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(54) Title: A CONTEXTUAL CONNECTED SYSTEM AND A METHOD THEREOF

(57) Abstract: A computer implemented device comprising processor co-operatively connected to connected experience server, processor comprising client device to generate connected experience across all active devices of user discovering content, information, applications, advertisements on all devices of user automatically in real-time domain and virtual-time domain from web configured for at least one of: contents; information; application; and advertisement based on user context like keywords, internet browsing data and history, social networking data and behavior, messaging and communication behavior and data on a device; device; extractor for extracting internet browsing history and data, social networking behavior and data, messaging and communication behavior and data of user; and server configured to manage active devices of user and its log in /log out status, receive context information from device of user; contextual connected experience across all devices of user on which user is logged in.



A CONTEXTUAL CONNECTED SYSTEM AND A METHOD THEREOF

FIELD OF THE DISCLOSURE

The present disclosure relates to the field of contextual connected user experience in real time on one or more devices of user based on context discovery from any device of user.

DEFINITION OF TERMS USED IN THIS SPECIFICATION -

The term 'contextual' used in this specification relates to grabbing different contexts of user on a device in terms of one or more keywords from different applications on a device of a user, and profile/ gender/ location/ behavior/ content/ application consumption nature of user on a device, browsing history on a device, social networking activities of user, messaging and communication data of a user and using these context parameters from one device of user and delivering targeted advertisements, content, information, applications on all devices of user which he is in ownership of and logged in and is active at any given point of time by using cloud server which can manage user login from its different devices, can manage devices and client installed on the devices responsible for context gathering.

The term 'cloud infrastructure' used in this specification relates to the infrastructure used for delivery of intelligent contextual computing solution to one or more devices, whereby shared resources, software, and information are provided to computers and other devices as a utility over a network including internet and is responsible for storing user context, managing ads/content/information, managing 3rd party providers of ads/content/information/apps, manage user login on different devices to know which devices of users are active to push relevant ad/content/information/app based on context of one or more devices of user.

The term 'cloud computing' used in this specification relates to providing computing technologies and techniques as a service rather than a product, whereby shared resources, software, and information are provided to computers and other devices as a utility (like the electricity grid) over a network (typically the internet).

The term 'contextual advertising' used in this specification relates to scanning text of any application or document like pdf/doc/ppt/epub/ebooks/etc and content on device, website or webpage for keywords to return advertisements appearing on devices applications screens, websites or media including cell phones, tablets, pc, smart tv, iptv, gps navigation device, smartphones, or mobile phones and any other network enabled device.

The term 'contextual information and content' used in this specification relates to parts that relate to audio/video/ articles/ blogs/ websites/ news/ search results/ social networking posts/ messaging and communication like emails/sms/mms/IM/etc, to throw light on meaning of one or more words appearing on devices applications screens, contents, ebooks, documents, websites or media including cell phones, tablets, pc, smart tv, iptv, gps navigation device, smartphones, or mobile phones and any other network enabled device.

The term 'contextual application' used in this specification relates to parts that relate to applications, which are serving the purpose or context of one or more words appearing on devices applications screens, websites or media including cell phones, tablets, pc, smart tv, iptv, gps navigation device, smartphones, or mobile phones and any other network enabled device.

These definitions are in addition to those expressed in the art.

BACKGROUND

Conventionally, commercial connected experience has been in the form of delivering contents over clouds to devices like phones, music players, TVs, etc so that users can access same content on any device using IT cloud infrastructure but no context is used while providing this experience and no targeted advertisements/ content/ information/ applications are discovered and delivered in real time to user on his different devices based on context of one or more devices. Most recently, as people began spending more and more time using different devices at different point of times; connected experience has become essential part of overall user experience across device portfolio of same user.

Further, as mobile and/or wireless electronic devices become increasingly popular, delivering connected experience to users of such devices is likely to become increasingly popular. Such devices include, for example, mobile telephones, portable media players, smart TVs, gps navigation devices, tablet pc, smart phones, pc, net books, digital kitchen appliances, internet protocol television (IPTV), gaming consoles, small form factor PCs or any other network enabled device with at least one display, touch screen, motion/IR/gesture sensors, keyboard and audio function. Many of these devices include features such as cameras, text messaging capability, social networking, instant messaging, internet browser electronic mail capability, video playback capability, audio playback capability, image display capability, wired or wireless connections, and storage. Accordingly such devices are capable of displaying audio, visual, and graphical or text information and contents.

Connected experience, wherein, information, content, applications, product advertisement, media agencies, application providers connect with consumer through their cellular telephones, personal digital assistants (PDA) and other mobile devices like tablets, pc, smart TVs, iptvs, different form factor PCs has evolved in recent years. For example, an advertiser may encourage cellular telephone users to participate in trivia contests thereby opting into a marketing campaign which enables

the advertisers to send those users coupons or promotional offers on different devices of same User. Further, content and information providers may encourage users to buy their content and information across devices of same user based on context of user. Though this kind of connected experience has exploded in recent years, its many advantages, finding context of user on one device and delivery mechanisms on other devices of user based on that context, has not been fully exploited. Accordingly many more innovative and effective uses mode of contextual connected experience is required.

Thus, a need is felt for effective mechanism of discovering contexts of user on one device and deliver targeted advertisements/ information/ contents/ applications on same and other devices of users, all logged into same back end server over cloud and internet, providing complete contextual connected experience across multi screens.

OBJECTS OF THE INVENTION

In view of the foregoing background, it is an object of the present invention to provide a system, apparatus, and associated method/s for contextual connected experience across the network enabled devices of same user.

It is an object of the present invention to overcome or at least mitigate certain of the disadvantages of the above systems and methods.

SUMMARY OF THE INVENTION

In accordance with the present invention, a computer implemented device including a processor is co-operatively connected to a connected experience server, said processor including a client software configured as an client to grab keywords and context across applications of a device of user and generate contextual connected experience across devices of user discovering relevant keywords and context based content, information, applications, advertisements automatically in real-time domain to all

active devices of user and virtual-time domain from web/ network via a web application server to which the client software from all devices of user is logged into over network by way of same user credentials like username and password wherein the server is configured for at least one of: contents; information; application; and advertisement; a client software configured to display at least one of: media titles; content; information; applications; advertisements automatically on main, secondary, split screens on device in real-time domain and virtual-time domain from web via the web application server configured for displaying at least one of: contents; information; application; and advertisement; a client software configured to send idle requests to server when there is no context on device while pulling at least one of: advertisements, information, content, and applications based on context generated from other device of user; a client software configured to send keywords and context of a device to server and pull at least one of: relevant advertisements, information^ content, and applications based on received context of any one device of user and based on context generated from other devices of user; and an extractor for extracting keywords from at least one of rendering functions in at least one of application, middleware, device driver, wherein rendering functions include: text; image; audio; and video data; pushed or pulled via at least one of said applications, middleware, device driver, kernel of operating system, to input and output peripherals that are configured to be operable on the operating system of said computer implemented device.

Typically, the computer implemented device includes a sub-extractor for grabbing profile, likes, dislikes, preferences, internet browsing data and history, location, social networking behavior, posts, data, application consumption, downloaded user behavior, messaging, communications data; a data puller configurable to: pull advertisement, content, information, and applications from the server based on the context generated from said extractor; a server configured to: manage user login from a plurality of devices over network, manage type of active devices of user, manage and receive idle requests from device when no context received from that device, receive keywords and user context information from one or more devices of user on which user is

logged into, and deliver relevant and contextual connected experience while discovering relevant content, information, applications, advertisements based on received idle requests, context and keywords automatically in real-time domain and virtual-time domain from web and pushing to active devices of user which user is logged into; and a notifying unit configured to output notifications to user of device about discovered information, content, applications and device.

Typically, the computer implemented device includes a first client device configured as an client to grab text, keywords and context like gender, behavior, profile, content consumption nature, web browsing history, social networking behavior, messaging/communication behavior, location across applications of a device of user and generate contextual connected experience across devices of user discovering relevant keywords and context based content, information, applications, advertisements automatically in real-time domain to all active devices of user and virtual-time domain from web via a web application server configured for at least one of: contents; information; application; and advertisement; a second client device configured to display at least one of: media titles; content; information; applications; advertisements automatically in real-time domain and virtual-time domain from web via the web application server configured for displaying at least one of: contents; information; application; and advertisement; a third client device configured to send idle requests to server when there is no context on device while pulling at least one of: advertisements, information, content, and applications based on context generated from other device of user; a fourth client device configured to send keywords and context of a device to server and pull at least one of: relevant advertisements, information, content, and applications based on received context of one device of user and based on context generated from other devices of user; and an extractor for extracting keywords from at least one of rendering functions in at least one of application, middleware, device driver, wherein rendering functions include: text; image; audio; and video data; pushed or pulled via at least one of said applications, middleware, device driver, kernel of operating system, to input and output peripherals

that are configured to be operable on the operating system of said computer implemented device.

Typically, the computer implemented device includes at least one input peripheral comprising at least one of: a keyboard; a touch screen; a motion sensor; a camera sensor; a capacitive touch; a resistive touch; an infrared (IR) sensor; a mouse; and a recorded audio.

Typically, the computer implemented device further includes further comprising at least one output peripheral comprising at least one of: a display screen; an audio output; a plurality of wired network ports; a plurality of wireless network ports; a serial port; a universal serial bus (USB) port; a serial to parallel interface (SPI); and an inter-integrated circuit (I2C) bus.

Typically, the device includes at least one but not limited to processor, storage, network ports, and input peripherals comprising at least one of: a keyboard; a touch screen; a motion sensor; a camera sensor; a capacitive touch; a resistive touch; an infrared (IR) sensor; a mouse; and audio input port/microphone. The device includes at least one output peripheral comprising at least one of: a display screen; an audio output; a plurality of wired network ports; a plurality of wireless network ports; a serial port; a universal serial bus (USB) port; a serial to parallel interface (SPI); and an inter-integrated circuit (I2C) bus.

Typically, said client device is a network enabled device selected from a group consisting of at least one of: a mobile phone; a personal digital assistant (PDA); a smart phone; a feature phone; a smart book; a tablet personal computer (PC); a notebook; a laptop; a netbook; a digital picture frame; a portable media player; a music player; a video player; a smart television (TV); a digital television (TV); an internet protocol television (IPTV); an analog television (TV); a set-top box; a kitchen appliance; a remote control; a digital clock; a car infotainment device; a global

positioning system (GPS) navigation device; a gaming console; and an application specific processor and chipset.

Typically, a repository configured to store connected experience data and connected experience parameters. The device includes at least one of: a kernel; and a software device driver configured to push and pull content data and text data via a text recognition adapter for recognizing at least one of: text; image; audio; and video. Further, said text recognition adapter is integrated in an operating system and the device includes a volatile memory and a non-volatile memory for storing said content data and text data.

Further, in accordance with a present invention, a method for configuring contextual connected experience is extracting keywords directly from at least one of textual, image, video and audio data and fields from input peripherals selected from a group consisting of keyboard, touch screen, motion sensor, camera sensor, capacitive touch, resistive touch, infrared (IR) sensor, a mouse, and a recorded audio; extracting keywords from at least one of: textual, image, audio, and video data pushed to output hardware peripherals through at least one of: a kernel, user mode software device driver, user mode software applications, middleware of operating system, and file storage and transfer; identifying and extracting alphanumeric characters from said extracted contents and text data through a text recognition adapter integrated in operating system; storing said alphanumeric characters in a volatile memory and a non-volatile memory of a user device; extracting user context information on a communications device, said context information including web browsing behavior and data, social networking behavior and data, messaging and communication data, behavior, gender, location, profile, likes, dislikes, preferences for sending context information to server; and receiving: contextual information, content, applications, and advertisements based on keywords and user context information from the device at said server.

Typically, the method includes: extracting keywords directly from at least one of textual, image, video and audio data and fields from input peripherals selected from a group consisting of keyboard, touch screen, motion sensor, camera sensor, capacitive touch, resistive touch, infrared (IR) sensor, a mouse, and a recorded audio; extracting keywords from at least one of: textual, image, audio, and video data pushed to hardware peripherals through at least one of: a kernel, user mode software device driver, user mode software applications, middleware of operating system, and file storage and transfer; identifying and extracting alphanumeric characters from said extracted contents and text data through a text recognition adapter integrated in operating system; storing said alphanumeric characters in a volatile memory and a non-volatile memory of a user device; extracting user context information on a communications device, said context information including web browsing behavior and data, social networking behavior and data, messaging and communication data, behavior, gender, location, profile, likes, dislikes, preferences for sending context information to server; and receiving: contextual information, content, applications, and advertisements based on keywords and user context information from the device at said server.

Typically, the method includes receiving attributes for: information; content; applications; advertisements to be displayed on said user device, wherein user is logged into backend web application; and sending and displaying: said contextual web information; content; applications; and advertisements on said user device according to a plurality of attributes on at least one of: a same screen; extended screen; split screen; and a separate screen of said user device or other user devices which are active and logged into by same user.

Typically, the method includes step of discovering and delivering: information; content; applications; and digital advertising based on context of said user using keywords in multiple applications/ internet browsing history and data/ search behavior and data/ blogging/ social networking data and behavior/ messaging and communication data and behavior/, user profile, on one or more user devices. Further,

the method includes step of forming meaningful character of words by taking characters stored in memory of user device as input parameters. Again, the method includes step of logging into backend server application through client device software and an internet browser and a step of periodically sending a log-in active status confirmation request to a back-end server.

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS

Other aspects of the invention will become apparent by consideration of the accompanying drawings and their description stated below, which is merely illustrative of a preferred embodiment of the invention and does not limit in any way the nature and scope of the invention.

FIGURE 1 illustrates a device as envisaged by the present invention;

FIGURE 2 illustrates a computer implemented contextual connected server system as envisaged by the present invention; ♦

FIGURE 3A and FIGURE 3B illustrate a method for contextual connected user experience in real-time and virtual-time as envisaged by the present invention; and

FIGURE 4 illustrates a method for flow of keywords, context, idle requests in real time from devices to server and advertisements/content/information/etc in response from server to devices, in accordance with the present invention.

DETAILED DESCRIPTION OF THE INVENTION

The invention for a notification and task bar based advertising system will now be described with reference to the accompanying drawing that does not limit the scope and ambit of the invention. The description provided is purely by way of example and illustration.

According to the first aspect of the invention, a method of providing connected experience includes discovering content, information, applications, advertisements automatically (without requiring to do manual search) in real-time or virtual-time from web environment on all active devices of user based on different user context on any device of user. Content/information/applications/advertisement/web-application are transferred to network enabled devices of an end-user logged into these devices to a common-single sign framework on to a back-end web server application via a client application or internet browser on these devices, wherein said discovery is based on user's profile/behavior/likes/dislikes/keywords in applications/internet browsing history and data/ content consumption behavior and data/social networking, messaging, communication behavior and data. The discovery is also based on one or more keywords extracted from text/image/video/audio data in applications pushed or pulled to/from applications, middleware, device drivers, storage, output and input peripherals of device, via central or common text/audio/video/image rendering functions in OS middleware framework or individual applications with the help of an software adapter/module integrated into operating system of a device for a user logged into back-end web application server, wherein said devices have at least one display, mouse, touch screen, motion/IR/gesture sensors, camera, input sensors, keyboard, wired and wireless network ports, cellular connectivity and audio input and/or output functionalities.

According to the second aspect of the present invention, there is provided a method of discovering information/content/applications/advertisements across one or more devices of same user based on user's profile/likes/dislikes/interests/behavior and keywords extracted from one or more applications on devices of user automatically without requiring user to search manually. The method further comprises extracting contents/actions/keywords/numbers/text directly from text/image/video/audio data from input peripherals (of a device) like keyboard/touch screen/motion sensor/camera sensor/capacitive or resistive touch/TR sensor /mouse/audio recorded and output peripherals (of a device) like display screen or audio output or wired or wireless

network ports or other output ports like serial/usb/spi/i2c. Further, these contents and text data are pushed or pulled to respective said hardware peripherals by use of kernel or user mode software device drivers or user mode software applications, or use of middleware of operating system, or from file storage or transfer and identifying and extracting alpha numeric characters from the said extracted contents and text data with the help of text recognition adapter (for text, image, audio, video) integrated in operating system. The method further comprises storing said characters optionally in volatile and non volatile memory of user device by forming meaningful character of words out of said characters and pulling the content/information/application/advertisement contents from the server based on said alpha numeric characters while optionally storing the pulled information/content/applications/advertisements in memory on the user device. The method further comprises receiving attributes for said information/content/applications/advertisements to be displayed on user devices, wherein, the user is logged into to back-end web application to display said information/content/application. The information/content/application is previewed according to the said attributes on same extended, split screen or separate screen of user device.

According to the third aspect of the invention, there is provided a system for a discovery and delivery of information/content/applications/digital advertising based on context of user using keywords in different applications on one or more user devices. The system includes a network operable to support user device/s providing completed contextual connected experience to the user across his devices. Further, the user device includes means for extracting the contents/keywords/text from text, audio, video data pushed or pulled to output and input peripherals respectively via a text recognition adapter for operating system of that device to extract text from audio/video/image/text using text recognition or optical character recognition, wherein the contents/keywords/text are extracted for image and video data or audio to text conversion for audio and video data, means for identifying alphanumeric characters from the extracted contents and storing said characters in the device memory. Further,

means is provided for forming meaningful character of words from the characters stored in the memory of the user device. Means for logging into back end server application via a device client software or internet browser on one or more user devices is also available and means for constantly and periodically sending a log in active status confirmation request to the back end server is configured.

According to fourth aspect of the invention, the system further comprises: a server operable to communicate in network of user device/s, means for tracking the log in and log out status of user, means for identifying from which devices the user is logged into, means for identifying user, means for keeping all login session of users from different devices active as long as user is not log out, means for accepting the keywords from one or more device user is logged into, means for receiving and storing other context of user like location/ profile/ preferences/ likes/ dislikes/ internet browsing data and behavior/ social networking, messaging and communication behavior and data, means for matching and pulling the information/content/applications/advertisement contents from the backend database of that server or by crawling external websites but based on said alpha meaningful keywords, means for pushing the information/content/applications/advertisement in real or non-real time on same or other devices of same user if user is logged into on the server from those devices, optionally storing the pulled content/information/application/advertisements in memory on the user device, means for pushing attributes for said content/information/applications/advertisements to be displayed on user device from the server and displaying said information/content/applications/advertisement, means for storing user recommendations/ experiences/ ratings/ sharing with friends/etc for a particular advertisement/information/content/application/deal/coupon and allowing users to chat with the providers of these, means for managing deal and coupon redemption and interfacing with retailers, and means for managing 3rd party content/ information/ application/ advertisement providers, their data/links/references.

According to fifth aspect of the invention, the content/information/application preview/advertisement is optionally displayed on primary, secondary or split display screen on device as a part of multitasking application or service without disturbing the main OS screen and the operation on the main OS screen.

As mentioned in the second aspect of the invention the user devices are network enabled devices, wherein the network enabled device is one or more of mobile phone or PDA, or Smart phone, or Feature Phone, or Smart book, or Tablet PC or PC or Notebook or Laptop or Net book or digital picture frame, or portable media player, or music player, or video player, or Smart TV, or digital TV, or IPTV, or analog TV, or set top box, or kitchen appliance or a digital clock, or car infotainment device, or gps navigation device, or remote control, or gaming console, or any other device that has one or more display screens and one or more audio speaker or headphone connector port, one or more keys or keypads, one or more storage, one or more wired or wireless ports, multifunction peripherals and input output ports, and with one more application specific processors/chipsets. The network mentioned herein includes an internet or intranet or private or public close group peer to peer or broadcast network or wireless network.

The step of extraction of keywords further comprises extracting contents, text keywords of frame buffer of one or more display screens or extracting text keywords from functions responsible for text rendering on device at application or middleware or device driver or kernel modules of operating system, or applying optical character recognition on image data or applying speech to text conversion on audio and video data stored on device. The key pressed out of different alpha numeric keys from the key/keypad content buffer. Still further, the audio and video data can be an extraction of the contents from a location on the screen pressed by single/multiple/finger/resistor/capacitive/stylus based touch screen or mouse clicks buffer, or it can be an extraction of the contents from a location on the screen located by motion/gesture/IR sensors buffer. Further, in an embodiment of the invention, audio and video data transfer from/to file storage or file transfer from/to volatile or

nonvolatile internal and external memory of the device or memory drives connected to the device is done. Further, contents from speech to text conversion of received/sent audio from microphone or audio in/out ports or audio/video data stored on device or are streamed from content server in volatile or nonvolatile memory that further involves the step of extraction of context of user from internet browsing history, social networking data and behavior, messaging and communication data and behavior by way of adapter at application or operating system level.

In an embodiment of the invention, a computer implemented device comprising a processor co-operatively connected to a connected experience server said processor including a client software configured as an client to grab keywords and context across applications of a device of user and generate contextual connected experience across devices of user discovering relevant keywords and context based content, information, applications, advertisements automatically in real-time domain to all active devices of user and virtual-time domain from web/ network via a web application server to which the client software from all devices of user is logged into over network by way of same user credentials like username and password wherein the server is configured for at least one of: contents; information; application; and advertisement; a client software configured to display at least one of: media titles; content; information; applications; advertisements automatically on main, secondary, split screens on device in real-time domain and virtual-time domain from web via the web application server configured for displaying at least one of: contents; information; application; and advertisement; a client software configured to send idle requests to server when there is no context on device while pulling at least one of: advertisements, information, content, and applications based on context generated from other device of user; a client software configured to send keywords and context of a device to server and pull at least one of: relevant advertisements, information, content, and applications based on received context of any one device of user and based on context generated from other devices of user; and an extractor for extracting keywords from at least one of rendering functions in at least one of application, middleware, device driver, wherein rendering functions include: text; image; audio;

and video data; pushed or pulled via at least one of said applications, middleware, device driver, kernel of operating system, to input and output peripherals that are configured to be operable on the operating system of said computer implemented device.

In an embodiment, a computer implemented device further includes a sub-extractor for grabbing profile, likes, dislikes, preferences, internet browsing data and history, location, social networking behavior, posts, data, application consumption, downloaded user behavior, messaging, communications data; a data puller configurable to: pull advertisement, content, information, and applications from the server based on the context generated from said extractor; a server configured to: manage user login from a plurality of devices over network, manage type of active devices of user, manage and receive idle requests from device when no context received from that device, receive keywords and user context information from one or more devices of user on which user is logged into, and deliver relevant and contextual connected experience while discovering relevant content, information, applications, advertisements based on received idle requests, context and keywords automatically in real-time domain and virtual-time domain from web and pushing to active devices of user which user is logged into; and a notifying unit configured to output notifications to user of device about discovered information, content, applications and device. -

In another embodiment, the device further includes at least one input peripheral comprising at least one of: a keyboard; a touch screen; a motion sensor; a camera sensor; a capacitive touch; a resistive touch; an infrared (IR) sensor; a mouse; and a recorded audio implemented device as claimed in claim 1 further comprising at least one output peripheral comprising at least one of: a display screen; an audio output; a plurality of wired network ports; a plurality of wireless network ports; a serial port; a universal serial bus (USB) port; a serial to parallel interface (SPI); and an inter-integrated circuit (I2C) bus.

In yet another embodiment, a computer implemented device is a network enabled device selected from a group consisting of at least one of: a mobile phone; a personal digital assistant (PDA); a smart phone; a feature phone; a smart book; a tablet personal computer (PC); a notebook; a laptop; a netbook; a digital picture frame; a portable media player; a music player; a video player; a smart television (TV); a digital television (TV); an internet protocol television (IPTV); an analog television (TV); a set-top box; a kitchen appliance; a digital clock; a car infotainment device; a global positioning system (GPS) navigation device; a gaming console; a remote control, and at least one application specific processor and chipset, storage. A repository is configured to store connected experience data and connected experience parameters. The device includes at least one of: a kernel; and a software device driver configured to push and pull content data and text data via a text recognition adapter for recognizing at least one of: text; image; audio; and video and the text recognition adapter is integrated in an operating system. Further, the device includes a volatile memory and a non-volatile memory for storing said content data and text data.

In an embodiment, a method for configuring contextual connected experience content data, said method including extracting keywords directly from at least one of textual, image, video and audio data and fields from input peripherals selected from a group consisting of keyboard, touch screen, motion sensor, camera sensor, capacitive touch, resistive touch, infrared (IR) sensor, a mouse, and a recorded audio; extracting keywords from at least one of: textual, image, audio, and video data pushed to output hardware peripherals through at least one of: a kernel, user mode software device driver, user mode software applications, middleware of operating system, and file storage and transfer; identifying and extracting alphanumeric characters from said extracted contents and text data through a text recognition adapter integrated in operating system; storing said alphanumeric characters in a volatile memory and a non-volatile memory of a user device; extracting user context information on a communications device, said context information including web browsing behavior and data, social networking behavior and data, messaging and communication data, behavior, gender, location, profile, likes, dislikes, preferences for sending context

information to server; and receiving: contextual information, content, applications, and advertisements based on keywords and user context information from the device at said server.

In another embodiment, the method includes steps of receiving attributes for: information; content; applications; advertisements to be displayed on said user device, wherein user is logged into backend web application; and sending and displaying: said contextual web information; content; applications; and advertisements on said user device according to a plurality of attributes on at least one of: a same screen; extended screen; split screen; and a separate screen of said user device or other user devices which are active and logged into by same user. The method further including step of discovering and delivering: information; content; applications; and digital advertising based on context of said user using keywords in multiple applications on one or more user devices. The method includes step of forming meaningful character of words by taking characters stored in memory of user device as input parameters.

In yet another embodiment, the method further includes step of logging into backend server application through client device software and an internet browser and a step of periodically sending a log-in active status confirmation request to a back-end server.

Referring to the accompanying drawings, **Figure 1** illustrates a computer implemented contextual connected system **100** in accordance with an embodiment of the present invention. The system **100** includes a processor **110** adapted to process connected experience parameters for users. A system Random Access Memory (RAM) **120** is adapted to store connected experience data, where, the data stored in a RAM can be edited and modified and read too. A system ROM **130** is adaptable to store contextual content, where, content cannot be edited or modified but can only be read. A plurality of input/output devices **140** is adapted to accept connected experience data and output connected experience data in form of graphical output and printable output.

Figure 2 illustrates a computer implemented contextual connected system **200** as envisaged by the present invention. The system **200** includes one or more client devices configured as an client **202**, a device **204** configured to display at least one of: media titles; content; information; applications; advertisements automatically in real-time domain and virtual-time domain from web via the web application server configured for at least one of: contents; information; application; and advertisement, an extractor **206** on device configured for extracting user likes, dislikes, context of social networking behavior and posts, messaging and communication data, web browsing data on device and also extracting keywords, text and contents from at least one of: text; audio; video data that is pushed and pulled to input and output peripherals through a text recognition adapter configured to be operable on operating system of said device, a server **208** configured to output text/audio/image/video to one or more user devices on user demand pertaining to at least one of: connected experience discovering content, information, applications, advertisements automatically in real-time domain and virtual-time domain from web, manage login sessions from different devices of user, receive context/keywords from one or more devices of user, receive idle requests from devices of user. A network **210** configured to connect the client **202**, the device **204**, and the extractor **206** to server **208**, whereby the network **210** is adaptable to internet protocol (ip) and other high-tech telecommunication networks.

Figure 3A and Figure 3B illustrate a flow chart **300** depicting a method for contextual connected user experience in real-time and virtual-time as envisaged by the present invention. A first step **302** includes extracting parameters directly from at least one of textual, image, video and audio data and fields from input peripherals selected from a group consisting of keyboard, touch screen, motion sensor, camera sensor, capacitive touch, resistive touch, infrared (IR) sensor, a mouse, and a recorded audio. A second step **304** includes pushing and pulling content data and text data to respective hardware peripherals through at least one of: a kernel, user mode software device driver, user mode software applications, middleware of operating system, and file storage and transfer. A third step **306** includes identifying and extracting alphanumeric characters from said extracted contents and text data through a text

recognition adapter integrated in operating system. A fourth step **308** includes storing said alphanumeric characters in a volatile memory and a non-volatile memory of a user device. A fifth step **310** includes receiving attributes for: information; content; applications; advertisements to be displayed on said user device, wherein user is logged into backend web application. A sixth step **312** includes displaying: said web information; content; applications; and advertisements on said user device according to a plurality of attributes on at least one of: a same screen; extended screen; split screen; and a separate screen of said user device.

Figure 4 illustrates a schematic 400 depicting contextual connected experience for advertising/content/information/application delivery across multiple devices of a user logged into a common server 402, configuration amongst an array of hardwired/hardware devices that includes a server 402 configured to receive keywords and context and idle requests across various devices and push relevant advertisement, content, information, application across devices; 404, 406, 408, and 410. The device 404 is configured to send keywords to server and receive advertisement/content/information from the server based on keywords received by the server from same device 404 and keywords/context received from other devices 406, 410 also. The device 406 is configured to send keywords and context to server and receive advertisement/content/information from the server based on keywords and context received by the server from same device 404 and keywords/context received from other devices 404,410 also. The device 408 is configured to send idle requests to server and receive advertisement/content/information from the server based on keywords/context received from other devices 404,406,410 also. The device 410 is configured to send context to server and receive advertisement/content/information from the server based on context received by the server from same device 410 and keywords/context received from other devices 404,406 also.

In accordance with an embodiment, a computer implemented device comprising processor co-operatively connected to connected experience server, processor comprising client device to generate connected experience across all active devices of

user discovering content, information, applications, advertisements on all devices of user automatically in real-time domain and virtual-time domain from web configured for at least one of: contents; information; application; and advertisement based on user context like keywords, internet browsing data and history, social networking data and behavior, messaging and communication behavior and data on a device; device configured to display at least one of: media titles; content; information; applications; advertisements automatically in real-time domain and virtual-time domain from web configured for: contents; information; application; and advertisement; extractor for extracting keywords from at least one of: text; image; audio; and video data pulled and pushed to input and output peripherals configured to be operable on the operating system of said device; extractor for extracting internet browsing history and data, social networking behavior and data, messaging and communication behavior and data of user; and server configured to manage active devices of user and its log in /log out status, receive context information from device of user and deliver contextual connected experience across all devices of user on which user is logged in, by way of discovering content, information, applications, advertisements automatically in real-time domain and virtual-time domain from web, based on context information/data received from one or more devices of user.

In an embodiment of the invention, contextual content can be delivered on same or other device of user, delivered from a web application server user is logged through single sign on and common login system into from its different devices, based on user's profile/behavior/likes/dislikes/interests and context/text keywords in application on one of the devices of same user, through a common login system on that web application server user is logged into, and, more particularly, to a system and related method/s for on network enabled devices. The display screen of the user device according to the present invention can be of any form like LCD, LED, EInk, OLED, PLED, AMOLED, FED, EPD, EVIOD, Plasma, or TFT. The present invention also contemplates giving an option to the user to select his choice of category of information/content/application/advertisements like sports, health etc. to be pulled and

display relevant to the selected categories only on to the screen on different devices user is logged into.

TECHNICAL ADVANTAGES AND ECONOMIC SIGNIFICANCE

The present invention proposes the application of this invention to provide a complete contextual connected experience to user across its devices at any given point of time such that when user switches on separate device, the context/keywords from applications on other/previous device the user was logged into, can be used to deliver right content/information/application/advertisement to the same user on the current device user is now logged into, thus providing a seamless connected experience to the user.

While considerable emphasis has been placed herein on the particular features of this invention, it will be appreciated that various modifications can be made, and that many changes can be made in the preferred embodiments without departing from the principles of the invention. These and other modifications in the nature of the invention or the preferred embodiments will be apparent to those skilled in the art from the disclosure herein, whereby it is to be distinctly understood that the foregoing descriptive matter is to be interpreted merely as illustrative of the invention and not as a limitation.

Claims:

1. A computer implemented device comprising a processor co-operatively connected to a connected experience server, said processor comprising:
 - a client software configured as an client to grab keywords and context across applications of a device of user and generate contextual connected experience across devices of user discovering relevant keywords and context based content, information, applications, advertisements automatically in real-time domain to all active devices of user and virtual-time domain from web/network via a web application server to which the client software from all devices of user is logged into over network by way of same user credentials like username and password wherein the server is configured for at least one of: contents; information; application; and advertisement;
 - a client software configured to display at least one of: media titles; content; information; applications; advertisements automatically on main, secondary, split screens on device in real-time domain and virtual-time domain from web via the web application server configured for displaying at least one of: contents; information; application; and advertisement;
 - a client software configured to send idle requests to server when there is no keyword or context on device while pulling at least one of: advertisements, information, content, and applications based on keywords and context generated from other device of user;
 - a client software configured to send keywords extracted from different applications and contents on a device, and user context on a device to server and pull at least one of: relevant advertisements, information, content, and applications based on received keywords and context of any one device of user and based on keywords and context generated from other devices of user; and
 - an extractor for extracting keywords from at least one of rendering functions in at least one of application, middleware, device driver, wherein

rendering functions include: text; image; audio; and video data; pushed or pulled via at least one of said applications, middleware, device driver, kernel of operating system, to input and output peripherals that are configured to be operable on the operating system of said computer implemented device.

2. A computer implemented device as claimed in claim 1, further comprising:

- a sub-extractor for grabbing profile, likes, dislikes, preferences, internet browsing data and history, location, social networking behavior, posts, data, application consumption, downloaded user behavior, messaging, communications data;
- a data puller configurable to: pull advertisement, content, information, and applications from the server based on the context generated from said extractor;
- a server configured to: manage user login from a plurality of devices over network, manage type of active devices of user, manage and receive idle requests from device when no context received from that device, receive keywords and user context information from one or more devices of user on which user is logged into, and deliver relevant and contextual connected experience while discovering relevant content, information, applications, advertisements based on received idle requests, context and keywords automatically in real-time domain and virtual-time domain from web and pushing to all active devices of user which user is logged into the server; and
- a notifying unit configured to output notifications to user of device about discovered information, content, applications and device.

3. A computer implemented device as claimed in claim 1 further comprising at least one input peripheral comprising at least one of: a keyboard; a touch screen; a motion sensor; a camera sensor; a capacitive touch; a resistive touch; an infrared (IR) sensor; a mouse; and a recorded audio.

4. A computer implemented device as claimed in claim 1 further comprising at least one output peripheral comprising at least one of: a display screen; an audio output; a plurality of wired network ports; a plurality of wireless network ports; a serial port; a universal serial bus (USB) port; a serial to parallel interface (SPI); and an inter-integrated circuit (I2C) bus.
5. A computer implemented device as claimed in claim 1, wherein said client device is a network enabled device selected from a group consisting of at least one of: a mobile phone; a personal digital assistant (PDA); a smart phone; a feature phone; a smart book; a tablet personal computer (PC); a notebook; a laptop; a netbook; a digital picture frame; a portable media player; a music player; a video player; a smart television (TV); a digital television (TV); an internet protocol television (IPTV); an analog television (TV); a set-top box; a kitchen appliance; a digital clock; a car infotainment device; a global positioning system (GPS) navigation device; a gaming console; a remote control, and at least one application specific processor and chipset, storage.
6. A computer implemented device as claimed in claim 1 further comprising a repository configured to store connected experience data and connected experience parameters.
7. A computer implemented device as claimed in claim 1, wherein said device comprises at least one of: a kernel; and a software device driver configured to push and pull content data and text data via a text recognition adapter for recognizing at least one of: text; image; audio; and video.

8. A computer implemented device as claimed in claim 6, wherein said text recognition adapter is integrated in an operating system.
9. A computer implemented device as claimed in claim 1, which includes a volatile memory and a non-volatile memory for storing said content data and text data.
10. A method for configuring contextual connected experience content data, said method comprising:
 - extracting keywords directly from at least one of textual, image, video and audio data and fields from input peripherals selected from a group consisting of keyboard, touch screen, motion sensor, camera sensor, capacitive touch, resistive touch, infrared (IR) sensor, a mouse, and a recorded audio;
 - extracting keywords from at least one of: textual, image, audio, and video data pushed to output hardware peripherals through at least one of: a kernel, user mode software device driver, user mode software applications, middleware of operating system, and file storage and transfer;
 - identifying and extracting alphanumeric characters from said extracted contents and text data through a text recognition adapter integrated in operating system;
 - storing said alphanumeric characters in a volatile memory and a non-volatile memory of a user device;
 - extracting user context information on a communications device, said context information including web browsing behavior and data, social networking behavior and data, messaging and communication data, behavior, gender, location, profile, likes, dislikes, preferences for sending context information to server; and
 - receiving: contextual information, content, applications, and advertisements based on keywords and user context information from the device at said server.

11. A method as claimed in claim 9, further comprising steps of:
- receiving attributes for: information; content; applications; advertisements to be displayed on said user device, wherein user is logged into backend web application; and
 - sending and displaying: said contextual web information; content; applications; and advertisements on said user device according to a plurality of attributes on at least one of: a same screen; extended screen; split screen; and a separate screen of said user device or other user devices which are active and logged into by same user.
12. A method as claimed in claim 9 further comprising step of discovering and delivering: information; content; applications; and digital advertising based on context of said user using keywords in multiple applications on one or more user devices.
13. A method as claimed in claim 9 further comprising step of forming meaningful character of words by taking characters stored in memory of user device as input parameters.
14. A method as claimed in claim 9 further comprising step of logging into backend server application through client device software and an internet browser.
15. A method as claimed in claim 9 further comprising step of periodically sending a log-in active status confirmation request to a back-end server.

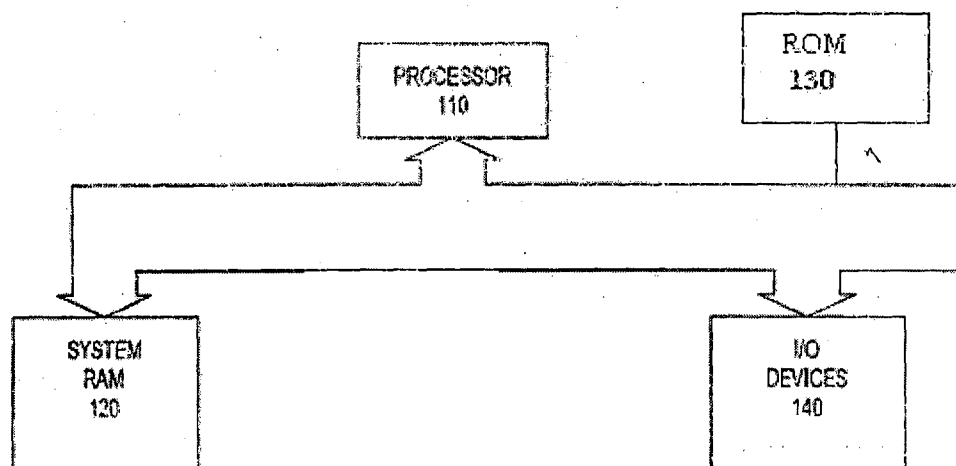
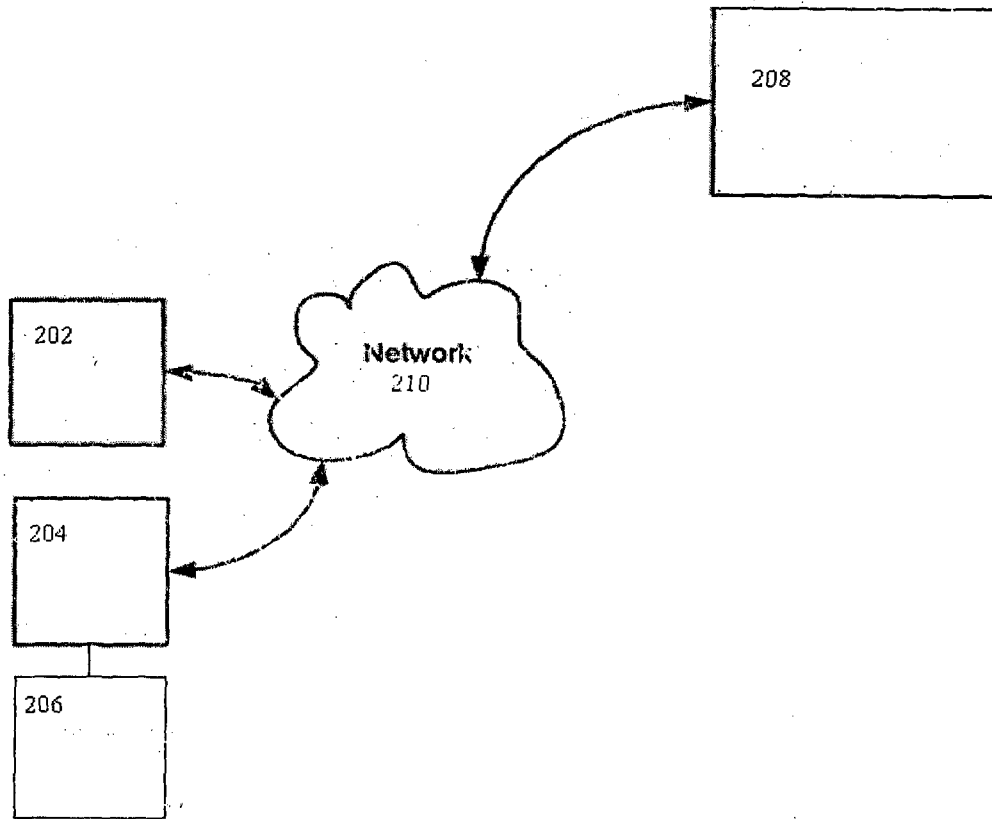
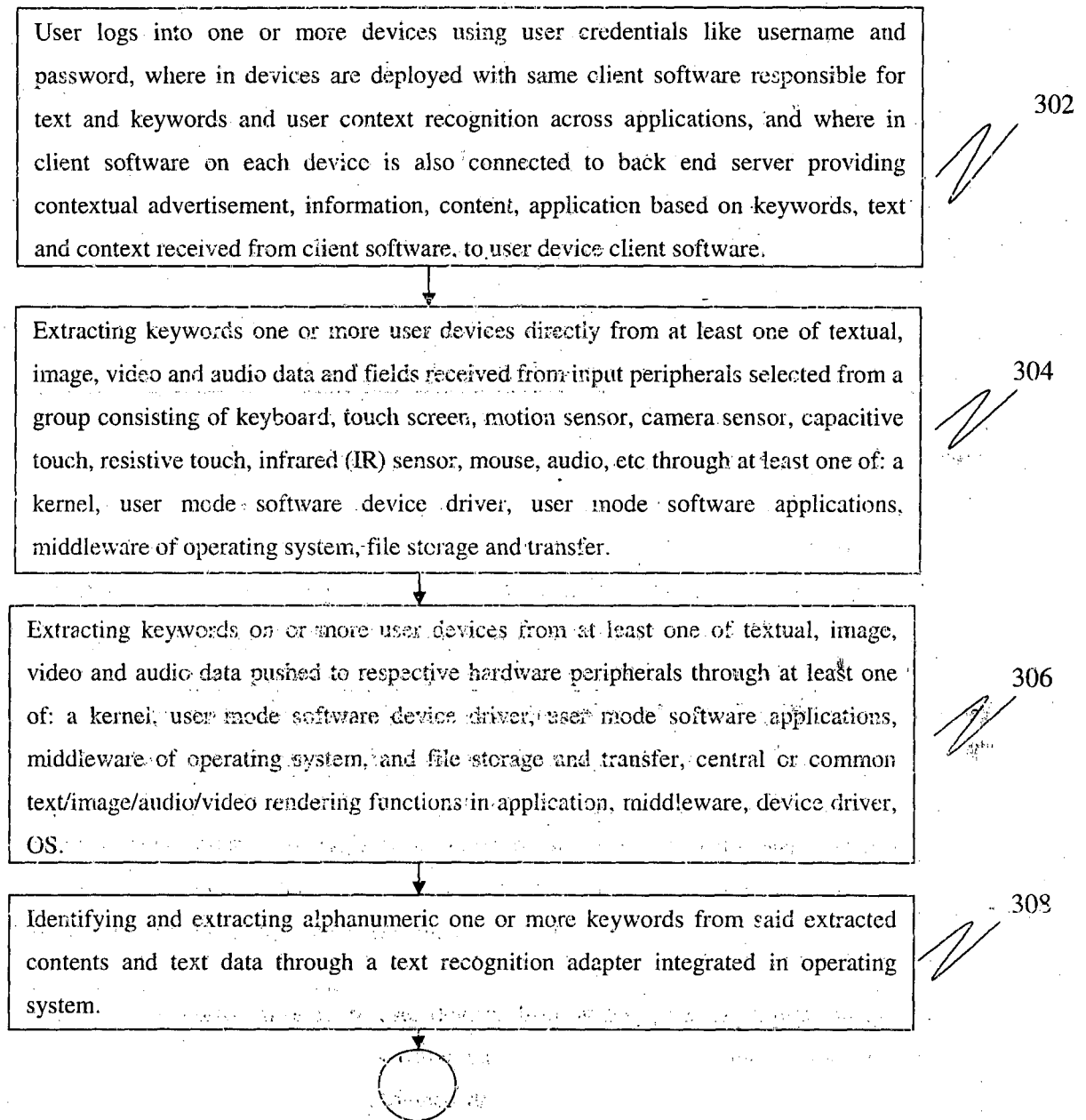
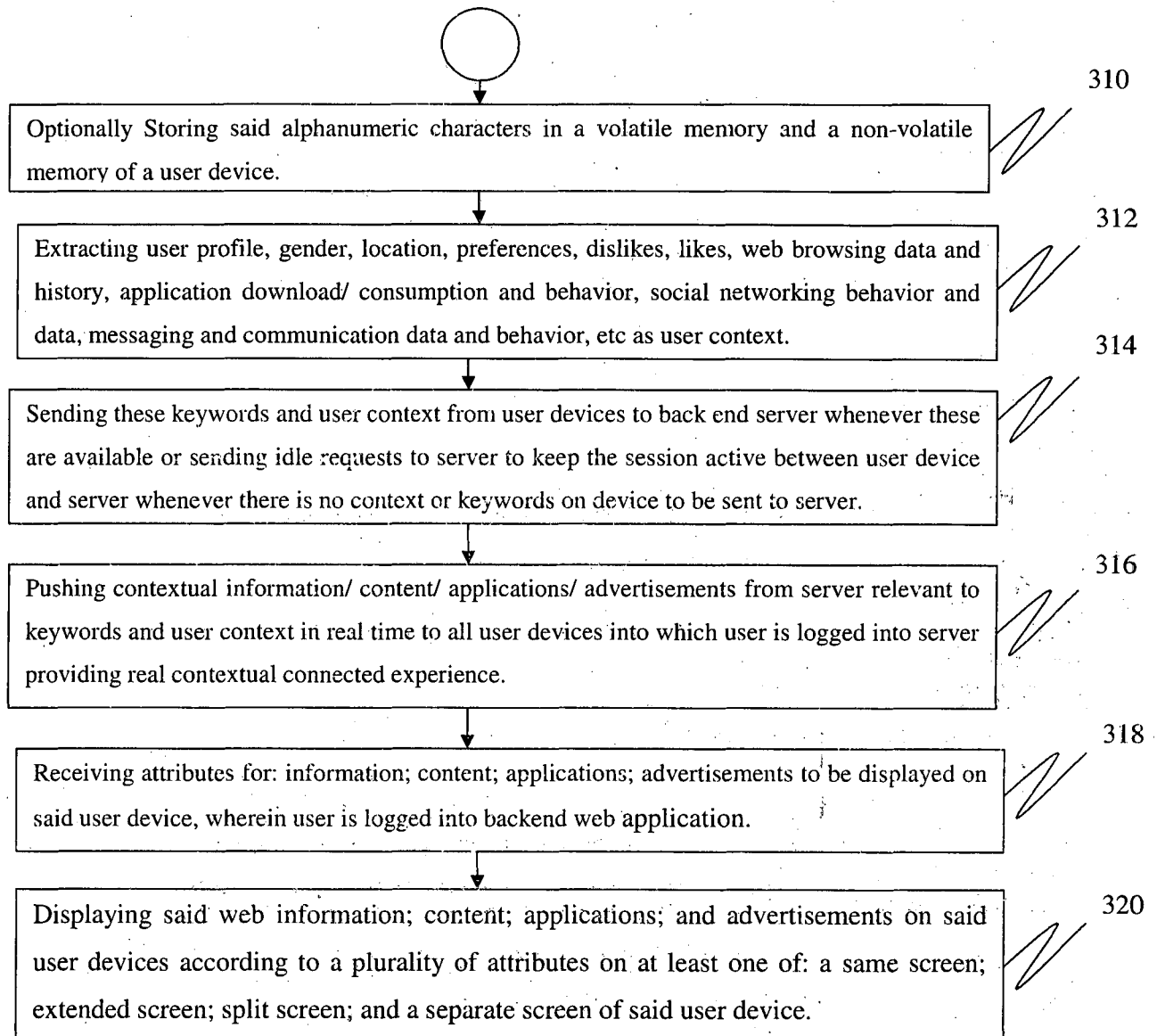
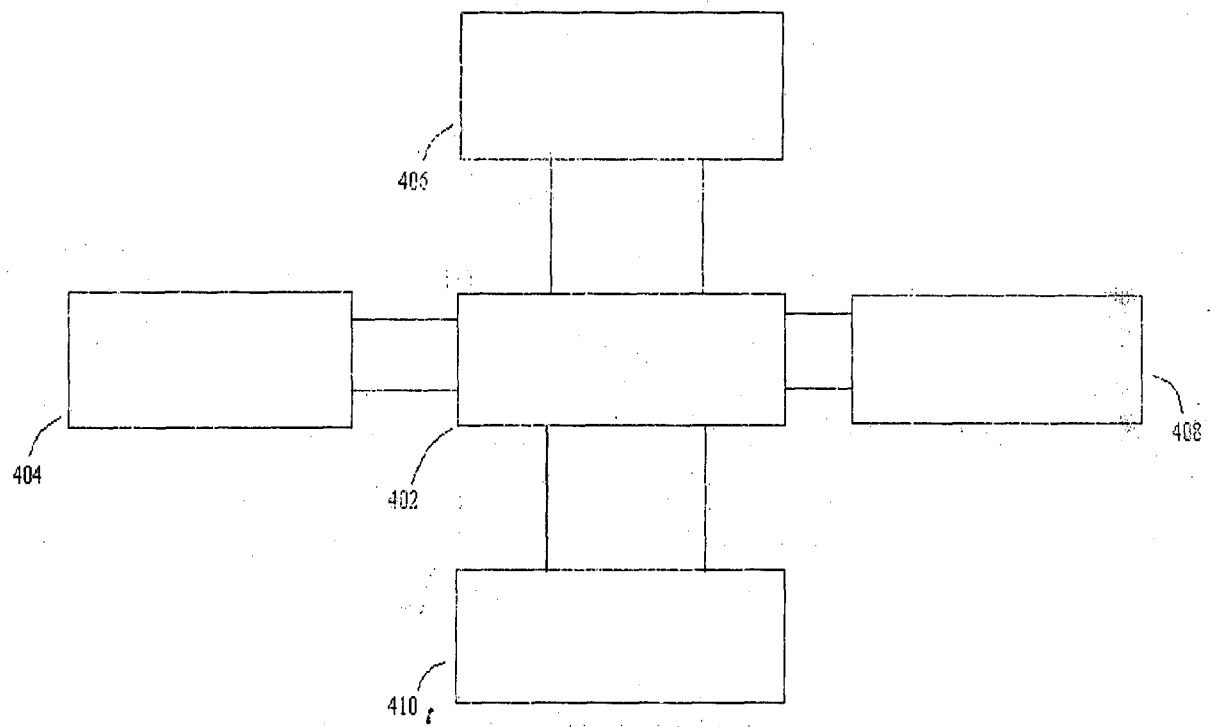


Figure 1

**Figure 2**

**Figure 3A**

**Figure 3B**

**Figure 4**