using data in the received data packet and a time period associated with the received data packet.

[098] The apparatus of claim 96, wherein the control unit is adapted to: receive user input indicating user preferences; set at least one flag based upon the received user input; and determine the mail transfer criteria based upon the at least one flag.

[099] The apparatus of claim 96, wherein the control unit is adapted to determine a mail transfer criteria indicating at least one of a threshold time, a maximum attachment size, a minimum average transfer rate, and a time of day, and wherein the control unit is adapted to determine at least one of a default threshold time and a user's preferred maximum transfer time.

[100] The apparatus of claim 99, wherein the control unit is adapted to estimate a transfer time using the determined value associated with the data transfer rate and the determined value associated with the size of the electronic mail message, and wherein the control unit is adapted to select the portion of the electronic mail message by comparing the threshold time and the estimated transfer time.

[101] The apparatus of claim 96, wherein the control unit is adapted to provide the selected portion of the electronic mail message to at least one of a processor-based device and a server via the interface.

[102] The apparatus of claim 96, further comprising a storage unit, and, wherein the control unit is adapted to: transmit the selected portion of the electronic mail message via the interface; and store the electronic mail message on the storage unit.

[103] The apparatus of claim 102, wherein the control unit is adapted to provide a notification of an unselected portion of the electronic mail message, wherein the

notification includes an action button to initiate transfer of at least the unselected portion of the stored electronic mail message.

[104] The apparatus of claim 84 wherein the control unit is adapted in determining whether it is desirable to provide less than all of an electronic mail message, to: determine that a user is authorized to receive less than all of an electronic mail message based on at least one digital right associated with the electronic mail message, wherein the control unit is adapted to: select a portion of the electronic mail message that the user is authorized to receive

[105] The apparatus of claim 104, wherein the control unit is adapted to access at least one of a user input and a user profile via the interface.

[106] The apparatus of claim 104, wherein the control unit is adapted to acquire authorization to receive a protected portion of the electronic mail message.

[107] The apparatus of claim 106, wherein the control unit is adapted to provide the protected portion of the electronic mail message in response to acquiring the authorization to receive the protected portion of the electronic mail message.

[108] The apparatus of claim 104, wherein the control unit is adapted to downcast a portion of at least one of an audio file, video file, a multimedia file, an image file, and a graphics file.

[109] The apparatus of claim 104, wherein the control unit is adapted to: determine a threshold time; determine a value associated with a data transfer rate; determine a value associated with a size of the electronic mail message; estimate a transfer time using the determined value associated with the data transfer rate and the determined value associated with the size of the electronic mail message; compare the threshold time and the estimated transfer time; and select a portion of the electronic mail message based upon the comparison.

[110] A system, comprising: a first processor based device adapted to provide an electronic mail message; a second processor based device adapted to receive the electronic mail message; and at least one module adapted to: determine whether it is desirable to provide less than all of the electronic mail message; select a portion of the electronic mail message; and provide the selected portion of the electronic mail message.

[111] The system of claim 110, wherein the at least one module is adapted to: determine a format associated with the electronic mail message in response to determining that it is desirable to provide less than all of the electronic mail message; and select the portion of the electronic mail message using the

determined format.

[112] The system of claim 110, wherein the first processor based device is an electronic mail server and the second processor based device is a remote client.

[113] The system of claim 111, wherein the first processor based device is a remote client and the second processor based device is an electronic mail server.

[114] The system of claim 111, wherein the control unit is adapted to: determine a value associated with a data transfer rate; determine a value associated with a size of the electronic mail message; estimate a transfer time using the determined value associated with the data transfer rate and the determined value associated with the size of the electronic mail message; and compare the threshold time and the estimated transfer time.

[115] The system of claim 110 adapted to: determine that a user of the first processor based device is authorized to receive less than all of an electronic mail message based on at least one digital right associated with the electronic mail message; and select a portion of the electronic mail message that the user is authorized to receive

[116] The system of claim 115, wherein the second processor-based device is a server, and further comprising a network, and wherein the server and the at least one first processor-based device are communicatively coupled via the network.

[117] The system of claim 115, wherein the second processor-based device is adapted to queue the electronic mail message.

[118] The system of claim 115, further comprising a storage unit, and wherein the second processor-based device is adapted to provide the electronic mail message to the storage unit

[119] A method, comprising: determining that less than all of an electronic mail message has been transmitted, the electronic mail message including scheduling information indicative of a calendar event; associating the electronic mail message with the calendar event based upon the scheduling information; and providing a notification that less than all of the electronic mail message has been transmitted based on the calendar event.

[120] The method of claim 119, wherein providing the notification comprises: determining a time associated with the calendar event; determining a current time; and determining a difference between the time associated with the electronic mail message and the current time.

[121] The method of claim 120, wherein providing the notification comprises

providing a plurality of notifications having at least one of a provision frequency and an urgency that increases as the difference between the time associated with the electronic mail message and the current time decreases.

[122] The method of claim 121, wherein providing the plurality of notifications having at least one of the provision frequency and the urgency comprises providing the plurality of notifications having a provision frequency determined by a user profile.

[123] The method of claim 120, wherein providing the notification comprises providing a late notice if the current time exceeds the time associated with the electronic mail message.

[124] The method of claim 119, further comprising providing the electronic mail message.

[125] The method of claim 124, wherein providing the electronic mail message comprises scheduling a time period for providing the electronic mail message.

[126] The method of claim 125, wherein scheduling the time period for providing the electronic mail message comprises scheduling the time period for providing the electronic mail message based upon at least one of a default time, a historical usage pattern, and a connection speed.

[127] The method of claim 124, wherein providing the electronic mail message comprises prompting a user to connect on-demand.

[128] The method of claim 124, wherein providing the electronic mail message comprises determining whether a user has received substantially all of the electronic mail message.

[129] The method of claim 124, wherein providing the electronic mail message comprises determining a cost of connectivity.

[130] The method of claim 129, wherein providing the electronic mail message comprises determining a price point based upon the determined cost of connectivity.

[131] The method of claim 119, wherein determining that determining that less than all of the electronic mail message has been transmitted comprises: accessing at least one of a queue, a storage medium, a register, and a flag; and determining that less than all of the electronic mail message has been transmitted to the intended recipient using the accessed queue, storage medium, register, or flag.

[132] The method of claim 119 comprising: determining a value associated with a data transfer rate; determining a value associated with a size of an undelivered portion

of the electronic mail message; and scheduling a transfer time for the un-delivered portion of the electronic mail message based upon the determined transfer rate value, the determined value associated with the size of the electronic mail message, and the calendar event.

[133] The method of claim 132, wherein scheduling the transfer time comprises estimating a transfer time based upon at least one of the determined transfer rate value and the determined value associated with the size of the electronic mail message.

[134] The method of claim 133, wherein scheduling the transfer time comprises: determining a time associated with the calendar event; determining a current time; and determining a difference between the time associated with the electronic mail message and the current time.

[135] The method of claim 134, wherein scheduling the transfer time comprises scheduling the transfer time based upon the estimated transfer time and the difference between the time associated with the electronic mail message and the current time.

[136] The method of claim 132, wherein determining the value associated with the data transfer rate comprises determining an average data transfer rate using data in a received data packet and a time period associated with the received data packet.

[137] The method of claim 132, wherein determining the value associated with the data transfer rate comprises determining the value associated with the transfer rate based upon a device profile.

[138] The method of claim 132, wherein providing the notification comprises providing at least one of an option to schedule a transfer of the undelivered portion of the electronic mail message, initiate a transfer of the undelivered portion of the electronic mail message, and provide an additional notification at a later time.

[139] The method of claim 132, further comprising providing the electronic mail message.

[140] The method of claim 139, wherein providing the electronic mail message comprises providing the electronic mail message at the scheduled transfer time.

[141] The method of claim 139, wherein providing the electronic mail message comprises providing a user an option to initiate the transfer.

[142] A method for interfacing with a user of a computer system having a graphical user display, comprising: displaying at least one indicator of an event associated

with at least one undelivered portion of at least one electronic mail message; monitoring the position and selection status of a pointer controller to detect that one of the at least one indicator has been selected by the user; and providing scheduling information associated with the at least one undelivered portion of the at least one electronic mail message and the event in response to detecting that one of the at least one indicators has been selected by the user.

[143] The method of claim 142, wherein providing the scheduling information comprises providing at least one of a current time, a scheduled time, a scheduled event, and a scheduled download time.

[144] The method of claim 142, further comprising providing an option to modify the scheduling information associated with the at least one undelivered portion of the at least one electronic mail message and the event in response to detecting that one of the at least one indicators has been selected by the user.

[145] The method of claim 142, further comprising displaying a notification associated with the at least one undelivered portion of the at least one electronic mail message based upon the scheduling information.

[146] The method of claim 142, wherein displaying the notification comprises providing at least one of an option to schedule a transfer of the at least one un-delivered portion of the at least one electronic mail message, initiate a transfer of the at least one undelivered portion of the at least one electronic mail message, and provide an additional notification at a later time.

[147] The method of claim 142, further comprising controlling a pointer element on the graphical user display with a user pointer controller, the pointer controller having position and selection status responsive to operation by the user.

[148] The method of claim 142, wherein displaying the at least one indicator of the event comprises displaying at least one of an envelope icon and a calendar icon.

[149] A method for interfacing with a user of a computer system having a graphical user display, comprising: determining whether it is desirable to provide less than all of an electronic mail message; selecting at least one portion of the electronic mail message; displaying at least one text string indicative of the at least one portion of the electronic mail message; displaying at least one indication of a version of the at least one portion of the electronic mail message having a reduced resolution; displaying at least one selection field corresponding to the reduced-resolution version of the at least one portion of the at least one electronic mail message; monitoring the position and selection status of a pointer

controller to detect that one of the at least one selection fields has been selected by the user; and altering the appearance of the selected one of the at least one selection fields in response to detecting that one of the at least one selection fields has been selected by the user.

[150] The method of claim 149, further comprising displaying at least one of a size field and a time field corresponding to the reduced-resolution version of the at least one portion of the at least one electronic mail message.

[151] The method of claim 149, further comprising: displaying at least one indication of a priority level of the reduced-resolution version of the at least one portion of the electronic mail message; and providing an option to modify a priority level of the reduced-resolution version of the at least one portion of the electronic mail message in response to detecting that at least one priority level field has been selected by the user.

[152] The method of claim 149, further comprising controlling a pointer element on the graphical user display with a user pointer controller, the pointer controller having position and selection status responsive to operation by the user.

[153] A method for interfacing with a user of a computer system having a graphical user display, comprising: displaying at least one indicator of a digital rights management rule associated with at least one portion of at least one electronic mail message; monitoring the position and selection status of a pointer controller to detect that at least one of the at least one indicators has been selected by the user; and providing an indication of a user authorization associated with the at least one portion of the at least one electronic mail message and the digital rights management rule in response to detecting that at least one of the at least one indicators has been selected by the user.

[154] The method of claim 153, wherein providing the indication of the user authorization comprises providing at least one of an option to acquire one or more digital rights and an option to downcast the at least one portion of the at least one electronic mail message.

[155] The method of claim 153, further comprising providing an option to modify the digital rights management rule associated with the at least one portion of the at least one electronic mail message in response to detecting that at least one of the at least one indicators has been selected by the user.

[156] The method of claim 153, further comprising controlling a pointer element on the graphical user display with a user pointer controller, the pointer controller

having position and selection status responsive to operation by the user.

[157] The method of claim 153, wherein displaying the at least one indicator of the indication of the user authorization associated with the at least one portion of the at least one electronic mail message and the digital rights management rule comprises displaying at least one of a closed-lock icon and an open-lock icon.

[158] A method for interfacing with a user of a computer system having a graphical user display, comprising: displaying at least one text string indicative of at least one portion of at least one electronic mail message; displaying at least one indication of an estimated time to download the portion of the electronic mail message; displaying at least one selection field corresponding to the at least one portion of the at least one electronic mail message; monitoring the position and selection status of a pointer controller to detect that one of the at least one selection fields has been selected by the user; and altering the appearance of the selected one of the at least one selection fields in response to detecting that one of the at least one selection fields has been selected by the user.

[159] The method of claim 158 further comprising displaying a progress field indicative of a transferred portion of the at least one portion of the at least one electronic mail message.

[160] The method of claim 158, further comprising: displaying at least one action field corresponding to the at least one portion of the at least one electronic mail message; monitoring the position and selection status of the pointer controller to detect that one of the at least one action fields has been selected by the user.

[161] The method of claim 160, further comprising initiating or pausing a transfer of the at least one portion of the at least one electronic mail message in response to detecting that one of the at least one action fields has been selected by the user.

[162] The method of claim 158, further comprising controlling a pointer element on the graphical user display with a user pointer controller, the pointer controller having position and selection status responsive to operation by the user.

[163] The method of claim 158, further comprising selecting the at least one portion of the at least one electronic mail message using input provided by the user.

[164] A computer program comprising program code means adapted to perform the method of any of claims 1 to 58 or the method of any of claims 119 to 163, when said program is run on a computer.

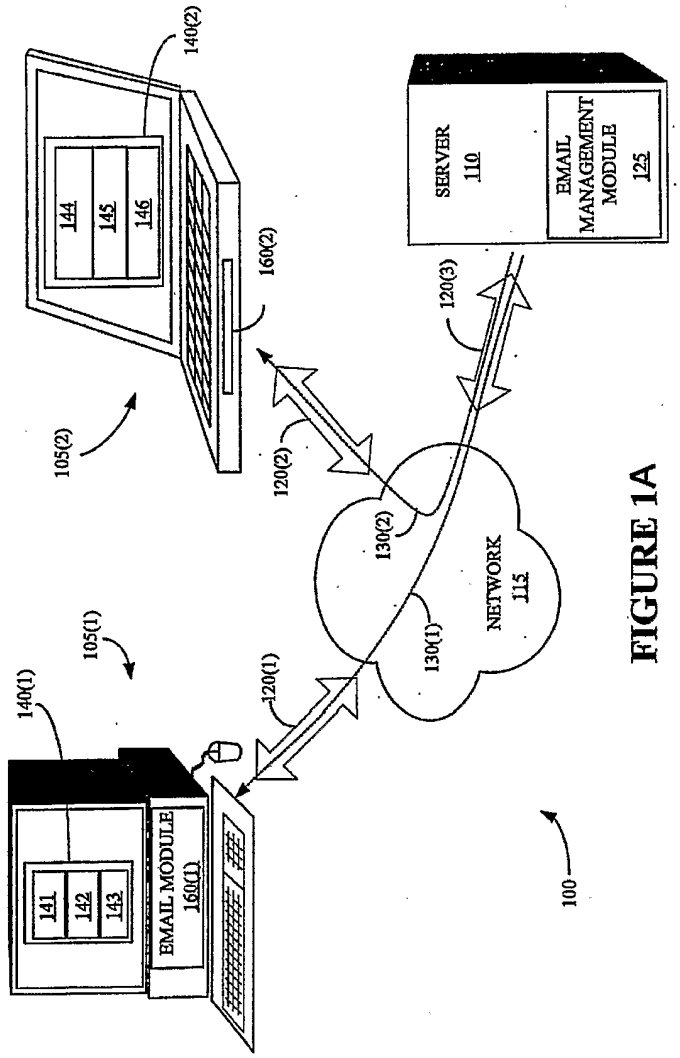
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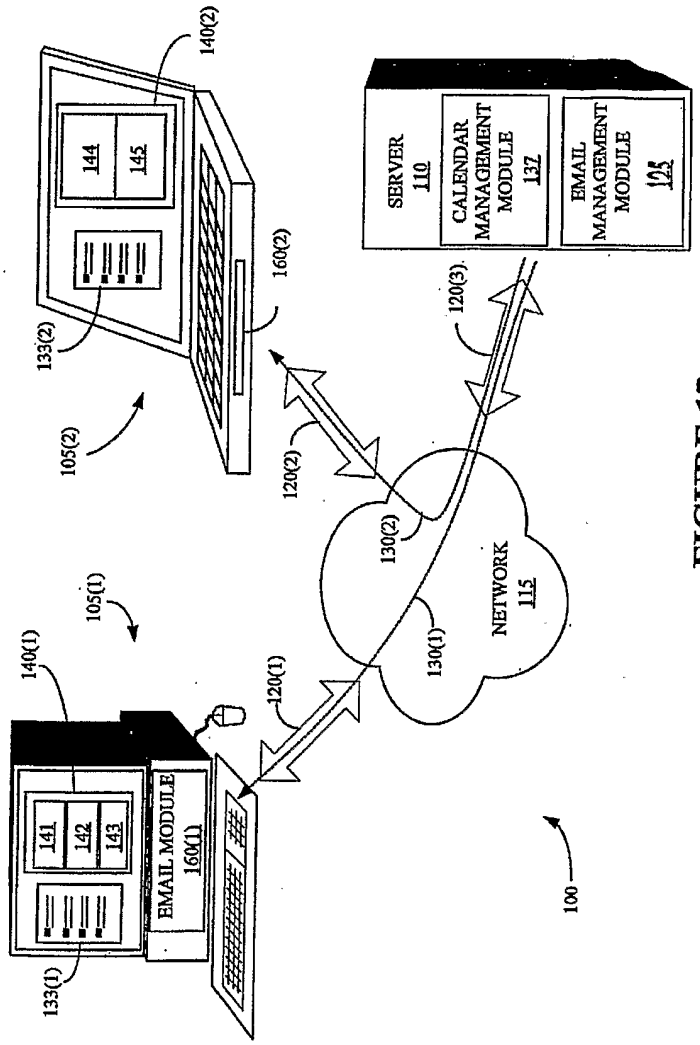
FIGURE 1A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MODULE
125
120(3)
130(2)
NETWORK
115
130(1)
105(1)
140(1)
120(1)
141
142
143
EMAIL MODULE
160(1)
133(1)
100

FIGURE 1B

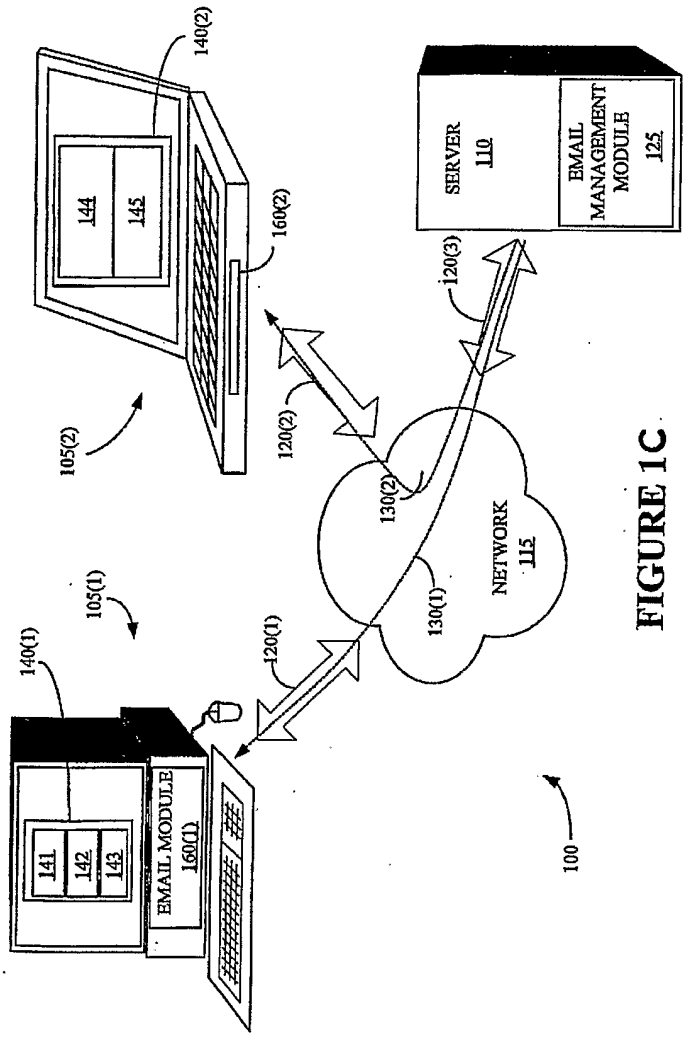
140(2)
144
145
160(2)
105(2)
120(2)
SERVER
110
EMAIL
MANAGEMENT
MODULE
125
120(3)
130(2)
NETWORK
115
130(1)
105(1)
140(1)
120(1)
141
142
143
EMAIL MODULE
160(1)
100

FIGURE 1C

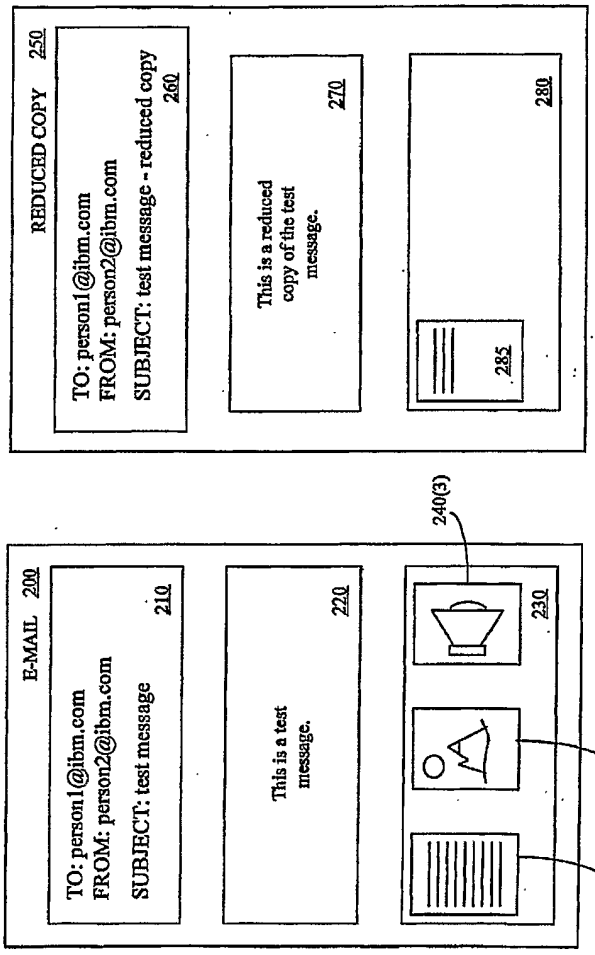
E-MAIL 200
TO: person1@ibm.com
FROM: person2@ibm.com
SUBJECT: test message
210
This is a test message.
220
240(3)
230
240(2)
240(1)
REDUCED COPY 250
TO: person1@ibm.com
FROM: person2@ibm.com
SUBJECT: test message - reduced copy
260
This is a reduced copy of the test message.
270
280
285

FIGURE 2A

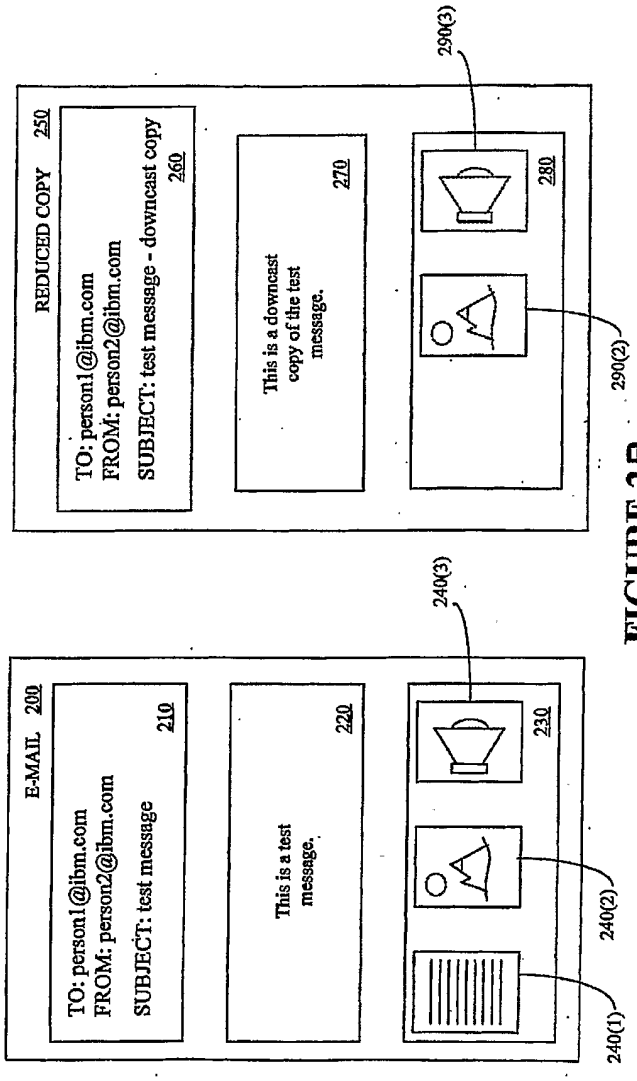
E-MAIL 200
TO: person1@ibm.com
FROM: person2@ibm.com
SUBJECT: test message
210
This is a test message.
220
230
240(3)
240(2)
240(1)
REDUCED COPY 250
TO: person1@ibm.com
FROM: person2@ibm.com
SUBJECT: test message - downcast copy
260
This is a downcast copy of the test message.
270
280
290(3)
290(2)

FIGURE 2B

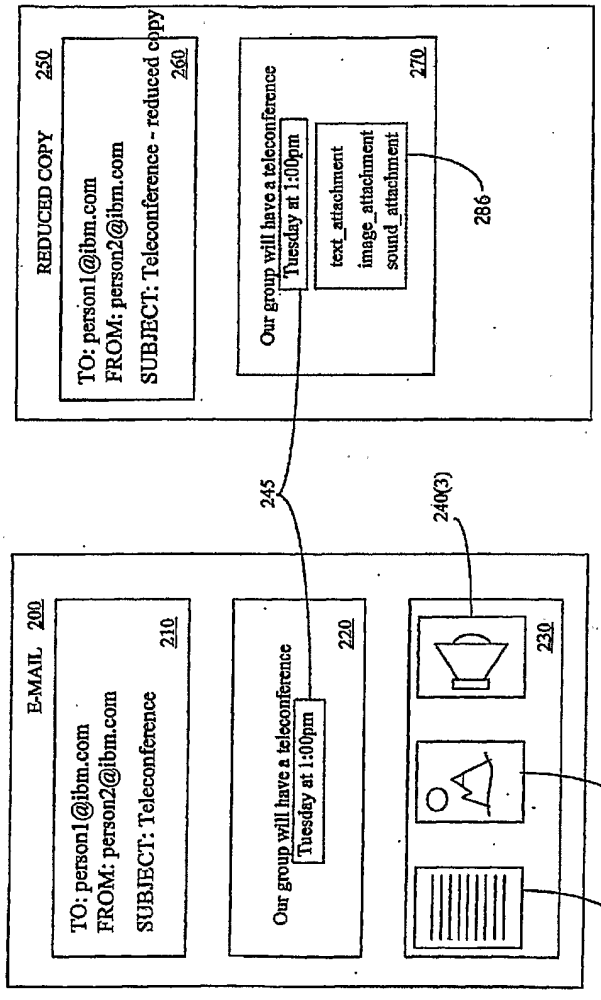
REDUCED COPY 250
TO: person1@ibm.com
FROM: person2@ibm.com
SUBJECT: Teleconference - reduced copy
260
Our group will have a teleconference Tuesday at 1:00pm
text_attachment
image_attachment
sound_attachment
270
286
245
240(3)
E-MAIL 200
TO: person1@ibm.com
FROM: person2@ibm.com
SUBJECT: Teleconference
210
Our group will have a teleconference Tuesday at 1:00pm
220
230
240(2)
240(1)

FIGURE 2C

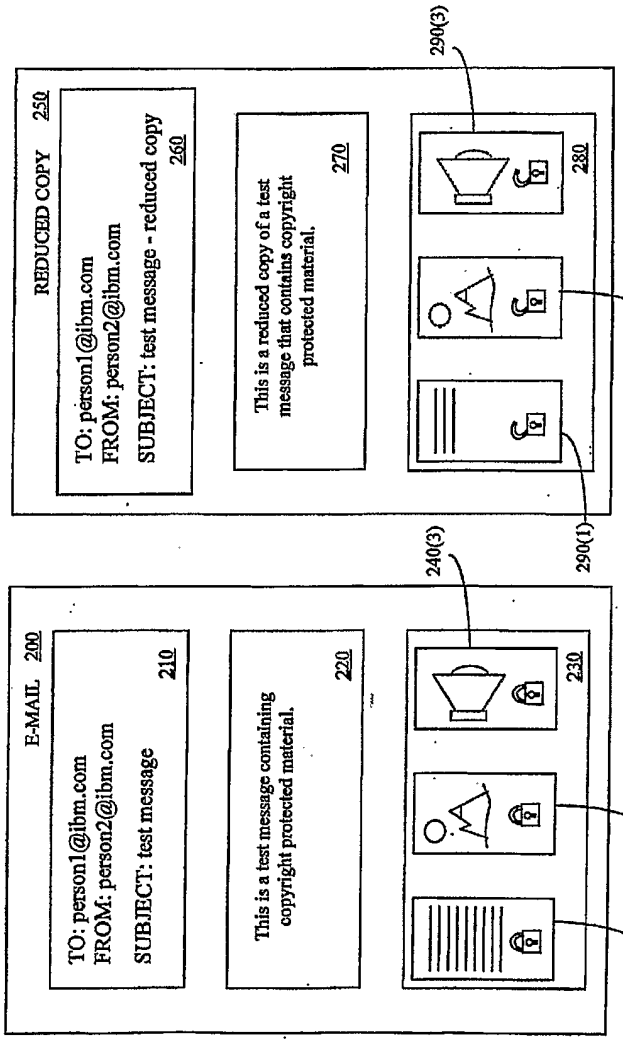
E-MAIL 200
TO: person1@ibm.com
FROM: person2@ibm.com
SUBJECT: test message
210
This is a test message containing copyright protected material.
220
230
240(1)
240(2)
240(3)
REDUCED COPY 250
TO: person1@ibm.com
FROM: person2@ibm.com
SUBJECT: test message - reduced copy
260
This is a reduced copy of a test message that contains copyright protected material.
270
280
290(1)
290(2)
290(3)

FIGURE 2D

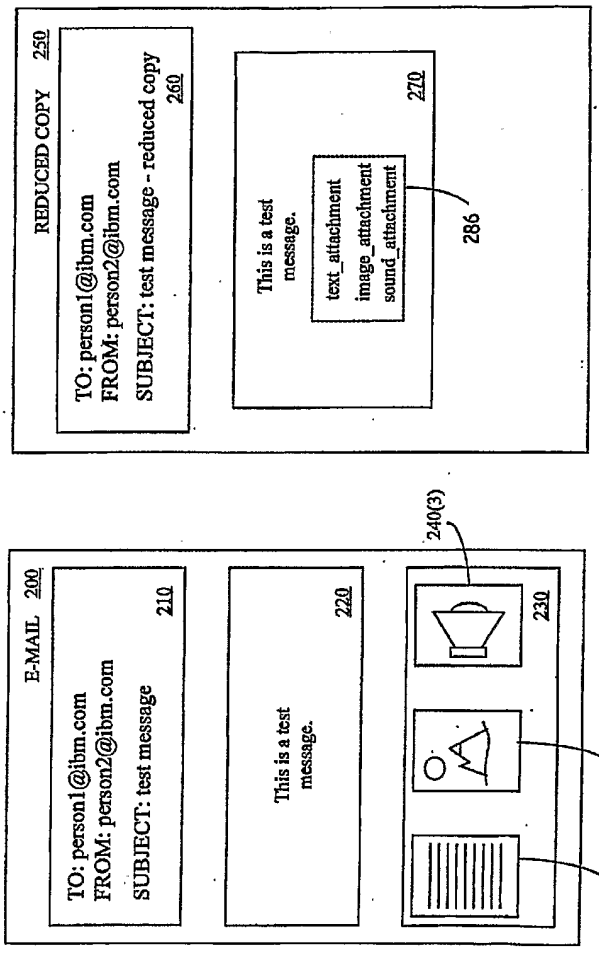
E-MAIL 200
TO: person1@ibm.com
FROM: person2@ibm.com
SUBJECT: test message
210
This is a test message.
220
240(3)
240(2)
240(1)
230
REDUCED COPY 250
TO: person1@ibm.com
FROM: person2@ibm.com
SUBJECT: test message - reduced copy
260
This is a test message.
text_attachment
image_attachment
sound_attachment
270
286

FIGURE 2E

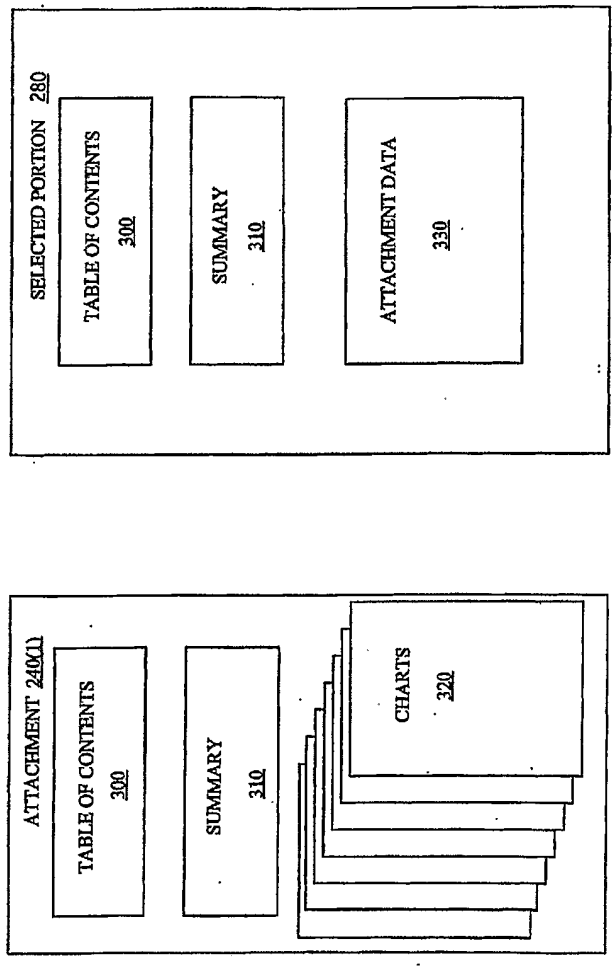
SELECTED PORTION 280
TABLE OF CONTENTS 300
SUMMARY 310
ATTACHMENT DATA 330
ATTACHMENT 240(1)
TABLE OF CONTENTS 300
SUMMARY 310
CHARTS 320

FIGURE 3

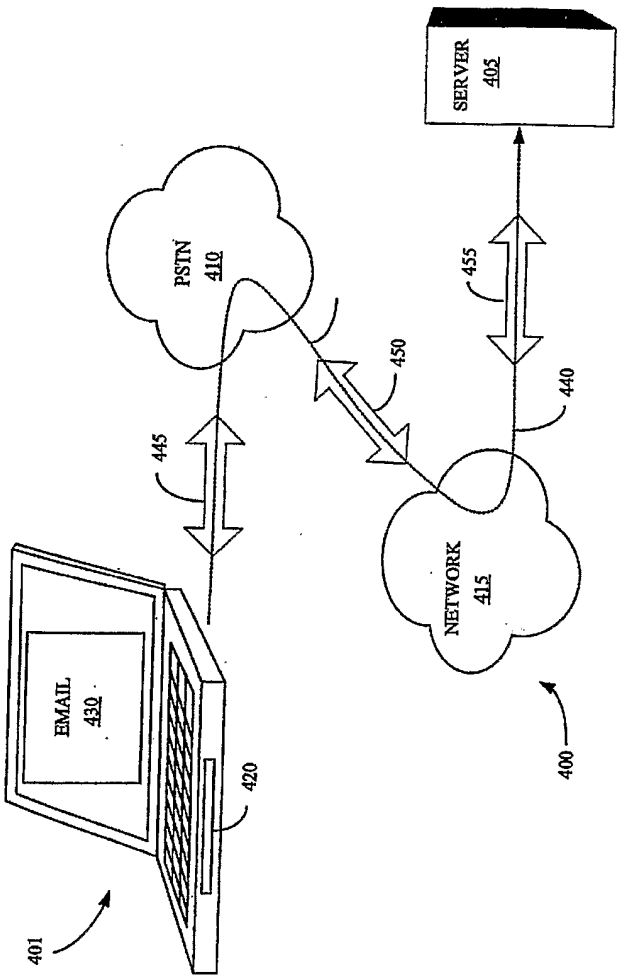
SERVER
405
PSTN
410
455
450
440
445
NETWORK
415
EMAIL
430
420
400
401

FIGURE 4A

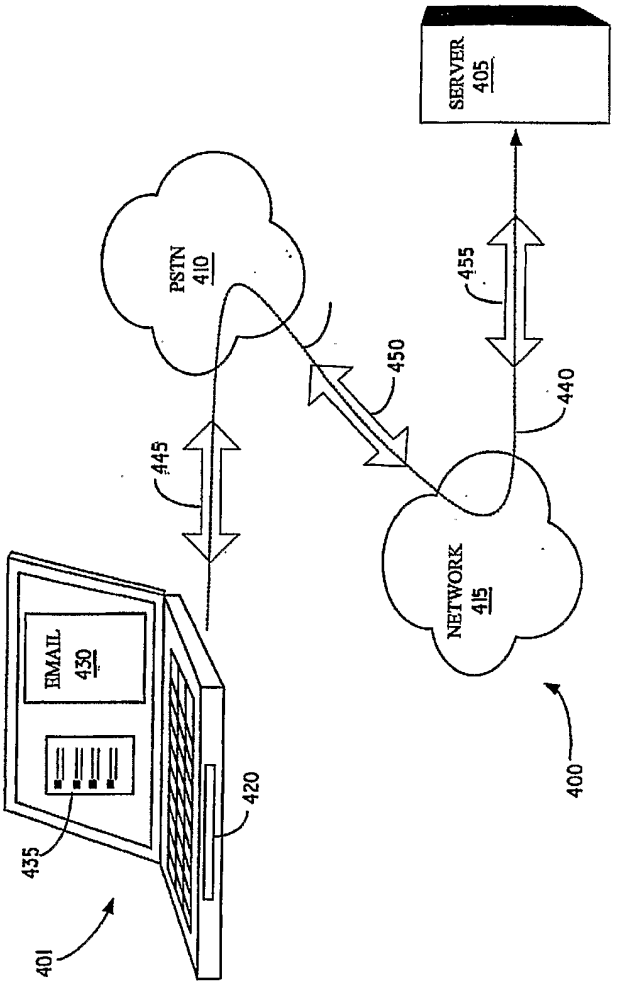
SERVER
405
PSTN
410
455
450
440
445
NETWORK
415
EMAIL
430
420
435
401
400

FIGURE 4B

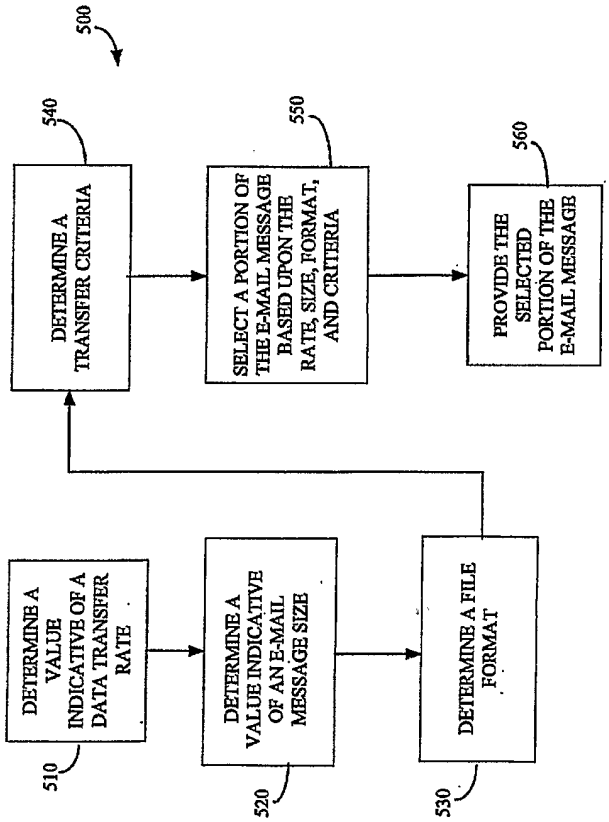
500
540
550
560
DETERMINE A TRANSFER CRITERIA
SELECT A PORTION OF THE E-MAIL MESSAGE BASED UPON THE RATE, SIZE, FORMAT, AND CRITERIA
PROVIDE THE SELECTED PORTION OF THE E-MAIL MESSAGE
DETERMINE A VALUE INDICATIVE OF A DATA TRANSFER RATE
DETERMINE A VALUE INDICATIVE OF AN E-MAIL MESSAGE SIZE
DETERMINE A FILE FORMAT
510
520
530

FIGURE 5A

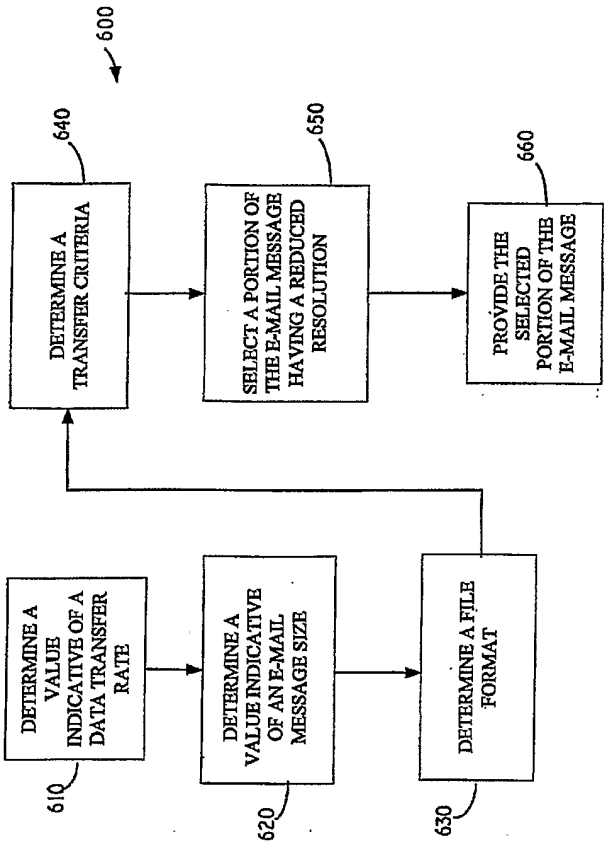
600
640
650
660
DETERMINE A TRANSFER CRITERIA
SELECT A PORTION OF THE E-MAIL MESSAGE HAVING A REDUCED RESOLUTION
PROVIDE THE SELECTED PORTION OF THE E-MAIL MESSAGE
DETERMINE A VALUE INDICATIVE OF A DATA TRANSFER RATE
DETERMINE A VALUE INDICATIVE OF AN E-MAIL MESSAGE SIZE
DETERMINE A FILE FORMAT
610
620
630

FIGURE 5B

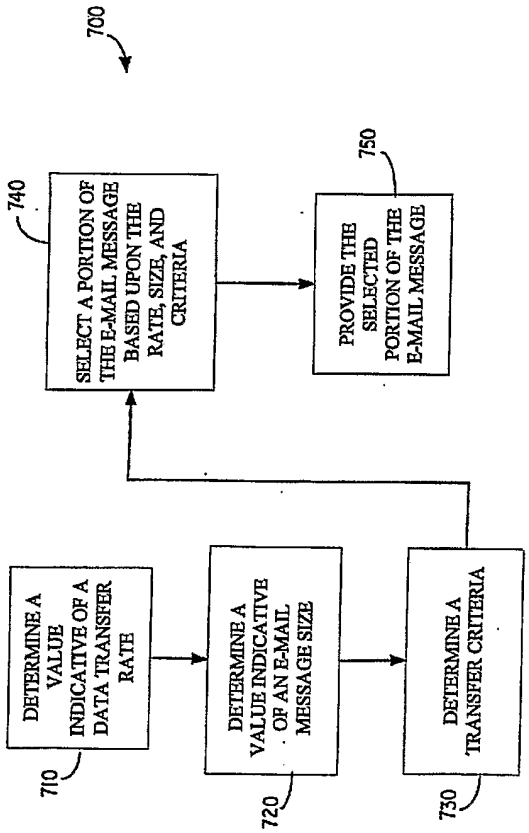
700
740
SELECT A PORTION OF THE E-MAIL MESSAGE BASED UPON THE RATE, SIZE, AND CRITERIA
750
PROVIDE THE SELECTED PORTION OF THE E-MAIL MESSAGE
DETERMINE A VALUE INDICATIVE OF A DATA TRANSFER RATE
710
DETERMINE A VALUE INDICATIVE OF AN E-MAIL MESSAGE SIZE
720
DETERMINE A TRANSFER CRITERIA
730

FIGURE 5C

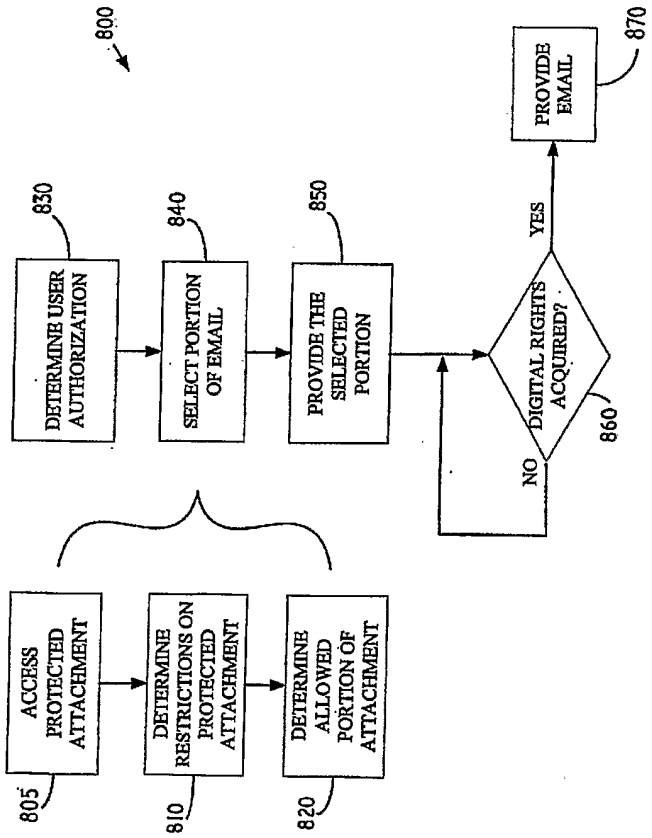
800
ACCESS PROTECTED ATTACHMENT
805
DETERMINE RESTRICTIONS ON PROTECTED ATTACHMENT
810
DETERMINE ALLOWED PORTION OF ATTACHMENT
820
DETERMINE USER AUTHORIZATION
830
SELECT PORTION OF EMAIL
840
PROVIDE THE SELECTED PORTION
850
DIGITAL RIGHTS ACQUIRED?
860
YES
NO
PROVIDE EMAIL
870

FIGURE 6

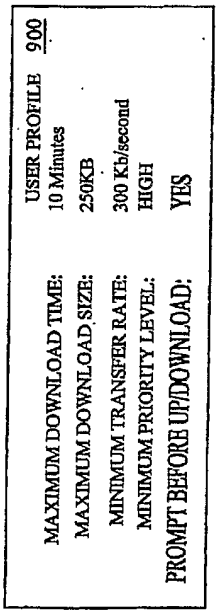

FIGURE 7A

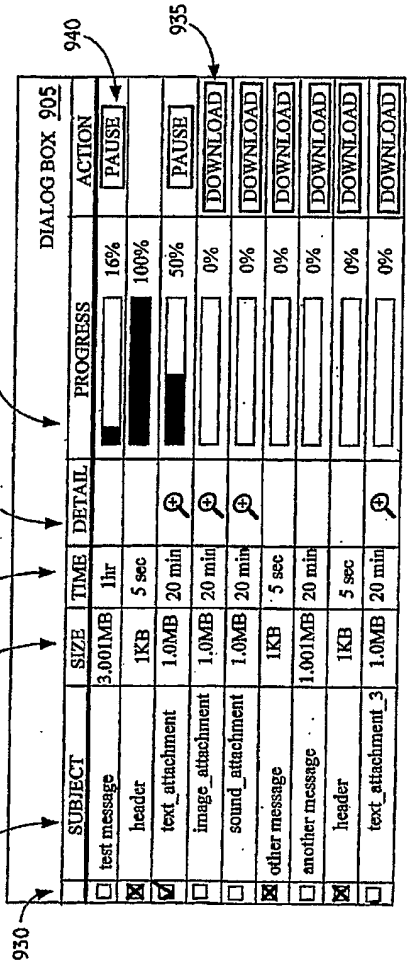

FIGURE 7B

USER PROFILE 1000	
MAXIMUM DOWNLOAD TIME:	10 Minutes
MAXIMUM DOWNLOAD SIZE:	250KB
MINIMUM TRANSFER RATE:	300 Kb/second
PROMPT BEFORE UP/DOWNLOAD:	YES

FIGURE 8A

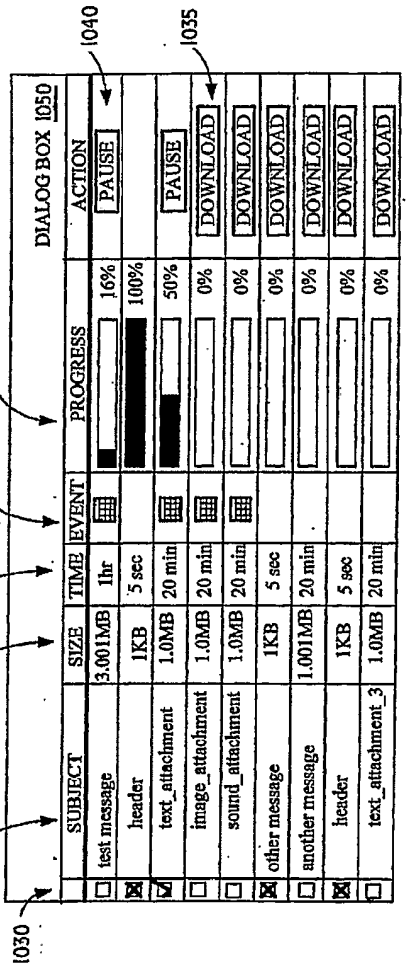

FIGURE 8B

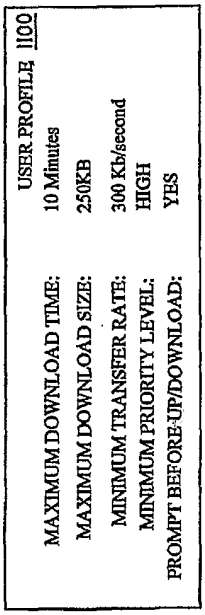

FIGURE 9A

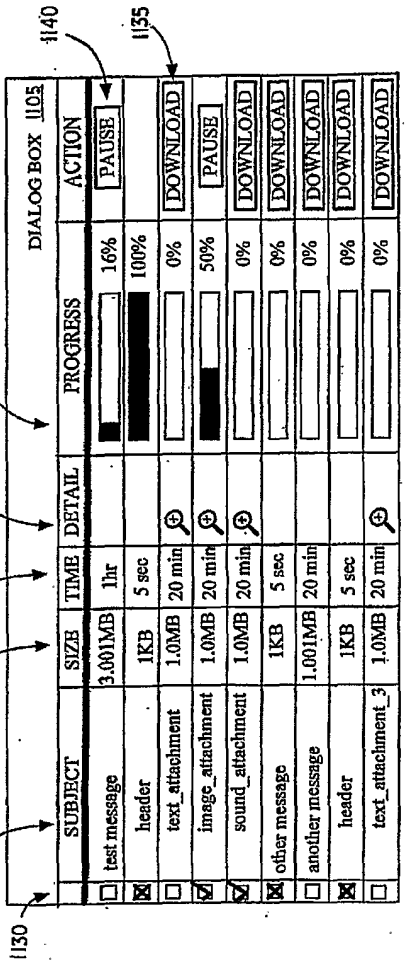

FIGURE 9B

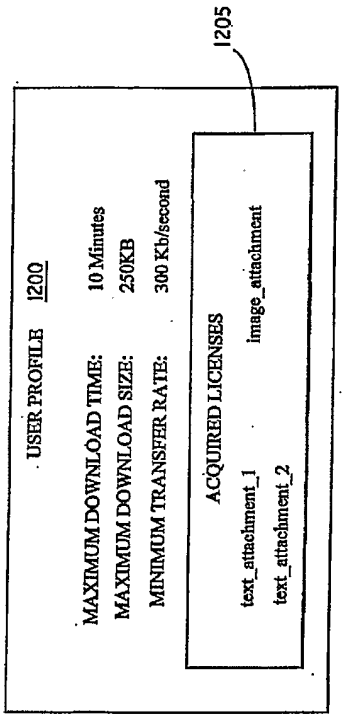
1205
USER PROFILE 1200
MAXIMUM DOWNLOAD TIME: 10 Minutes
MAXIMUM DOWNLOAD SIZE: 250KB
MINIMUM TRANSFER RATE: 300 Kb/second
ACQUIRED LICENSES
text_attachment_1
image_attachment
text_attachment_2

FIGURE 10A

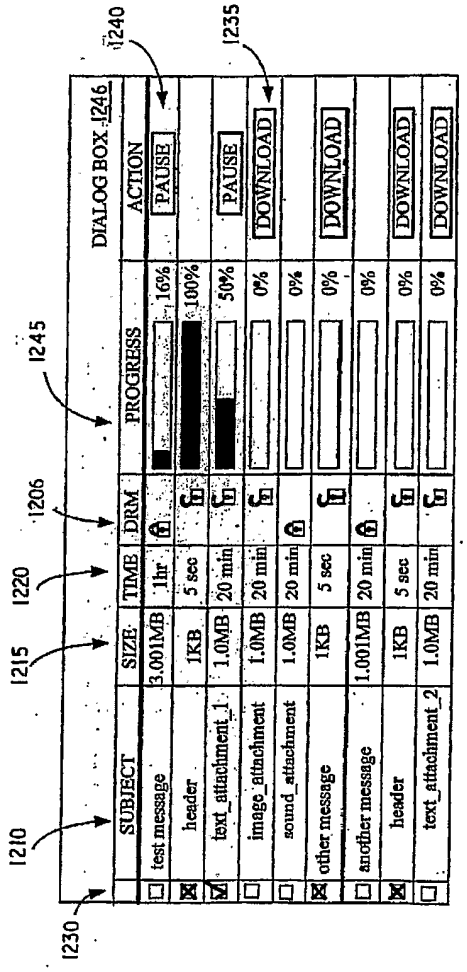
1210
1215
1220
1206
1245
1240
1235
1230
DIALOG BOX 1246
SUBJECT
SIZE
TIME
DRM
PROGRESS
ACTION
test message
3.001MB
1hr
16%
PAUSE
header
1KB
5 sec
100%
text_attachment_1
1.0MB
20 min
50%
PAUSE
image_attachment
1.0MB
20 min
0%
DOWNLOAD
sound_attachment
1.0MB
20 min
0%
other message
1KB
5 sec
0%
DOWNLOAD
another message
1.001MB
20 min
0%
header
1KB
5 sec
0%
DOWNLOAD
text_attachment_2
1.0MB
20 min
0%
DOWNLOAD

FIGURE 10B

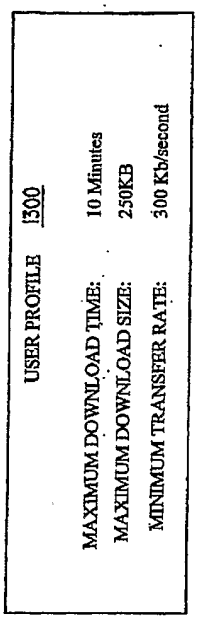

FIGURE IIA

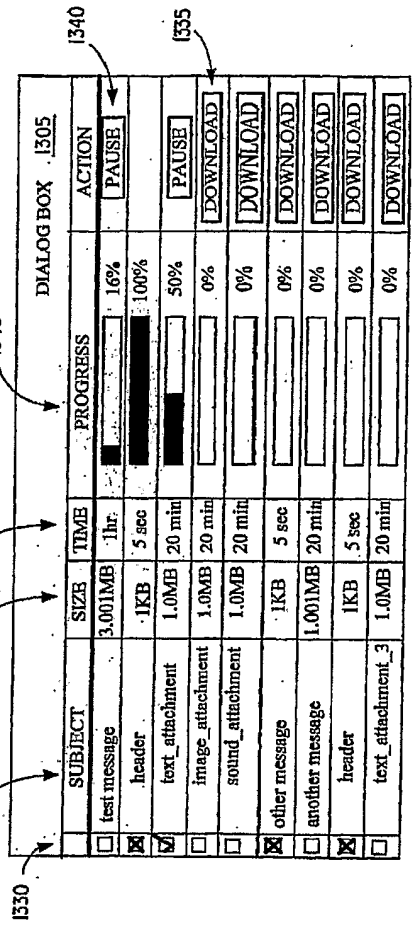

FIGURE IIB

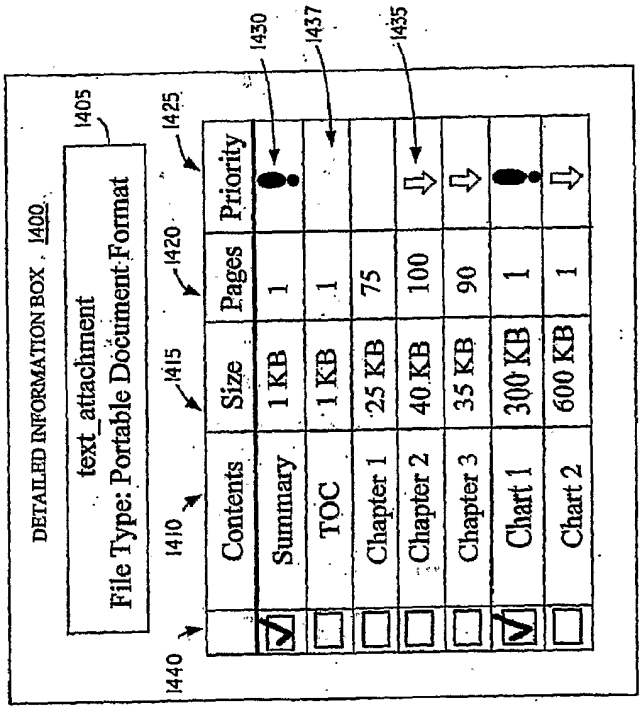
DETAILED INFORMATION BOX 1400
1405
text_attachment
File Type: Portable Document Format
1410
1415
1420
1425
1430
1435
1437
1440
Contents
Size
Pages
Priority
Summary
1 KB
1
TOC
1 KB
1
Chapter 1
25 KB
75
Chapter 2
40 KB
100
Chapter 3
35 KB
90
Chart 1
300 KB
1
Chart 2
600 KB
1

FIGURE 12

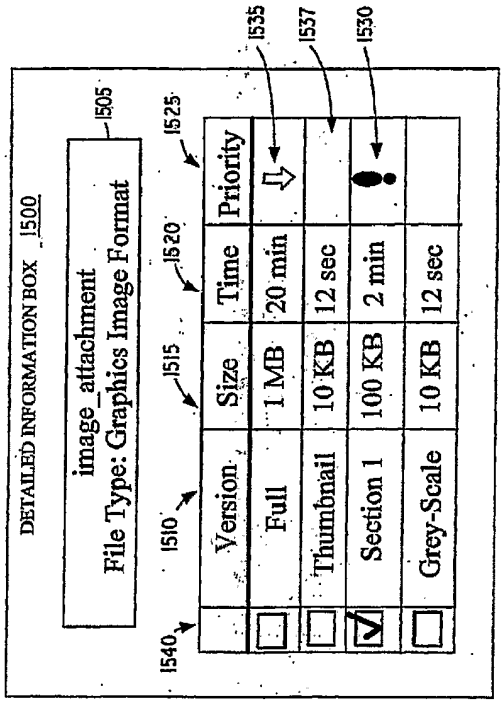
DETAILED INFORMATION BOX 1500
image_attachment
File Type: Graphics Image Format
1505
1510
1515
1520
1525
1530
1535
1537
1540
Version
Size
Time
Priority
Full
1 MB
20 min
Thumbnail
10 KB
12 sec
Section 1
100 KB
2 min
Grey-Scale
10 KB
12 sec

FIGURE 13

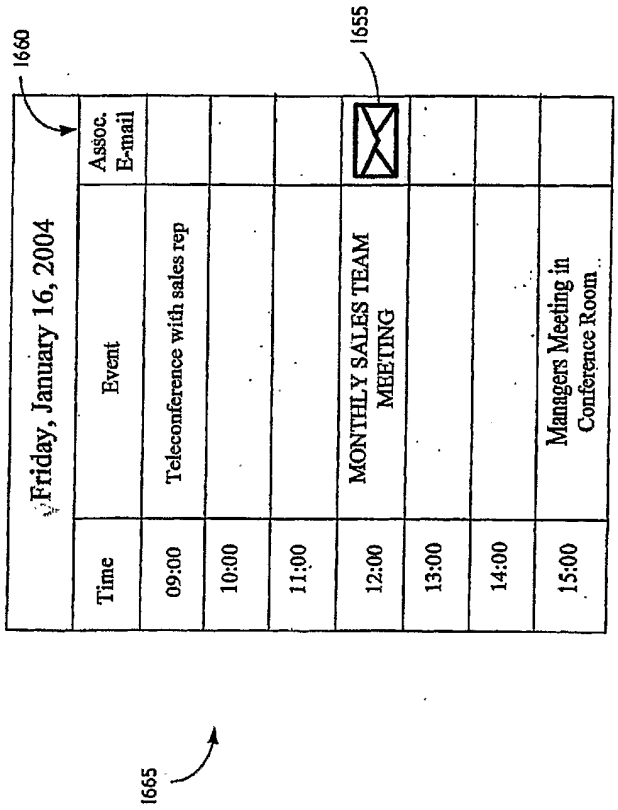
1660
1655
Friday, January 16, 2004
Time
Event
Assoc. E-mail
09:00
Teleconference with sales rep
10:00
11:00
12:00
MONTHLY SALES TEAM MEETING
13:00
14:00
15:00
Managers Meeting in Conference Room
1665

FIGURE 14

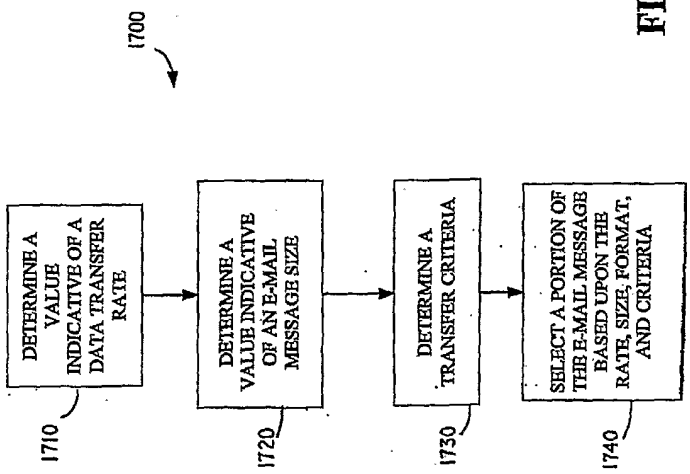
1700
DETERMINE A VALUE INDICATIVE OF A DATA TRANSFER RATE
1710
DETERMINE A VALUE INDICATIVE OF AN E-MAIL MESSAGE SIZE
1720
DETERMINE A TRANSFER CRITERIA
1730
SELECT A PORTION OF THE E-MAIL MESSAGE BASED UPON THE RATE, SIZE, FORMAT, AND CRITERIA
1740

FIGURE 15

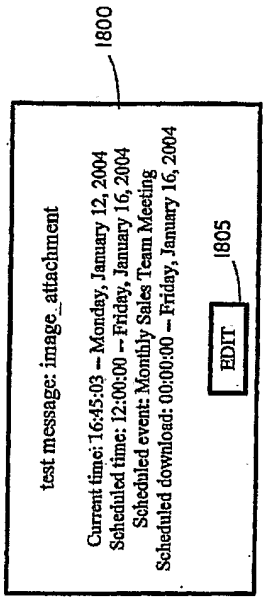

FIGURE 16

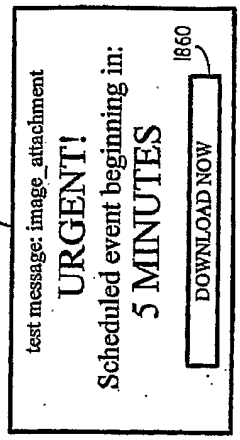

FIGURE 18

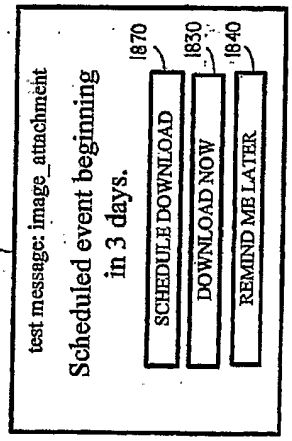

FIGURE 17

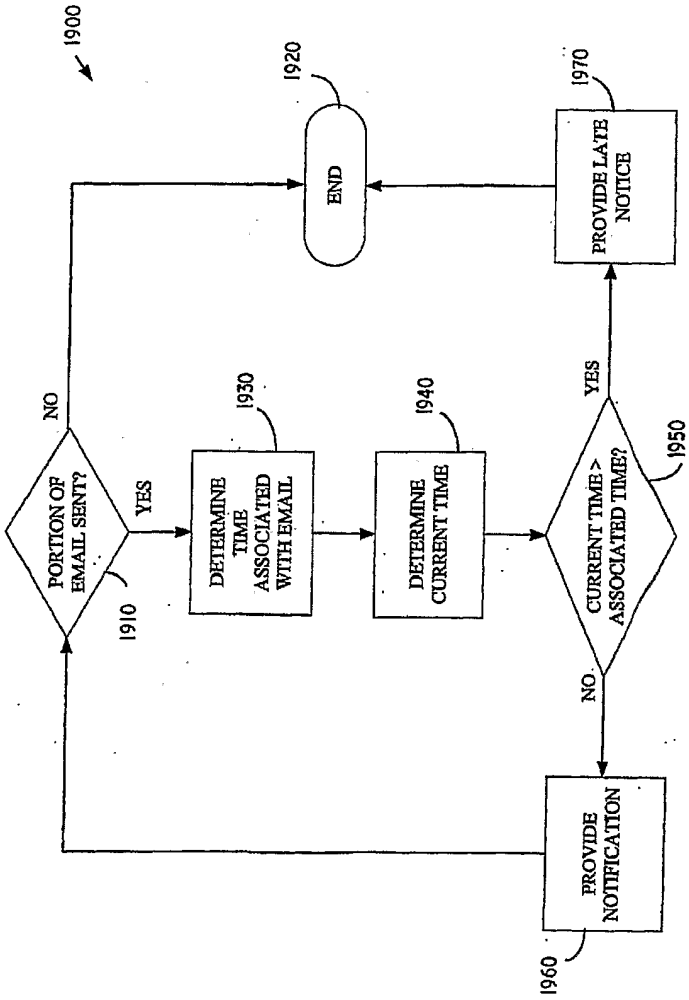
1900
1920
END
1970
PROVIDE LATE NOTICE
NO
PORTION OF EMAIL SENT?
1910
YES
1930
DETERMINE TIME ASSOCIATED WITH EMAIL
1940
DETERMINE CURRENT TIME
YES
CURRENT TIME > ASSOCIATED TIME?
1950
NO
PROVIDE NOTIFICATION
1960

FIGURE 19

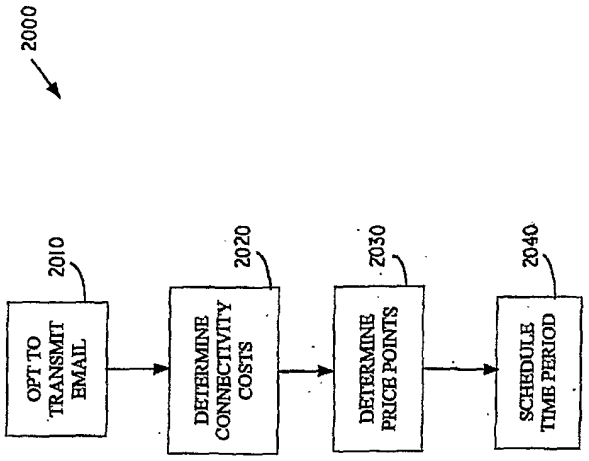
2000
2010
OPT TO TRANSMIT EMAIL
2020
DETERMINE CONNECTIVITY COSTS
2030
DETERMINE PRICE POINTS
2040
SCHEDULE TIME PERIOD

FIGURE 20

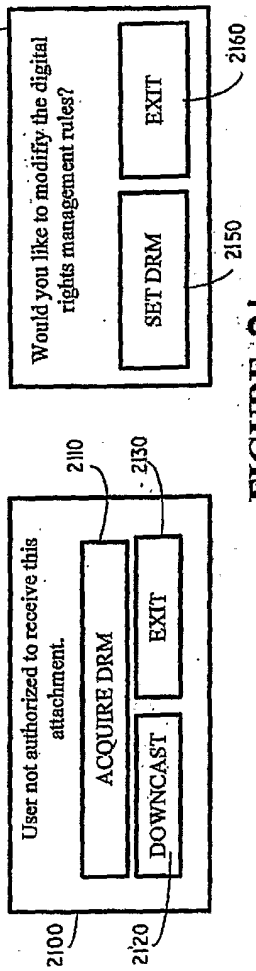
2140
Would you like to modify the digital rights management rules?
2160
EXIT
2150
SET DRM
2110
2130
User not authorized to receive this attachment.
ACQUIRE DRM
EXIT
DOWNCAST
2100
2120

FIGURE 21

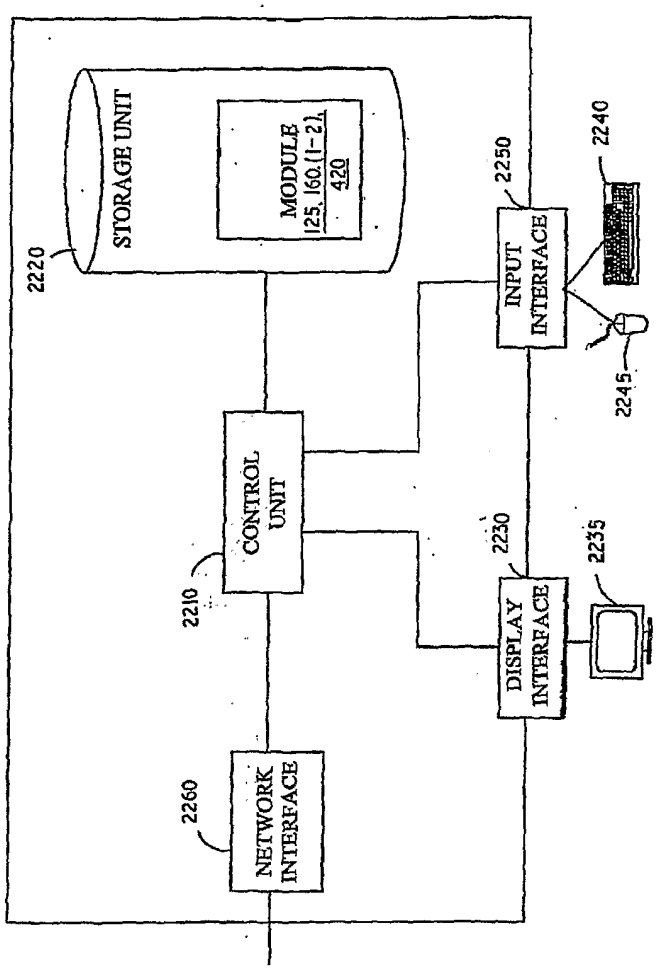
STORAGE UNIT
MODULE 125, 160, 1-21, 420
2220
CONTROL UNIT
2210
NETWORK INTERFACE
2260
INPUT INTERFACE
2250
2240
2245
DISPLAY INTERFACE
2230
2235

FIGURE 22