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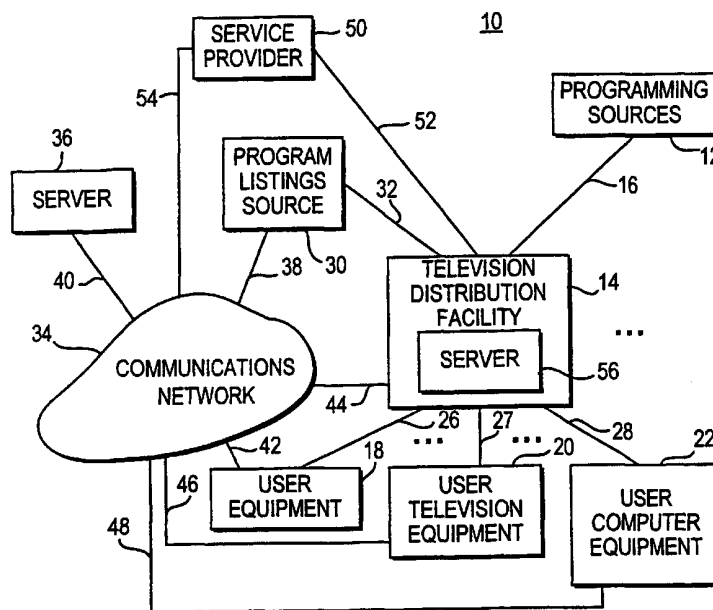
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(54) Title: INTERACTIVE TELEVISION SYSTEMS WITH LIVE CUSTOMER SERVICE



(57) Abstract: A system is provided in which users may obtain live customer service when using an interactive television application. The system may distribute television programming to users through a television distribution facility such as a television cable system headend, a satellite system or a broadcast system. The television programming may be received at user equipment. The user equipment may be user television equipment based, for example, on a set-top box or digital video recorder. The user equipment may also be user computer equipment. The user may request help by pressing a remote control help key or by selecting an on-screen option. The help that is presented may relate to the type of interactive television application that was being used when help was requested.



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INTERACTIVE TELEVISION SYSTEMS
WITH LIVE CUSTOMER SERVICE

Background of the Invention

5 This invention relates to television systems,
and more particularly, to interactive television
systems that allow users to obtain live customer
service.

 Interactive television systems can be
10 complex. Such systems may present challenges for a
typical user. For example, a user may not know how to
use certain commands.

 In certain applications such as interactive
television program guides, electronic help is available
15 in the form of pop-up text help messages.

 It is an object of the present invention to
provide improved arrangements for presenting help to
users in interactive television applications.

Summary of the Invention

20 In accordance with the present invention, a
system is provided in which users may obtain live

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customer service when using an interactive television application. The interactive television application may be an interactive television program guide application, a home shopping application, video-on-
5 demand application, news service application, Internet service application, interactive wagering services (e.g., for wagering on horse races and the like), communications services (e.g., e-mail, chat, etc.), a
10 nav shell (e.g., an application that presents a menu overlay or interface to assist the user in selecting from various available interactive television applications), or any other suitable interactive applications.

The system may distribute television
15 programming to users through a television distribution facility such as a television cable system headend, a satellite system or a broadcast system. The television programming may be received at user equipment. The user equipment may be user television equipment based,
20 for example, on a set-top box or digital video recorder. The user equipment may also be user computer equipment.

The user equipment may receive information using the same communications paths that are used to
25 receive television programming. The user equipment may also receive information (text, graphics, audio, and videos) using separate data paths (e.g., Internet paths or other such communications paths).

The user may request help by pressing a
30 remote control help key or by selecting an on-screen option. The on-screen option may be provided on any suitable screen provided by the interactive television

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application. For example, the on-screen option may be provided using a main menu screen, a program listings screen, a program guide information screen, a home shopping screen, etc.

5 The help that is presented may relate to the type of interactive television application that was being used when help was requested. For example, if the television program guide was being viewed or run in the background or otherwise being used, pressing the
10 help key or selecting the help on-screen option will cause the help menu for interactive television program guide to be displayed.

 The help information that is displayed may contain text, graphics, audio, and video. Text may be
15 presented in the form of answers to a list of commonly asked questions. If desired, selecting an entry in the displayed list of questions may cause additional help information to be displayed. The additional
20 information may include text, graphics, audio, and video.

 If desired, the user may contact a live customer service representative. When the user invokes help (e.g., using a remote control button or on-screen
25 option), a real-time communications link may be established between the user and a customer service representative. The user may receive information from the customer service representative in real time as video, graphics (e.g., diagrams), audio, or text. The
30 user may respond using text, audio (e.g., using a microphone), and video (e.g., using a video camera). The user may also communicate with the customer service representative using e-mail or the like.

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Further features of the invention, its nature and various advantages will be more apparent from the accompanying drawings and the following detailed description of the preferred embodiments.

5 Brief Description of the Drawings

FIG. 1 is a diagram of an illustrative interactive television system in accordance with the present invention.

10 FIG. 2 is a diagram of illustrative user television equipment in accordance with the present invention.

FIG. 3 is a diagram of additional illustrative user television equipment in accordance with the present invention.

15 FIG. 4 is a diagram of an illustrative remote control in accordance with the present invention.

FIG. 5 is a diagram of illustrative user computer equipment in accordance with the present invention.

20 FIG. 6 is a generalized diagram of illustrative user equipment in accordance with the present invention.

FIG. 7 shows an illustrative menu screen in accordance with the present invention.

25 FIG. 8 shows an illustrative program guide screen in accordance with the present invention.

FIG. 9 shows an illustrative help screen that may be displayed in accordance with the present invention.

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FIG. 10 shows illustrative screens that may be provided to present users with answers to common questions in accordance with the present invention.

FIG. 11 shows an illustrative screen that may be used to provide a user with an opportunity to send an e-mail message to customer service in accordance with the present invention.

FIG. 12 shows an illustrative screen that may be used to allow a user to search for help information in accordance with the present invention.

FIG. 13 is an illustrative screen that may be provided to the user that contains video and text help information in accordance with the present invention.

FIG. 14 is a flow chart of illustrative steps involved in providing the user with customer service assistance and other help features in accordance with the present invention.

Detailed Description of the Preferred Embodiments

An illustrative interactive television system in accordance with the present invention is shown in FIG. 1. Television programming may be provided from programming sources 12 to television distribution facilities such as television distribution facility 14 using communications path 16. Programming sources 12 may be any suitable sources of television programming, such as television production studios, etc.

Television distribution facility 14 may be a cable system headend, a satellite television distribution facility, a television broadcast facility, or any other suitable facility for distributing television programming. There are typically numerous

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television distribution facilities 14 in system 10, but only one is shown in FIG. 1 to avoid overcomplicating the drawings.

Communications path 16 may be a satellite
5 path, a fiber-optic path, a cable path, or any other suitable communications paths or combinations of such paths.

Television distribution facility 14 may be connected to various user equipment devices 18. Such
10 user equipment 18 may, for example, be located in the homes of users. User equipment 18 may include user television equipment 20 or user computer equipment 22.

The user equipment may receive television programming and other information from television
15 distribution facility 14 over communications paths such as communications paths 26, 27, and 28. The user equipment may also transmit signals to television distribution facility 14 over paths 26, 27, and 28. Paths 26, 27, and 28 may be cables, free-space
20 connections (e.g., for broadcast signals), telephone links, satellite links, etc.

Program listings source 30 may be used to provide the user with television program schedule information such as scheduled broadcast times, titles,
25 channels, ratings information (e.g., parental ratings and critic's ratings), detailed title descriptions, information on actors and actresses, running times, etc.

Program listings source 30 may provide
30 program schedule information to television distribution facility 15 over communications path 32 for distribution to the associated user equipment over

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paths 26, 27, and 28. Communications path 32 may be any suitable communications path such as a satellite communications path, a fiber-optic or wired communications path, etc.

5 User equipment devices such as user television equipment and personal computers may use the program schedule information to access program listings of interest to the user. An interactive television program guide application or other suitable application
10 may be used to display program listings on the user's display.

 If desired, program listings source 30 may distribute program schedule information to user equipment 18, user television equipment 20, and user
15 computer equipment 22 over communications path 38, communications network 34, and communications paths 42, 46, and 48. Communications network 34 may be any suitable communications network, such as the Internet, the public switched telephone network, a packet-based
20 network, a paging network, etc.

 An on-line program guide may be provided by a server connected to communications network 34 such as server 36. Server 36 may receive program schedule information from program listings source 30 via
25 communications path 38, communications network 34, and communications path 40. Paths 38 and 40 may be satellite paths, fiber-optic paths, wired paths, wireless paths, etc.

 User equipment 18 may access the on-line
30 program guide via communications path 42, which may be any suitable communications path such as a wired path, a cable path, fiber-optic path, satellite path, a

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combination of such paths, or any other suitable path. User equipment 18 may also access the on-line program guide via communications path 26, television distribution facility 14, and communications path 44.

5 For example, a cable modem or the like may be used by user equipment 18 to communicate with television distribution facility 14. Television distribution facility 14 may communicate with communications network 34 over any suitable path 44, such as a wired path, a

10 cable path, fiber-optic path, satellite path, a wireless path, a combination of such paths, etc.

User equipment such as user television equipment 20 and user computer equipment 22 may access the on-line program guide using similar arrangements.

15 User television equipment 20 may access the on-line program guide using communications path 46 or using path 27, television distribution facility 14, and path 44. User computer equipment 22 may access the on-line program guide using communications path 38 or using

20 path 28, television distribution facility 14, and path 44. Paths 46 and 48 may be any suitable paths, such as wired paths, cable paths, fiber-optic paths, satellite paths, a wireless path, a combination of such paths, etc.

25 Interactive television applications other than program guide applications may use service providers such as service provider 50. For example, a home shopping service may be supported by a service provider such as service provider 50 that has sales

30 representatives, order fulfillment facilities, account maintenance facilities, and other equipment for supporting interactive home shopping features. A home

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shopping application that is implemented using the user equipment may be used to access the service provider to provide these features to the user. The user equipment may access service provider 50 via television
5 distribution facility 14 and communications path 52 or via communications network 34 and communications path 54. Communications paths such as paths 52 and 54 may be any suitable paths, such as wired paths, cable paths, fiber-optic paths, satellite paths, a
10 combination of such paths, etc.

Another example of an interactive television application is a home banking application. A home banking service may be supported using personnel at facilities such as service provider 50. An interactive
15 home banking application that is implemented using the user equipment may access the home banking service via television distribution facility 14 and communications path 52 or via communications network 34 and communications path 54.

20 The interactive television program guide application, the home banking application, and the home shopping application are only a few illustrative examples of the types of interactive television applications that may be supported by system 10. Other
25 suitable applications that may be supported include video-on-demand, news services, Internet services, interactive wagering services (e.g., for wagering on horse races and the like), communications services (e.g., e-mail, chat, etc.), and any other suitable
30 interactive applications.

These applications may be implemented locally on the user equipment. The applications may also be

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implemented using a client-server architecture in which the user equipment serves as a client processor and a server such as server 56 at television distribution facility 14 or other suitable location acts as a server processor. Other distributed architectures may also be used if desired. Regardless of the particular arrangement used to implement interactive television features related to program guides, home shopping, home banking, video-on-demand, Internet, communications, etc., the software that supports these features may be referred to as an application.

Illustrative user television equipment that is based on a set-top box arrangement is shown in FIG. 2. Input/output 58 may be connected to communications paths such as paths 27 and 46. Television programming and other information may be received using input/output 58. Commands and requests and other information from the user may also be transmitted over input/output 58.

Set-top box 60 may be any suitable analog or digital set-top box. Set-top box 60 may contain an analog tuner for tuning to a desired analog television channel. Set-top box 60 may also contain digital decoding circuitry for receiving digital television channels. Both analog and digital channels may be handled together if desired. Set-top box 60 also contains a processor (e.g., a microcontroller or microprocessor or the like) that is used to execute software applications. Set-top box 60 may contain memory such as random-access memory for use when executing applications. Nonvolatile memory may also be used (e.g., to launch a boot-up routine and other

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instructions). Hard disk storage may be used to back up data and to otherwise support larger databases than may be supported using random-access memory approaches.

Set-top box 60 may have infrared (IR) or
5 other communications circuitry for communicating with a remote control. Set-top box 60 may also have dedicated buttons and a front-panel display. The front-panel display may, for example, be used to display the current channel to which the set-top box is tuned.

10 Set-top box 60 may also have communications circuitry such as a cable modem, an integrated services digital network (ISDN) modem, a digital subscriber line (DSL) modem, a telephone modem, etc. for communications with other equipment. Such communications may involve
15 the Internet or any other suitable communications networks or paths.

An optional videocassette recorder 62 or other suitable recording device may be connected to set-top box 60. This allows videos from set-top box 60
20 to be recorded. For example, if set-top box 60 is tuned to a given television channel, the video signal for that television channel may be passed to videocassette recorder 62 for recording on a videocassette. If desired, videocassette recorder
25 functions such as start, stop, record, etc. may be controlled by set-top box 60. For example, set-top box 60 may control videocassette recorder 62 using infrared commands directed toward the remote control inputs of videocassette recorder 62.

30 The output of videocassette recorder 62 may be provided to television 64 for display to the user. If videocassette recorder 62 is not being used, the

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video signals from set-top box 58 may be provided directly to television 64. If desired, any suitable monitor may be used to display the video.

Another illustrative arrangement for user television equipment 20 is shown in FIG. 3. In the example of FIG. 3, user television equipment 20 includes a digital video recorder 66 and a television 68. Input/output 70 may be connected to communications paths such as paths 27 and 46. Television programming and other information may be received using input/output 70. Commands and requests and other information from the user may be transmitted over input/output 70.

Digital video recorder 66 may be similar to a standard set-top box, except that a hard disk or other suitable storage medium may be used for video storage in lieu of videocassettes. The hard disk may be internal to digital video recorder 66.

Digital video recorder 66 may contain an analog tuner for tuning to a desired analog television channel. Digital video recorder 66 may also contain an encoder (e.g., an MPEG encoder) for converting analog television programming or the like into digital signals for storage. Digital video recorder 66 may contain digital decoding circuitry for receiving digital television channels. If desired, digital video recorder 66 may contain circuitry for handling both analog and digital channels. Digital video recorder 66 also contains a processor (e.g., a microcontroller or microprocessor or the like) that is used to execute software applications. Digital video recorder 66 may contain memory such as random-access memory for use

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when executing applications. Nonvolatile memory may also be used to store a boot-up routine or other instructions. The hard disk and other storage in digital video recorder 66 may be used to support
5 databases (e.g., program guide databases or interactive television application databases).

Digital video recorder 66 may have IR communications circuitry or other suitable communications circuitry for communicating with a
10 remote control. Digital video recorder 66 may also have dedicated buttons and a front-panel display. The front-panel display may, for example, be used to display the current channel to which the digital video recorder is tuned.

15 Digital video recorder 66 may also have communications circuitry such as a cable modem, an integrated services digital network (ISDN) modem, a digital subscriber line (DSL) modem, a telephone modem, etc. for communications with other equipment. Such
20 communications may involve the Internet or any other suitable communications networks or paths.

Television programming may be recorded on the hard disk of digital video recorder 66. Digital video recorder 66 may record new video while previously
25 recorded video is being played back on television 68. This allows users to press a pause button during normal television viewing. When the pause button is pressed, the current television program is stored on the hard disk of digital video recorder 66. When the user
30 presses play, the recorded video may be played back. This arrangement allows the user to seamlessly pause and resume television viewing.

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The set-top box arrangement of FIG. 2 and the digital video recorder set-top box arrangement of FIG. 3 are merely illustrative. Other arrangements may be used if desired. For example, user television
5 equipment may be based on a WebTV box, a personal computer television (PC/TV), or any other suitable television equipment arrangement. If desired, the functions of components such as set-top box 60, digital video recorder 66, a WebTV box, or PC/TV or the like
10 may be integrated into a television or personal computer or other suitable device.

An illustrative remote control 72 for operating user television equipment 20 is shown in FIG. 4. Remote control 72 may have keys 74 such as channel
15 up and down keys, a power on/off key, numeric keys, a favorites key (e.g., for setting favorites in a program guide application or other interactive television application), an info key (for requesting that additional information on a selection be displayed),
20 etc. Arrow keys 76 may be used to position an on-screen cursor or highlight region on options of interest. Highlighted options may be selected using OK key 78. Menu key 80 may be used to direct an interactive television application (e.g., a program
25 guide application, a nav shell application, or any other suitable application) to display a menu of available options.

Help key 82 may be used to invoke help functions such as live customer service. access to a
30 help database, etc.

Illustrative user computer equipment 22 is shown in FIG. 5. In the arrangement of FIG. 5,

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personal computer 84 may be controlled by the user using keyboard 86 or other suitable user input device, such as a trackball, mouse, touch pad, touch screen, voice recognition system, etc. Television programming and interactive television application content may be displayed on monitor 88. Television programming and other information may be received from paths 28 and 48 (FIG. 1) using input/output 90. The user may also send commands and other information to remote services over input/output line 90.

Personal computer unit 84 may contain a television tuner card for decoding analog and digital television channels. The television tuner card may contain an analog tuner for tuning to a given analog channel and digital decoding circuitry for filtering out a desired digital channel from a packetized digital data stream.

The user computer equipment arrangement of FIG. 5 is merely illustrative. Any suitable computer equipment arrangement may be used if desired.

Moreover, the user television equipment and user computer equipment arrangements described above are merely illustrative. A more generalized embodiment of illustrative user equipment is shown in FIG. 6.

As shown in FIG. 6, control circuitry 92 is connected to input/output 94. Input/output 94 may be connected to communications paths such as paths 26, 27, 28, 42, 46, and 48 of FIG. 1. Television programming may be received via input/output 94 (e.g., from programming sources 12 and television distribution facility 14). Program schedule information for an interactive television program guide may also be

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received via input/output 94. Input/output 94 may also be used to receive information for other interactive television applications. The user may use control circuitry 92 to send commands, requests, and other
5 suitable information using input/output 94.

Control circuitry 94 may be based on any suitable processor such as a microprocessor, microcontroller, etc. Memory or other suitable storage devices may be provided as part of control circuitry
10 94.

Television programming and on-screen options and information may be displayed on display 100. Display 100 may be a monitor, a television, or any other suitable equipment for displaying visual images.
15 Speakers 102 may be provided as part of a television or may be stand-alone units. The audio component of videos displayed on display 100 may be played through speakers 102.

A user may control the control circuitry
20 using user input interface 96. The user input interface may be any suitable user interface, such as a mouse, trackball, keypad, keyboard, touch screen, touch pad, or any other suitable user input interface. A microphone 98 and video camera 104 may be used to
25 supply audio and video information to control circuitry 92.

A user of user equipment 18 (e.g., a user of user television equipment or a user of user computer equipment, or a user of any other suitable user
30 equipment device) may invoke an interactive television menu by pressing menu button 80 (FIG. 4). An illustrative interactive television menu 106 is shown

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in FIG. 7. Remote control 72 (FIG. 4) may be used to position highlight region 108 on top of options 110, 112, 114, 116, and 118. If the user selects option 110, a screen of program listings may be displayed.

5 Option 112 may be used to invoke a home shopping application. Option 114 may be selected to display options related to video-on-demand services. If the user selects option 116, the user may be presented with an opportunity to access home banking functions.
10 Selecting Internet option 118 may launch a web browser or the like.

The user may navigate to help option 120 using arrow keys 76 (FIG. 4). When help option 120 is selected, the user may be presented with on-line help,
15 access to a help database, live help from customer service representatives, etc.

An illustrative program guide screen 122 that may be displayed for the user is shown in FIG. 8.

Program guide screen 122 may be displayed, for example,
20 when the user selects program listings option 108 (FIG. 7). Program guide screen 122 may contain a grid or list of program listings 124. Program listings 124 may include program titles, channel, scheduled broadcast times, and any other suitable program schedule
25 information. Advertisements may be displayed if desired.

A highlight region such as highlight region 126 may be used to select a desired program listing. If the user presses an OK key when a program listing
30 for a current program is highlighted, the program guide may tune to the channel for that program. If the user presses an OK key when a program listing for a future

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program is highlighted, the program guide may provide the user with an opportunity to set a reminder for that program. Other functions that the program guide may provide include the ability to set favorites (e.g.,
5 favorite programs, favorite channels, etc.), the ability to establish parental control settings, the ability to search for programming of interest, and the ability to view program descriptions, advertisements, text, graphics, audio, and video, etc. These are
10 merely illustrative examples of program guide functions that may be provided by an interactive television program application. Any other suitable program guide functions may be provided if desired. The program guide may be invoked from an option such as option 110
15 of FIG. 7, by pressing a dedicated guide button on a remote control, by selecting any other suitable button or on-screen option, etc.

The user may position highlight region 126 on help option 128 using remote control keys 76. If the
20 user presses OK while help option 128 is highlighted, the user may be presented with help information such as interactive help information involving a live customer service representative, etc. Help options such as help option 128 may be provided on any suitable program
25 guide screen. When the user selects a help option from a program guide screen or when the user presses a help button when the user is in the program guide application, the help that is provided may automatically be related to program guides.

30 Selecting a help button or option when the user is using another interactive television application may cause help to be displayed that is

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related to that interactive television application. For example, if the user selects a help option when the user is using a home banking application, help related to the home banking service may be provided. The user
5 may be provided with text, graphics, and video related to home banking and may be provided with an opportunity to interact with a live customer service representative at the service provider facility of the home banking service.

10 Program guide applications and home banking applications are merely illustrative examples of suitable interactive television applications for which help may be provided. Other suitable applications include home shopping, video-on-demand, news services,
15 Internet services, interactive wagering services (e.g., for wagering on horse races and the like), communications services (e.g., e-mail, chat, etc.), etc.

 When the user invokes help when using an
20 interactive television application (e.g., by selecting option 120, option 128, or button 82), a screen such as screen 130 of FIG. 9 may be displayed. Highlight region 132 may be positioned on top of an option such as option 134. Option 134 may provide the user with an
25 opportunity to access answers to commonly asked questions. Option 136 may provide the user with an opportunity to invoke an e-mail application and send e-mail to a service provider associated with the interactive television application. Search index
30 option 138 may be used to provide the user with an opportunity to search the help index of a help database

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for an item of interest. Option 140 may be used to connect the user to a customer service representative.

If the user selects option 134 of FIG. 9, the user may be presented with a screen such as screen 142 of FIG. 10. As shown in the upper half of FIG. 10, screen 142 may initially include a title 144 (e.g., "answers to common questions") and a text region 146 in which the questions are displayed and in which the answers are displayed or links to the answers are displayed. Some of the text may be noninteractive text on common questions and their corresponding answers. If desired, some of the text may be selectable or may be placed adjacent to selectable icons or other such options 148.

If the user makes a selection of an option 148, the user may be presented with answers in audio form or may be presented with a screen such as the screen shown in the lower portion of FIG. 10. Such a screen may include, for example, a video clip on a common problem that is displayed in video clip region 150. Such a screen may also include an information region such as information region 152, which may include help text, graphics, and video. The help information displayed in regions 150 and 152 and the help information text displayed in region 146 may be related to the interactive television application that was active or otherwise being used or selected by the user when the help function was invoked.

An illustrative screen that may be presented to the user when the user selects send e-mail to us option 136 of FIG. 9, is shown in FIG. 11. Screen 154 may have an address line such as address line 156 that

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is preaddressed to the appropriate customer service e-mail address. Screen 154 may also have a subject line such as subject line 158 that the user may fill in to specify the subject of the message. The user may enter
5 the body of the e-mail message in region 160. When the user has finished addressing and composing the desired e-mail message, the may select send option 162 to send the e-mail to the appropriate service representative.

Screens may be presented to the user that
10 allow the user to create e-mail messages. Such screens may include a form to be filled in by the user. The form may include selectable options and regions into which the user may enter information. The interactive television application may automatically attach
15 information to the e-mail messages. The attached information may include information regarding the user, the user's equipment, the interactive television application, the user's current environment, and relevant information from the interactive television
20 application such as error messages, etc.

Screens such as screen 11 that involve the entry of text by the user may be completed by the user using a personal computer or other computer equipment that has a keyboard. User television equipment with a
25 wireless keyboard may also be used. If desired, user equipment may be used that does not have a separate keyboard. With such arrangements, text may be entered using an on-screen keyboard in which the user selects letters by highlighting each desired letter from a list
30 of all of the letters of the alphabet and pressing the OK key. Text may also be entered using remote control

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keys such as remote control keys 76 to cycle through the letters of the alphabet one at a time.

An arrangement such as this is shown in FIG. 12. Screen 164 of FIG. 12 may be displayed when, for example, the user selects option 138 of FIG. 9. Character cells 166 may be provided in which the user can select the desired letters for a search string. In the example of FIG. 12, the user has already selected the letter "B" in the first cell and is in the process of selecting the desired letter for the second cell. Arrows 168 indicate that the user may use up and down arrows to cycle through the letters of the alphabet to select a given letter. Arrows 168 also indicate the left remote control arrow key may be used to move back to the first cell and that the right remote control arrow key may be used to advance to the next cell.

Audio may be presented to the user and text 170, graphics 172, and video 174 may be displayed in help information region 176 when an entry in a help database is located that matches the search string entered in cells 166. If desired, the user may first be presented with a list of matches from which the user may select a desired help topic before being presented with appropriate help information. The help database may be maintained locally (e.g., on user equipment 18) or may be maintained remotely (e.g., on server 56 or other suitable server that may be accessed by user equipment 18). If desired, the information in help region 176 may be displayed immediately as each letter is entered. As each additional letter is added, the information in region 176 is updated to reflect the current string. Alternatively, the information in help

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region 176 may be updated when the user presses an OK key or the like after having entered a desired search string in cells 166.

The audio that is presented may describe how
5 a user may use particular features of the interactive television application. Text 170 may be a written description of how to use a given interactive television application feature. Graphics 172 may contain a diagram showing which buttons to push or what
10 order certain buttons should be pushed in to perform the given feature. Video 174 may contain a video clip showing how to use the given feature.

If the user selects option 140, the user may be presented with a screen such as screen 178 of FIG.
15 13. Screen 178 may contain a live video 180 of a customer service representative. The customer service representative may be located at service provider 50, television distribution facility 14, server 36, or any other suitable location. The video of the customer
20 service representative may be provided to the user equipment in real time over the communications paths of FIG. 1.

While the video 180 of the customer service representative is being displayed, the user may ask the
25 customer service representative a question. For example, the user may speak into microphone 98 (FIG. 6) to ask the question. The user may also type a question into interactive text region (e.g., using a keyboard). If desired, the customer service representative may
30 respond by typing a message that is presented in region 182. Video camera 104 (FIG. 6) may be used to transmit a video of the user to the customer service

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representative. In this way, the user may use user equipment 18 to make a video call with the customer service representative.

These features enhance the ability of a
5 service provider to provide timely customer service to the user. If desired, any of these approaches for interacting with a live customer service representative may be used alone or in combination. As an example, the user may interact with the customer service
10 representative using audio only, may interact with the customer service representative using audio and video and text, or may interact with the customer service representative using text only, etc. Moreover, the user may ask questions using one format (e.g., text
15 only or audio) whereas the customer service representative may respond using another format (e.g., video, audio and video, or audio only).

Illustrative steps involved in providing help to the user are shown in FIG. 14. At step 184, the
20 user may be provided with an opportunity to use a remote control or an on-screen option to request customer service or help. At step 186, after the user has requested assistance, the user may be provided with help. Help may be provided as text, graphics, audio,
25 video, or any suitable combination of such media. Help may involve selecting from answers to commonly asked questions. Help may also involve interacting with a live customer service representative in real time. When the user requests help, the user equipment may
30 automatically establish a live communications link with the customer service representative. The user may interact with the live customer service representative

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using audio, interactive text, or audio and video. A combination of these approaches may be used. Moreover, the user may use one approach (e.g., text) whereas the customer service representative may use another
5 approach (e.g., video). Any suitable protocols may be used to send the text, audio, and video between the user and the customer service representative. For example, text, graphics, audio, and video information may be sent over the Internet. Videoconferencing
10 protocols may be used to handle video traffic and the like, etc.

If desired, the customer and the customer service representative may interact using e-mail. The user may, for example, use an e-mail application that
15 is implemented on the user's equipment to communicate with the e-mail application of the customer service representative at the customer service representative's location. If desired, the e-mail application used by the user may be hidden from the user. With this
20 approach, the user need only select from on-screen options or the like in the interactive television application to communicate with the customer service representative. E-mail messages or other messages from the customer service representative may contain
25 attachments such as video clips, audio, text, or graphics. Some attachments may be sent directly to the interactive television application without alerting the user. Such attachments may include code patches, configuration file updates, etc.

30 The user may use user equipment 18 to transmit questions to a customer service representative at service provider 50 using communications path 42,

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communications network 34, and path 54. The user may also transmit questions to a customer service representative at service provider 50 using path 26, television distribution facility 14, and path 52.

5 Information from the customer service representative at service provider 50 may be provided to the user equipment using the same paths. If the customer service representative is located at server 36 or server 56, the user equipment may communicate with the
10 customer service representative using the paths in FIG. 1 that link those entities.

The foregoing is merely illustrative of the principles of this invention and various modifications can be made by those skilled in the art without
15 departing from the scope and spirit of the invention.

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What is Claimed is:

1. A method for providing a user at user equipment with customer service for an interactive television application comprising:

allowing the user to use the user equipment to access an interactive television application; and

allowing the user to use the user equipment to invoke help; and

using the user equipment to establish a live communications link between the user at the user equipment and a customer service representative.

2. The method defined in claim 1 further comprising sending real-time video images of the customer service representative to the user equipment over the live communications link.

3. The method defined in claim 1 further comprising presenting real-time audio from the customer service representative to the user equipment over the live communications link.

4. The method defined in claim 1 further comprising displaying a screen on the user television equipment that contains a text message from the customer service representative.

5. The method defined in claim 1, wherein the user equipment includes a video camera, the method further comprising:

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sending real-time video images of the customer service representative to the user equipment over the live communications link; and

allowing the user to use the video camera to send the customer service representative video questions in real time.

6. The method defined in claim 1 wherein the user equipment includes a keyboard, the method further comprising:

sending real-time video images of the customer service representative to the user equipment over the live communications link; and

allowing the user to use the keyboard to send the customer service representative text questions in real time.

7. The method defined in claim 1 wherein the user equipment includes a microphone, the method further comprising:

sending real-time audio of the customer service representative to the user equipment over the live communications link; and

allowing the user to use the microphone to ask the customer service representative questions in real time.

8. The method defined in claim 1 wherein the user equipment includes a microphone, the method further comprising:

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sending real-time video of the customer service representative to the user equipment over the live communications link; and

allowing the user to use the microphone to ask the customer service representative questions in real time.

9. The method defined in claim 1 wherein the user equipment includes a keyboard, the method further comprising:

allowing the user to use the keyboard to ask the customer service representative questions in real time; and

displaying real-time text from the customer service representative to the user on the user equipment in response to the questions.

10. The method defined in claim 1 wherein the user equipment includes a keyboard, the method further comprising:

allowing the user to use the keyboard to ask the customer service representative questions in real time; and

providing real-time audio from the customer service representative to the user over the live communications link.

11. The method defined in claim 1 wherein the user equipment is user television equipment, the method further comprising allowing the user to use the user television equipment to invoke the help.

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12. The method defined in claim 1 wherein the user equipment is user television equipment based on a set-top box, the method further comprising allowing the user to use the set-top box to invoke the help.

13. The method defined in claim 1 wherein the user equipment is user television equipment based on a digital video recorder, the method further comprising allowing the user to use the digital video recorder to invoke the help.

14. The method defined in claim 1 wherein the user equipment is user computer equipment, the method further comprising allowing the user to use the user computer equipment to invoke the help.

15. The method defined in claim 1 wherein the user equipment is a personal computer, the method further comprising allowing the user to use the personal computer to invoke the help.

16. The method defined in claim 1 wherein the user equipment is user television equipment controlled by a remote control, the method further comprising allowing the user to use the remote control to invoke the help.

17. The method defined in claim 1 wherein the user equipment is user television equipment controlled by a remote control, the method further

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comprising allowing the user to use a dedicated button on the remote control to invoke the help.

18. The method defined in claim 1 wherein the interactive television application is an interactive television program guide, the method further comprising allowing the user to use the user equipment to invoke help on the interactive television program guide.

19. The method defined in claim 1 wherein the interactive television application is an interactive television program guide, the method further comprising:

displaying program guide screens on the user television equipment; and

displaying an on-screen help option on at least one of the program guide screens that the user may select to invoke help on the interactive television program guide.

20. The method defined in claim 1 further comprising:

displaying screens on the user television equipment with the interactive television application; and

displaying an on-screen help option on at least one of the interactive television application screens that the user may select to invoke help on the interactive television application.

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21. The method defined in claim 1 further comprising:

displaying a menu screen for the user that includes options for various interactive services;
displaying an on-screen help option on the menu that the user may select to invoke help on the interactive television application.

22. The method defined in claim 1 further comprising:

displaying a menu screen for the user that includes options for various interactive services, wherein at least one of the services involves the display of program listings for the user on the user equipment; and

displaying an on-screen help option on the menu that the user may select to invoke help on the interactive television application.

23. The method defined in claim 1 further comprising displaying a menu screen for the user on the user equipment that provides the user with options to view help-related information and to contact customer service.

24. The method defined in claim 1 further comprising displaying a screen on the user equipment that contains answers to common questions.

25. The method defined in claim 1 further comprising:

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displaying a screen on the user equipment that contains common questions;
allowing the user to make a selection on the screen; and
displaying a screen containing help information on the user television equipment in response to the user's selection.

26. The method defined in claim 1 further comprising:

displaying a screen on the user equipment that contains common questions;
allowing the user to make a selection on the screen; and
displaying a screen containing a video clip of help information on the user television equipment in response to the user's selection.

27. The method defined in claim 1 further comprising:

displaying a screen on the user equipment that contains common questions;
allowing the user to make a selection on the screen; and
displaying a screen containing an information region that includes help information on the user television equipment in response to the user's selection.

28. The method defined in claim 1 further comprising displaying a screen on the user equipment

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that provides the user with an opportunity to send a message to a customer service representative.

29. The method defined in claim 1 further comprising:

displaying a list of help options on the user equipment when the user invokes help;

allowing the user to select one of the options; and

providing the user with an opportunity to send a message to a customer service representative when the user selects a given one of the options.

30. The method defined in claim 1 further comprising displaying a searchable help index on the user equipment.

31. The method defined in claim 1 further comprising:

displaying a list of help options on the user equipment when the user invokes help;

allowing the user to select one of the options; and

displaying a searchable help index on the user equipment when the user selects a given one of the options.

32. The method defined in claim 1 further comprising displaying a list of help options on the user equipment, wherein one of the options provides the user with an opportunity to contact the customer

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service representative over the live communications link.

33. A system for providing help information, comprising:

a television distribution facility that distributes television programming; and

user television equipment configured to:
receive and display the television programming from the television distribution facility;

allow the user to access an interactive television application that is implemented using the user equipment; and

allow the user to establish a live communications link with a customer service representative to obtain help information.

34. A system for providing help information for an interactive television application over a communications network, comprising:

a server that supports an interactive television application; and

user equipment configured to:
allow the user to access the interactive television application over the communications network; and

allow the user to establish a live communications link with a customer service representative to obtain help information.

35. The system defined in claim 34 wherein the communications network includes the Internet.

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36. The system defined in claim 34 wherein the user equipment is user television equipment.

37. The system defined in claim 34 wherein the user equipment includes a set-top box.

38. The system defined in claim 34 wherein the user equipment includes a personal computer.

39. The system defined in claim 34 wherein the user equipment includes a video camera that the user uses to transmit video images to the customer service representative.

40. The system defined in claim 34 wherein the user equipment includes a microphone that the user uses to transmit audio to the customer service representative.

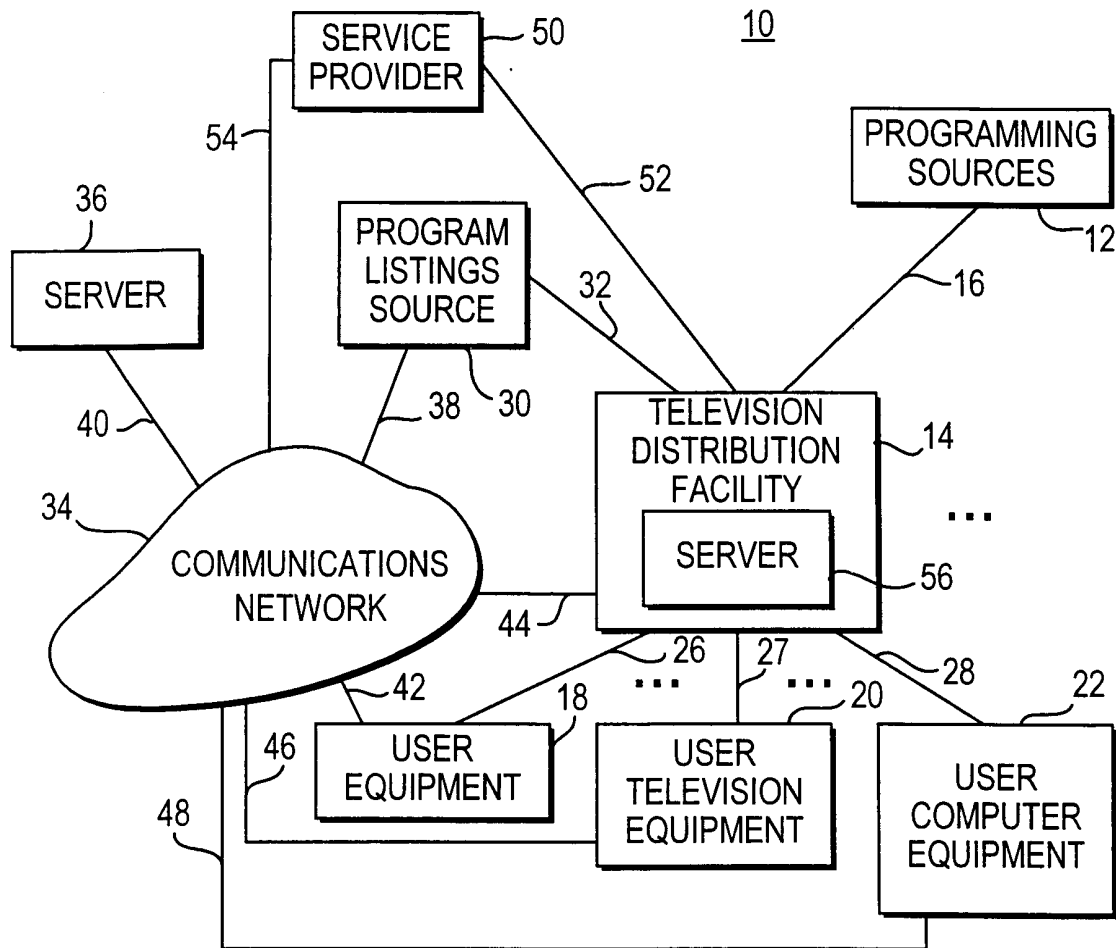


FIG. 1

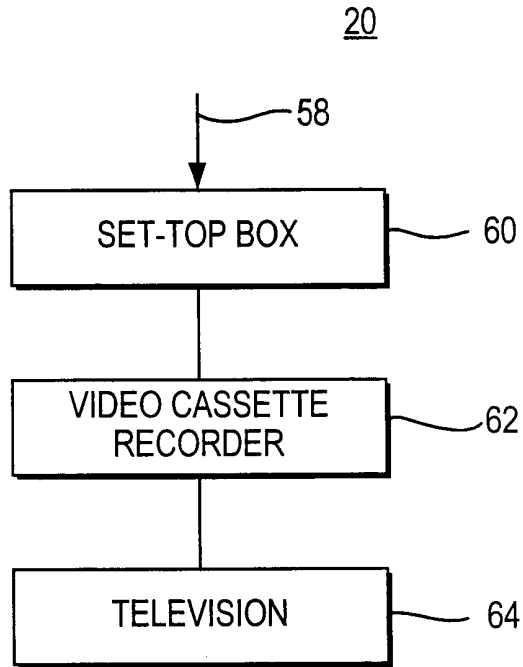


FIG. 2

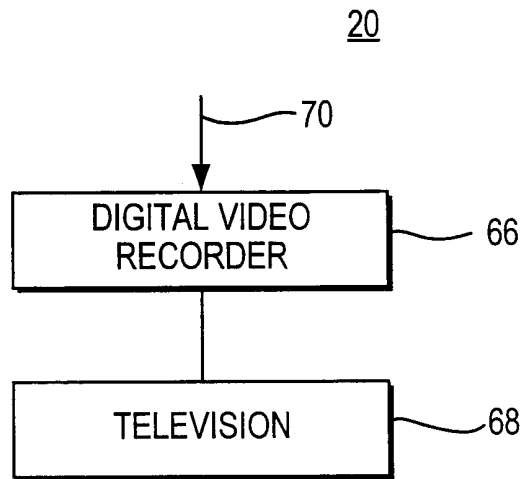


FIG. 3

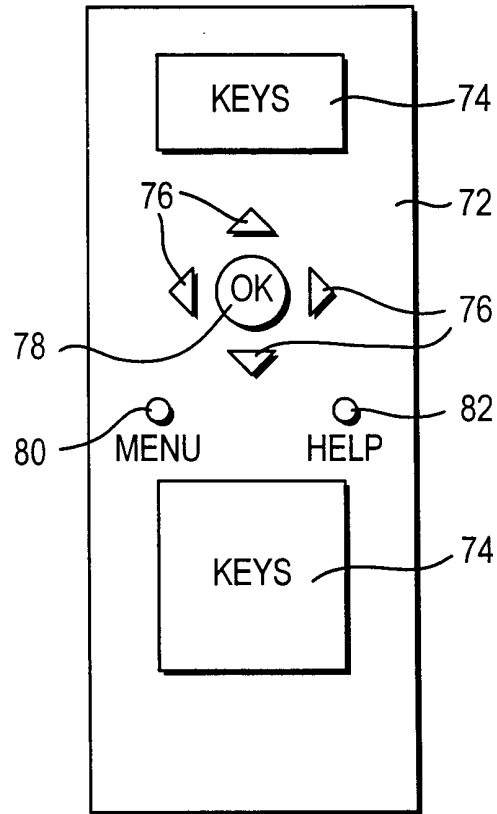


FIG. 4

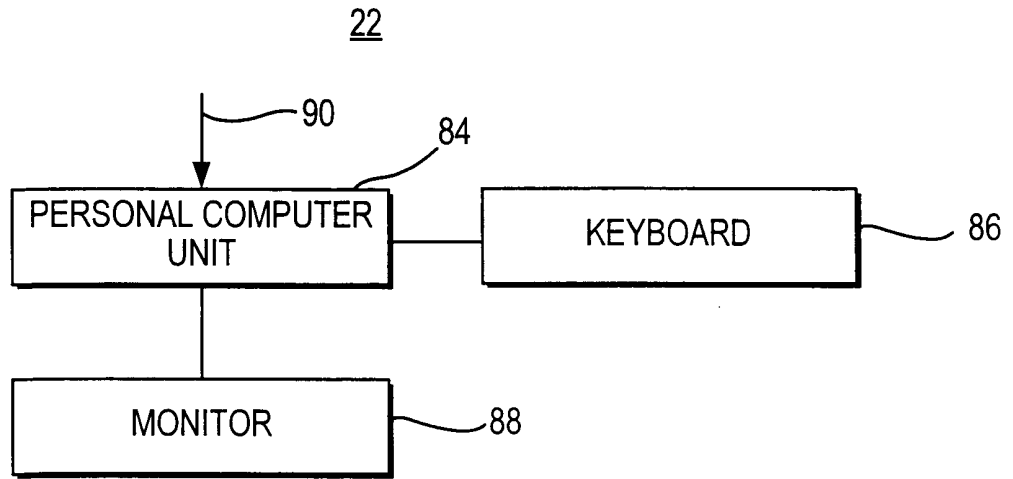


FIG. 5

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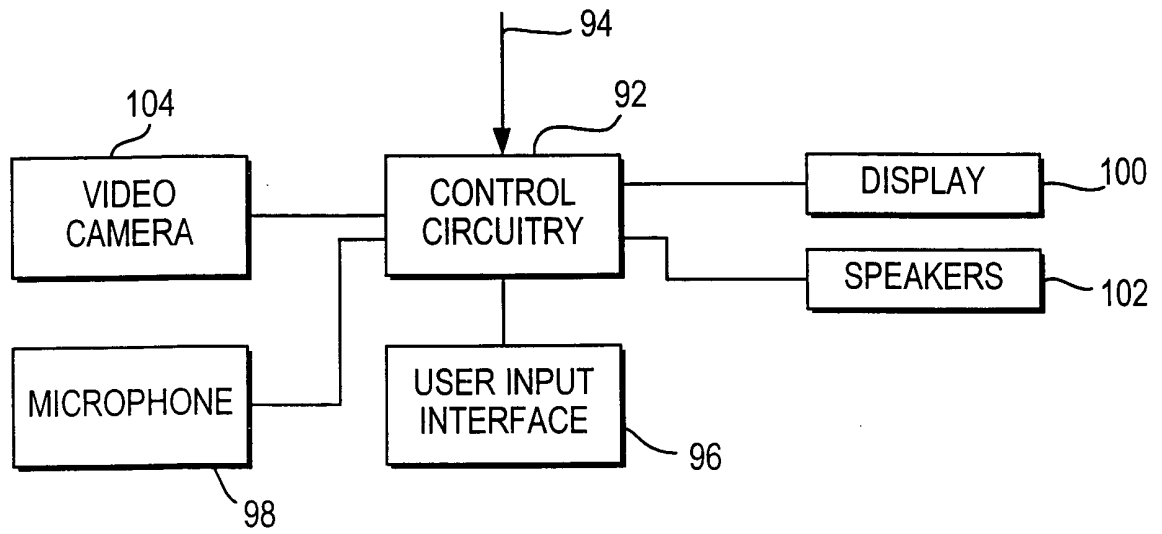


FIG. 6

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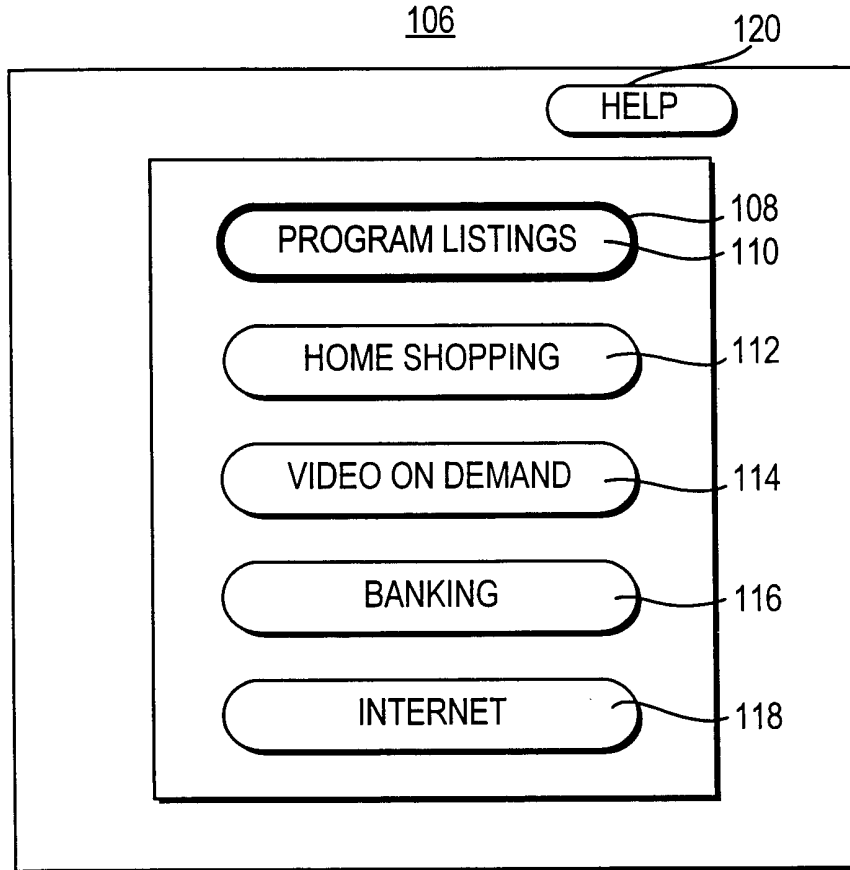


FIG. 7

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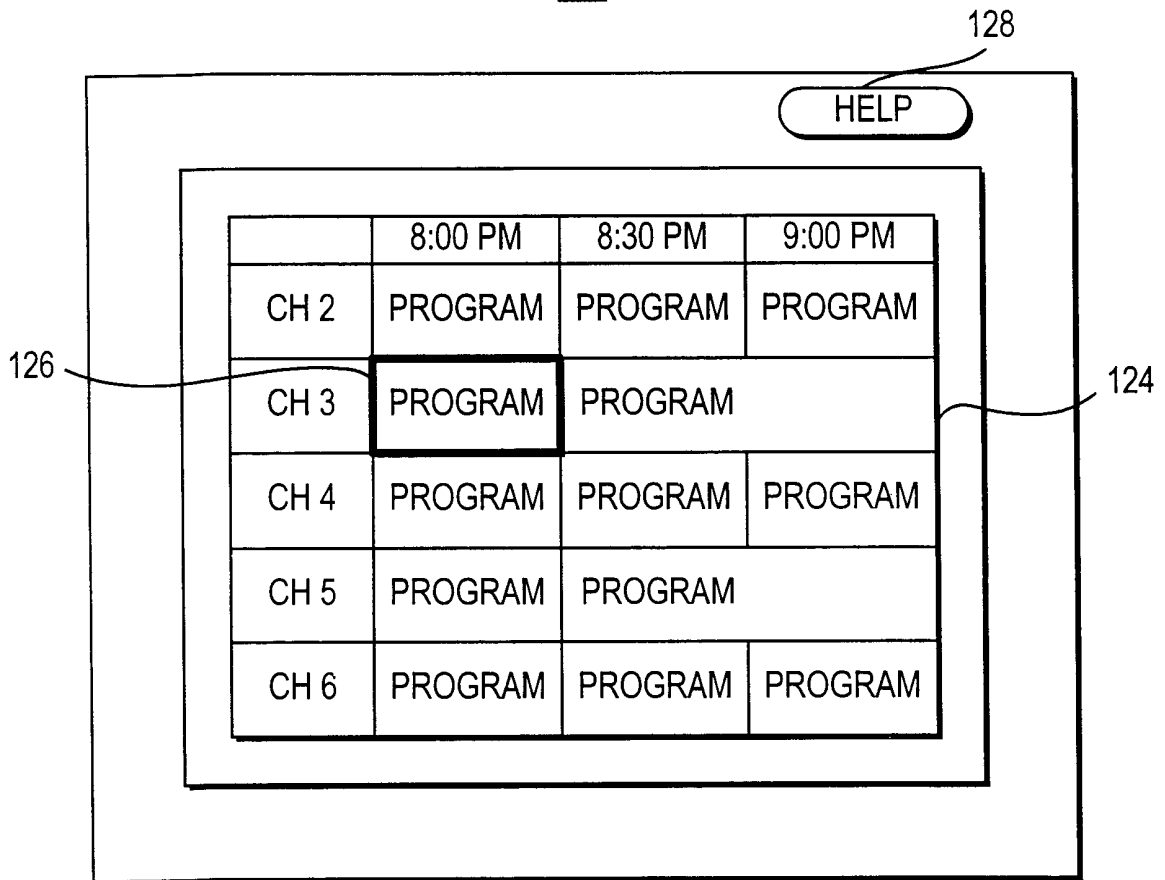


FIG. 8

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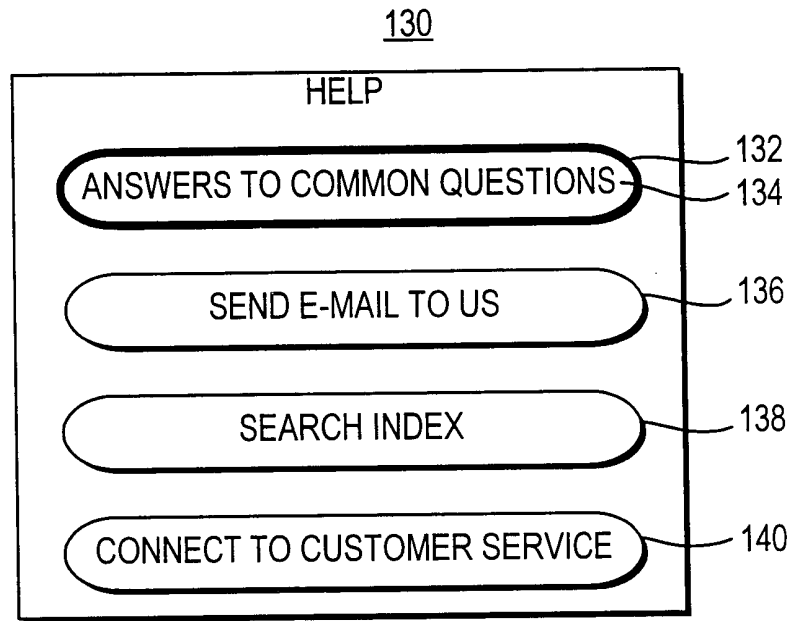


FIG. 9

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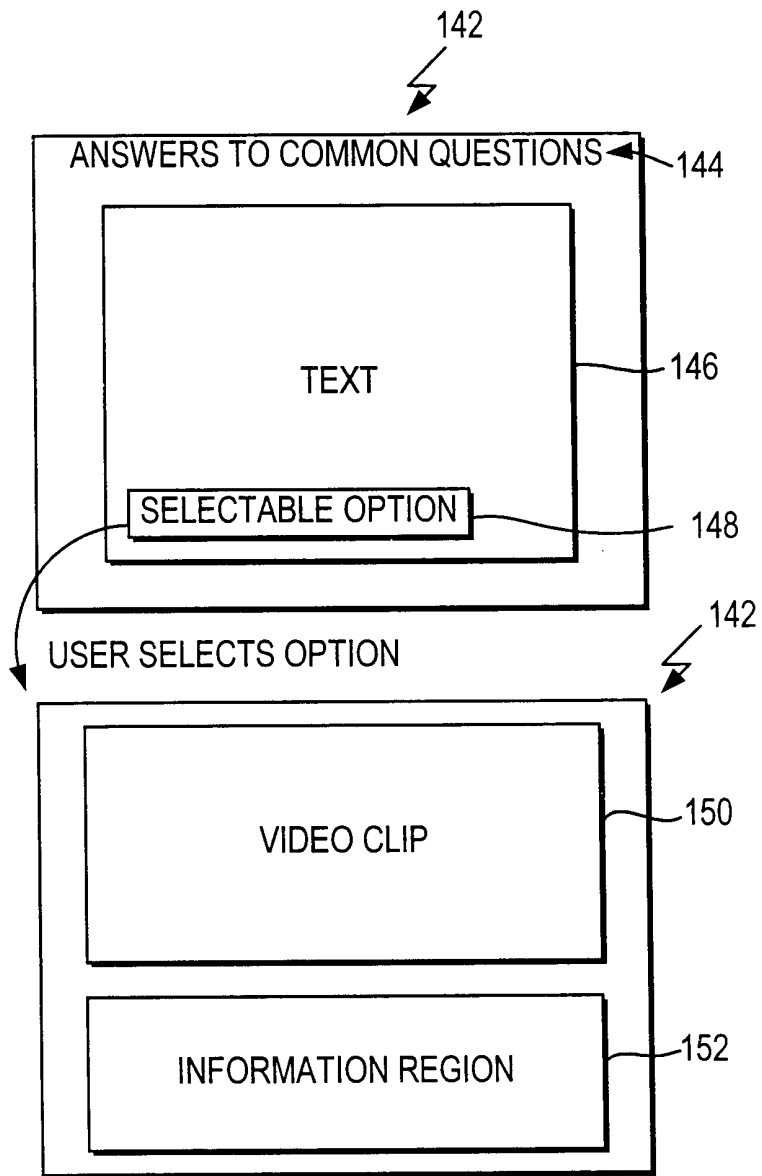


FIG. 10

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TO ← 156

SUBJECT ← 158

MESSAGE:

162

The diagram shows a rectangular frame containing an email composition form. At the top, the word 'TO' is followed by a text input field containing 'CUSTOMER SERVICE'. An arrow points from the number '156' to the right side of this field. Below this, the word 'SUBJECT' is followed by an empty text input field. An arrow points from the number '158' to the right side of this field. Underneath, the word 'MESSAGE:' is followed by a large, empty rectangular text area. A curved line connects the number '160' to the right side of this area. At the bottom right of the frame, there is a rectangular button labeled 'SEND'. A curved line connects the number '162' to the right side of the button.

FIG. 11

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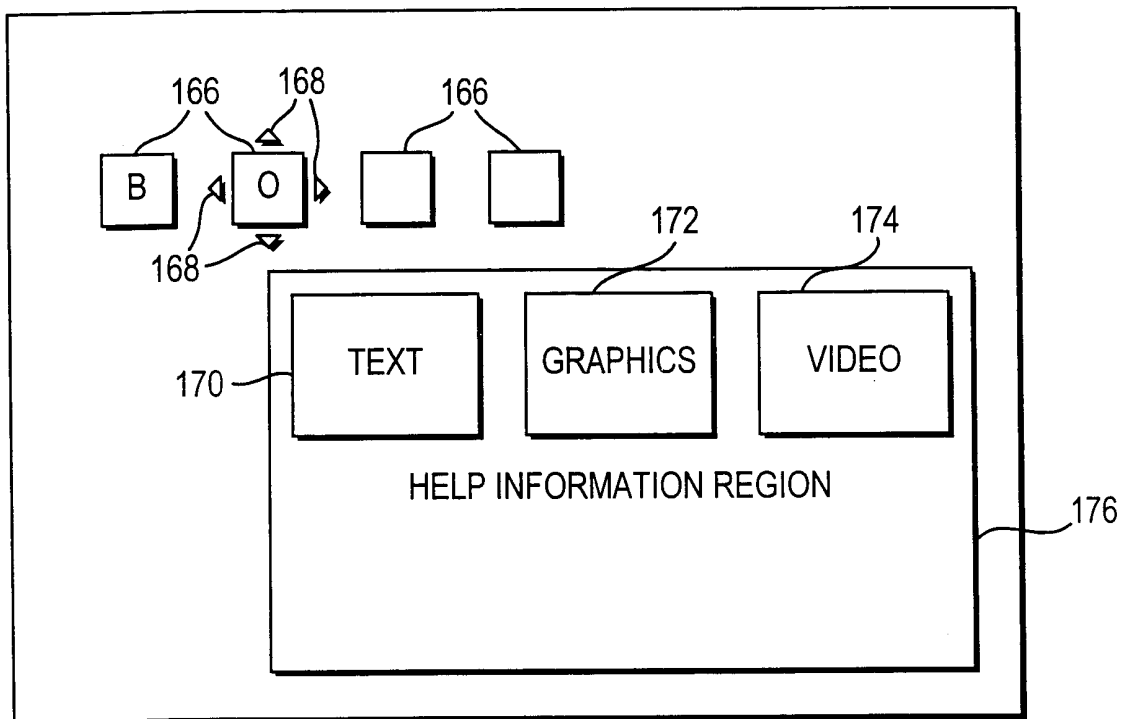


FIG. 12

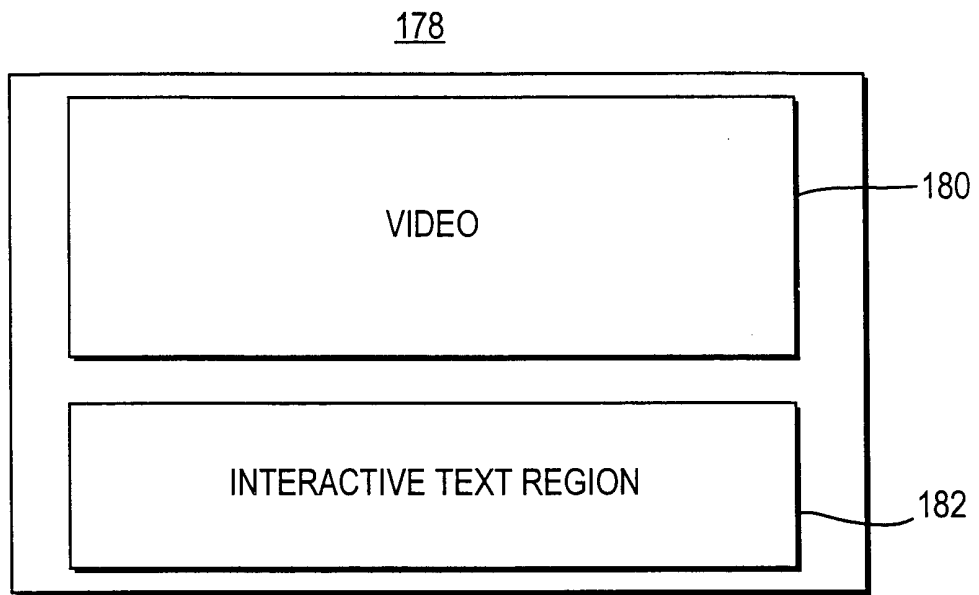


FIG. 13

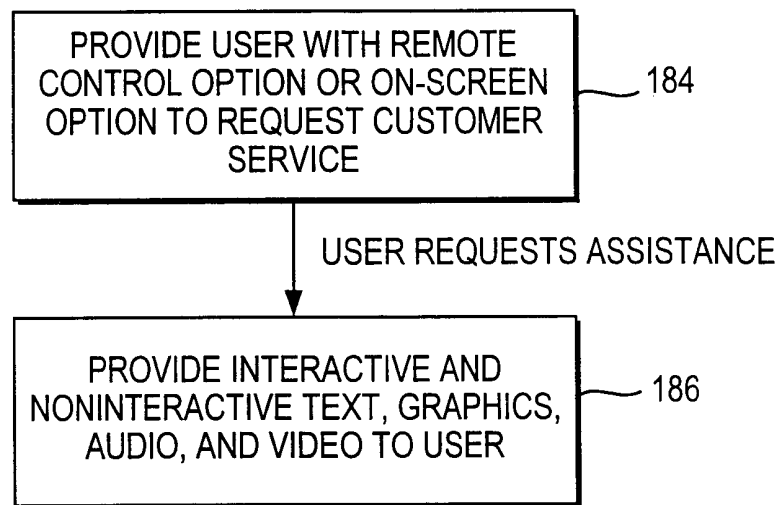


FIG. 14

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/23599

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04N7/173

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04N

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

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 884 032 A (BATEMAN THOMAS HOWARD ET AL) 16 March 1999 (1999-03-16) column 1 -column 4, line 22 ---	1, 3, 7, 14, 15, 33, 34
A	WO 96 41477 A (TV GUIDE ON SCREEN) 19 December 1996 (1996-12-19) page 11, line 35 -page 12, line 17 page 18, line 3 - line 31 ---	1, 33, 34
A	US 5 838 314 A (PUGH JOEL A ET AL) 17 November 1998 (1998-11-17) column 19, line 4 - line 21 -----	1, 33, 34

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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- * & * document member of the same patent family

Date of the actual completion of the international search

20 December 2000

Date of mailing of the international search report

08/01/2001

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/23599

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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			AU 705839 B	03-06-1999
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US 5838314	A	17-11-1998	NONE	
<hr style="border-top: 1px dashed black;"/>				