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- (71) Applicant: **BEAM AUTHENTIC, LLC** [US/US]; 25 Tamalpais Avenue, Suite C, San Anselmo, CA 94960 (US).
- (72) Inventor: **ZENOFF, Andrew**; 25 Tamalpais Avenue, Suite C, San Anselmo, CA 94960 (US).
- (74) Agents: **LIU, Yanyi** et al.; Wilson Sonsini Goodrich & Rosati, 650 Page Mill Road, Palo Alto, CA 94304-1050 (US).
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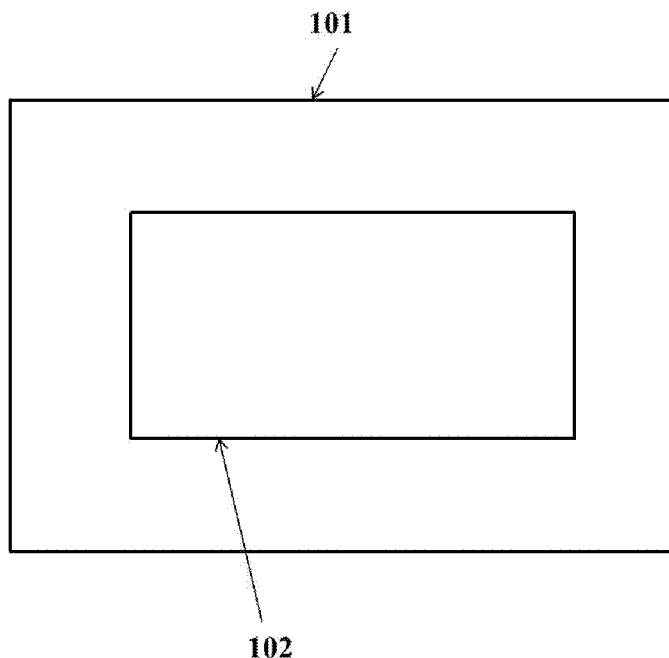


FIG. 1

(57) Abstract: The present disclosure provides methods and computer systems for displaying or projecting media on a remote visual curvilinear display. In a computer system, a computer server may be in network communication with an electronic device of a user. One or more parameters associated with the user may be determined. The media may be selected for display or projection by the remote visual curvilinear display device of the user. The media may be selected based on the one or more parameters associated with the user. The media may be directed from the computer server to the electronic device for display or projection on the remote visual curvilinear display. An item of value of the user may be received on the computer server in exchange for the media.



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SYSTEMS FOR HANDLING MEDIA FOR WEARABLE DISPLAY DEVICES**CROSS-REFERENCE**

[0001] This application claims priority to U.S. Provisional Patent Application Serial No. 62/037,994, filed August 15, 2014, U.S. Provisional Patent Application Serial No. 62/038,002, filed August 15, 2014, U.S. Provisional Patent Application Serial No. 62/038,034, filed August 15, 2014, and U.S. Provisional Patent Application Serial No. 62/037,974, filed August 15, 2014, each of which is entirely incorporated herein by reference.

BACKGROUND

[0002] People experience and create all kinds of intentions and expressions which yield different energies and results that affect and impact what their experience of life is like and the results they yield how they feel and what they accomplish throughout their day, week, month and lifetime. Some intentions, expressions and energies are powerful and easily recognizable, while others are more subtle and often only intuitively felt.

[0003] The things one says, thinks and expresses do produce energy and results that impacts a person and the people around a person. Creating more positive intentions, expressions and energy leads to improvements, and favorable results in a person's life and to society as a whole.

[0004] Negative outcomes and negative and/ or not thought out intentions, and negative energy, come in many forms. Developing more positive and focused intentions and expressions, of these intentions and positive energy can take many forms including but not limited to being around positive people, self-talk, uplifting music, inspirational messages, and inspirational books, being around positive people, communicating with positive people, practicing positive affirmations and the like.

[0005] When we emit positive intentions and expressions energy, including but not limited to communications, messages, thoughts, feelings, vibrations and the like, we attract more positives to us. Newton's law of action and reaction may be at play here. When we dwell on the negatives, or do not focus on what positive outcomes we want to have happen, we attract negatives, we also are victim to chance circumstance the collective consciousness, and this creates endless cycles of suffering and repetition that sap our energy strength in the process.

[0006] There are various ways of increasing our positive outcomes as a society and as an individual. The first thing is becoming clear about how our intentions and expressions

impact our lives. The secondly thing is, creating vehicles and methods to support positive intentions, collective conscious expressions, reducing the experience of feeling powerless, having a voice, sharing, feeling connected to the greater whole and a relationship with something bigger than ones small self. Others include, love and accept yourself as you are, free yourself from past resentments and disappointments, letting go of any and all resentment you're hanging onto about everyone and everything else, stop looking for reasons to criticize and blame others for their acts and omissions, letting go of your desire to control others, using your time, energy, and vitality wisely, using creative visualization and imagination to your advantage, not your detriment, developing an attitude of gratitude, being happy, appreciating the moment, and the like.

[0007] With consciousness evolving and a need for its evolution, we as people have the ability and power to impact the outcomes that serve our lives and the greater community in which we live. Be it self, family, group affiliations, neighborhood, city, state, country, globe.

[0008] It may be important to share, give back, feel connected, feel heard, counted and considered while being of service to self and others, and to share this with others.

SUMMARY

[0009] The present disclosure provides display devices with or without sensors that may be worn on a user or an inanimate object. A display device of the present disclosure may be mounted on various objects, such as on or near the head of a user, a vehicle, or building.

Display devices of the present disclosure may provide, individual, customizable, creative self-expression, in the form of images and/or words, which may be shared by the user.

[0010] The present disclosure provides a display device that may enable a user to have self-expression. The self-expression may be changeable. The self-expression may be in the form of words, images and combinations thereof. The display device may also provide a user with the ability to have dynamic individual creative self-expression, in the form of words, images and combinations thereof. The display device may enable connection between the user and one or more other individuals, and may provide other uses, such as being counted, collective expressions and possible manifestation in a variety of different forms.

[0011] A display device can be wearable. The display device can be mountable on a user or an inanimate object. A display device of the present disclosure may be a dynamic life strong band that may be connected to a platform which allows the user to connect socially to the things the user may care about, learn more about things the user may not have known about, take action by donating or offering resources to organizations, charities and events,

and become an individual philanthropist. The display device may be a customizable button or band for self-expression and a customizable dynamic live strong band for expression and social engagement, which may allow for social impact.

[0012] In some examples, the display device is usable by a user for self-expression. The display device can be a button, such as a smart button for self-expression connection, which can enable action and impact. The display device can be worn on an article of clothing of the user, such as a shirt jacket or cap, or other object, such as a bag. The display device can be placed at the rear of a vehicle, such as a car. The display device can be a bumper sticker, such as a digital bumper sticker, on the vehicle.

[0013] The display device can allow for instantaneous customizable self-expression. The display device can be connected to a platform that can allow for social connection, learning and taking action, which may result in social impact.

[0014] The display device may be equipped with a geolocation unit, which can enable the location of the display device to be determined. The geolocation unit can include a global positioning system (GPS) or wireless receiver (e.g., WiFi) for wireless triangulation. This may enable the display device to be used in various locations, such as stadiums, and other settings, such as group events as well as individual everyday life.

[0015] The display device may be connectable to an application (app) on an electronic device of the user. The app can support self-expression and social opportunities around expression, and flowing resources to charities and organizations.

[0016] The display device can have a touchscreen, such as a capacitive touchscreen or a resistive touchscreen. The touchscreen can enable scrolling and creating expressions, animation opportunities for a queue, and for video and full animation.

[0017] The display device can have a display with power management capabilities. The display can be dimmable. For example, the display can dim or turn off and turn on per a schedule, such as a schedule selected by the user, or upon a trigger event, such as upon achieving a given goal (e.g., donation goal).

[0018] The display device can be module to an article of clothing (e.g., cap) or a vehicle. In some examples, the display device is module for a cap or a car.

[0019] In some cases, the display device is not a watch. For example, the display device may not have a primary function of telling time or browsing the internet. The display device may not have a band, such as a wristband.

[0020] The present disclosure also provides applications (apps) that are usable to prepare expressions for display on display devices. The app can enable the user to wear and share

what the user may find important, connect and take action. The app can be a social app that creates community and social experience, in some cases enabling individual philanthropy. The app can enable the user to be a philanthropist. The app can empower the user to connect with other individuals based around expressing what the user may find important. The app may enable social impact.

[0021] The app can enable the user to provide or create expressions within a predefined area. The predefined area may be in the form of a display of the display device (e.g., circle if the display device is a button).

[0022] Expressions can be accessed online or offline. An expression can be online, such as accessible by an electronic device of the user at a remote server, or offline, such as accessible on the electronic device of the user.

[0023] The app can enable the user to set goals (e.g., monthly goals), and provide the user with the opportunity to make donations each time the user uploads a pay-for expression, which may be connected to a charity, organization or event. For example, when the user expresses a pink ribbon for breast cancer treatment or prevention, a fee may flow to a charity associated with breast cancer treatment or prevention and the user can wear that expression relating to breast cancer or treatment.

[0024] The app can permit the user to download expressions. The app can permit the user to download expressions for a fee. The app can permit the user to edit expressions. The app can operate with or without a display device of the present disclosure (e.g., the user can create expressions for display on display devices of other users).

[0025] The app can empower social impact and self-expression, and connecting people around what they care about or want to learn more about. The app can provide geolocation, which can enable the user to identify other users, individuals or entities that are at or in proximity to the user, or at another location. The app can identify what other users are displaying or projecting on their display devices, which can enable the user to identify what may be of interest to other users, such as shared interests.

[0026] The app may illustrate an area that may be representative of the display device or a display of the display device (e.g., button). The user can provide all expressions for display in the area. The expressions may be shared with other users, such as shared online. The app can enable the user to pair with the display device to display an expression on the display device, which may be worn on a shirt, jacket, bag or hat of the user.

[0027] The app can enable a user to: create expressions; browse a library of expressions (e.g., taggable expressions); download expressions; connect to causes, concert or events (e.g.,

breast cancer walk); connect to interest groups; purchase expressions for causes or events; make a donation to a cause or event (e.g., make a donation with a single touch); upload an expression for use by other users; share an expression with other users; receive updates from other users with respect to the other users' causes, events, interests or expressions; or mark causes, events or interests for future review.

[0028] An aspect of the present disclosure provides a method for displaying or projecting media on a remote visual curvilinear display device, comprising (a) bringing a computer server in network communication with an electronic device of a user, which electronic device is in communication with the remote visual curvilinear display device for displaying or projecting the media on the remote visual curvilinear display device; (b) determining one or more parameters associated with the user, wherein the one or more parameters comprise a display and/or location preference or schedule of the user; (c) selecting the media at the computer server for display or projection by the remote visual curvilinear display device of the user, wherein the media is selected based on the one or more parameters associated with the user; (f) directing the media from the computer server to the electronic device for display or projection on the remote visual curvilinear display per the display and/or location preference or schedule of the user; and (e) receiving, at the computer server, an item of value of the user in exchange for the media. The item of value may be received by the user or one or more intermediaries.

[0029] In some embodiments, the remote visual curvilinear display device is flexible. In some embodiments, the display is circular, oval, triangular, square rectangular, or other suitable polygonal. In some embodiments, the remote visual curvilinear display device is mounted on a body of the user. In some embodiments, the remote visual curvilinear display device is not mounted on a wrist of the user. In some embodiments, the remote visual curvilinear display device is mounted on an inanimate object. In some embodiments, the remote visual curvilinear display device includes a display and a support member. In some embodiments, the support member is a button. In some embodiments, the support member includes a pin, clip, hook, loop, lanyard or magnetically attractable lock. In some embodiments, the media comprises an advertisement.

[0030] In some embodiments, the remote visual curvilinear display device further comprises one or more input devices including a microphone, camera, touch screen keypad, keyboard, or a combination thereof. In some embodiments, the method further comprises, after (d), receiving an input comprising a request for one or more additional media, wherein the input is received from the one or more input devices of the remote visual curvilinear

display device. In some embodiments, the input is received from the user. In some embodiments, the input is received from an observer of the remote visual curvilinear display device, wherein the observer is distinct from the user. In some embodiments, the one or more additional media comprises additional advertisements.

[0031] In some embodiments, the method further comprises identifying one or more additional remote visual curvilinear display devices that are distinct from and in proximity to the remote visual curvilinear display device; coordinating the remote visual curvilinear display device with the one or more additional remote visual curvilinear display devices using respective location information of the remote visual curvilinear display device and the one or more additional remote visual curvilinear display devices; and identifying coordinated media for display or projection by the remote visual curvilinear display device and the one or more additional remote visual curvilinear display devices, wherein each display of the remote visual curvilinear display device and the one or more additional remote visual curvilinear display devices displays the coordinated media or a respective portion of the coordinated media. In some embodiments, the method further comprises providing the coordinated media or respective portion of the coordinated media for display or projection on each display of the remote visual curvilinear display device and the one or more additional remote visual curvilinear display devices. In some embodiments, the one or more additional remote visual curvilinear display devices are associated with the user. In some embodiments, the one or more additional remote visual curvilinear display devices are associated with one or more additional users, wherein the one or more additional users are in proximity to the user.

[0032] In some embodiments, the method further comprises tracking media usage information associated with the user on the remote visual curvilinear display device. In some embodiments, the method further comprises creating a dashboard for display or projection on the remote visual curvilinear display device. In some embodiments, the dashboard may show aggregate information based on selections of said media by a plurality of users. In some embodiments, wherein in (a), the computer server is in network communication with the remote visual curvilinear display device through an electronic device of the user.

[0033] Another aspect of the present disclosure provides a computer system for displaying or projecting media on a remote visual curvilinear display, comprising: a communication interface in network communication with an electronic device of a user, which electronic device is in communication with the remote visual curvilinear display device of a user; and a computer processor in communication with the communication interface, wherein the computer processor is programmed to: (i) determine one or more parameters associated with

the user, wherein the one or more parameters comprise a display and/or location preference or schedule of the user; (ii) select the media at the computer server for display or projection by the remote visual curvilinear display device of the user, wherein the media is selected based on the one or more parameters associated with the user; (iii) direct the media from the computer server to the electronic device for display or projection on the remote visual curvilinear display per the display and/or location preference or schedule of the user; and (iv) receive, at the computer server, an item of value of the user in exchange for the media. The item of value may be received by the user or one or more intermediaries.

[0034] In some embodiments, the remote visual curvilinear display device is flexible. In some embodiments, the display is circular, oval, triangular, square rectangular, or other suitable polygonal. In some embodiments, the remote visual curvilinear display is circular, oval, triangular, square rectangular, or other suitable polygonal. In some embodiments, the remote visual curvilinear display device is mounted on a body of the user. In some embodiments, the remote visual curvilinear display device is mounted on an inanimate object. In some embodiments, the remote visual curvilinear display device includes a display and a support member. In some embodiments, the support member includes a button, a pin, a clip, a hook, a loop, a lanyard or a magnetically attractable lock. In some embodiments, the media comprises advertisements.

[0035] In some embodiments, the remote visual curvilinear display device further comprises one or more input devices including microphone, camera, touch screen keypad, keyboard, or a combination thereof. In some embodiments, the computer processor is further programmed to, after (iii), receive an input comprising a request for one or more additional media, wherein the input is received from the one or more input devices of the remote visual curvilinear display device. In some embodiments, the input is received from the user. In some embodiments, the input is received from an observer of the remote visual curvilinear display device, wherein the observer is distinct from the user. In some embodiments, the one or more additional media comprises additional advertisements.

[0036] In some embodiments, the computer processor is further programmed to identify one or more additional remote visual curvilinear display devices that are distinct from and in proximity to the remote visual curvilinear display device; coordinate the remote visual curvilinear display device with the one or more additional remote visual curvilinear display devices using respective location information of the remote visual curvilinear display device and the one or more additional remote visual curvilinear display devices; and identify coordinated media for display or projection by the remote visual curvilinear display device

and the one or more additional remote visual curvilinear display devices, wherein each display of the remote visual curvilinear display device and the one or more additional remote visual curvilinear display devices displays the coordinated media or a respective portion of the coordinated media. In some embodiments, the computer processor is further programmed to provide the coordinated media or respective portion of the coordinated media for display or projection on each display of the remote visual curvilinear display device and the one or more additional remote visual curvilinear display devices. In some embodiments, the one or more additional remote visual curvilinear display devices are associated with the user. In some embodiments, the one or more additional remote visual curvilinear display devices are associated with one or more additional users, wherein the one or more additional users are in proximity to the user.

[0037] In some embodiments, the computer processor is further programmed to track media usage information associated with the user on the remote visual curvilinear display device. In some embodiments, the computer processor is further programmed to create a dashboard for display or projection on the remote visual curvilinear display device. In some embodiments, the dashboard may show aggregate information based on selections of said media by a plurality of users. The aggregate information may comprise a trend in feedbacks on an expression or a media from a group of users. In some embodiments, the computer server is in network communication with the remote visual curvilinear display device through an electronic device of the user.

[0038] Another aspect of the present disclosure provides a method for displaying or projecting media on a remote visual curvilinear display device, comprising: (a) bringing a computer server in network communication with a mobile electronic device associated with a user among a network of users, which mobile electronic device is in communication with the remote visual curvilinear display device, wherein the mobile electronic device comprises a display screen having a graphical user interface (GUI) with one or more graphical elements that permit the user to input a request for the media to be displayed or projected by the remote visual curvilinear display device associated with the network of users; (b) identifying the media from a media item among a plurality of media items stored at the computer server, wherein the media item is provided by an individual user in the network of users and includes the media associated with identifying information of the media, which identifying information is stored on the computer server; (c) directing the media from the computer server to the mobile electronic device for display or projection on the remote visual

curvilinear display device; and (d) receiving, at the computer server, an item of value of the user in exchange for the media.

[0039] In some embodiments, the media items are created, shared, or traded by the network of users. In some embodiments, the method further comprises filtering and storing the media items previously created, shared, or traded on the computer server. In some embodiments, the method further comprises receiving, at the computer server, an item of value in exchange for displaying or projecting the media on a remote visual curvilinear display from a user; and directing the media from the computer server to a mobile electronic device in exchange for the item of value for displaying or projecting the remote visual curvilinear display. In some embodiments, the method further comprises receiving an input of selection from a user on a mobile electronic device associated with the user with respect to selecting the media from the one or more media items stored at the computer server, and wherein the input further comprises displaying or projecting the media on the remote visual curvilinear display device per a display and/or location preference or schedule selected by the user. In some embodiments, wherein the method further comprises, at the computer server, broadcasting a notification to respective mobile electronic devices associated with the network of users with respect to the selection of the user.

[0040] In some embodiments, the method further comprises, at the computer server, receiving one or more messages with respect to the media from the network of users. In some embodiments, the one or more messages are related to purchasing or trading the media for display or projection by one or more remote visual curvilinear display devices respectively. In some embodiments, the one or more messages are related to providing feedbacks about the media from the network of users. In some embodiments, the method further comprises, at the computer server, collecting statistics and/or demographic information related to the one or more messages.

[0041] In some embodiments, the remote visual curvilinear display device is flexible. In some embodiments, the remote visual curvilinear display is circular, oval, triangular, square rectangular, or other suitable polygonal. In some embodiments, the remote visual curvilinear display device includes a display and a support member, wherein the support member includes a button, a pin, a clip, a hook, a loop, a lanyard, or a magnetically attractable lock. In some embodiments, the remote visual curvilinear display device is mounted on a body of the user. In some embodiments, the remote visual curvilinear display device is mounted on an inanimate object.

[0042] Another aspect of the present disclosure provides a computer system for displaying or projecting media on a remote visual curvilinear display, comprising: a communication interface in network communication with a mobile electronic device associated with a user among a network of users, wherein the mobile electronic device is in communication with the remote visual curvilinear display device, wherein the mobile electronic device comprises a display screen having a graphical user interface (GUI) with one or more graphical elements that permit the user to input a request for the media to be displayed or projected by the remote visual curvilinear display device associated with the network of users; and a computer processor in communication with the communication interface, wherein the computer processor is programmed to (i) identify the media from a media item among a plurality of media items stored at the computer server, wherein the media item is provided by an individual user in the network of users and includes the media associated with identifying information of the media, which identifying information is stored on the computer server, and (ii) direct the media from the computer server to the mobile electronic device for display or projection on the remote visual curvilinear display device; and (iii) receive, at the computer server, an item of value of the user in exchange for the media.

[0043] In some embodiments, the media items are created, shared, or traded by the network of users. In some embodiments, the computer processor is further programmed to filter and store the media items previously created, shared, or traded on the computer server. In some embodiments, the computer processor is further programmed to receive, at the computer server, an item of value in exchange for displaying or projecting the media on a remote visual curvilinear display from a user; and direct the media from the computer server to a mobile electronic device in exchange for the item of value for displaying or projecting on the remote visual curvilinear display.

[0044] In some embodiments, the computer processor is further programmed to receive an input of selection from a user on a mobile electronic device associated with the user with respect to selecting the media from the one or more media items stored at the computer server, and wherein the input further comprises displaying or projecting the media on the remote visual curvilinear display device per a display and/or location preference or schedule selected by the user.

[0045] In some embodiments, the computer processor is further programmed to broadcast a notification to respective mobile electronic devices associated with the network of users with respect to the selection of the user. In some embodiments, the computer processor is further programmed to receive one or more messages with respect to the media from the

network of users. In some embodiments, the one or more messages are related to purchasing or trading the media for display or projection by one or more remote visual curvilinear display devices respectively. In some embodiments, the one or more messages are related to providing feedbacks about the media from the network of users. In some embodiments, the computer processor is further programmed to collect statistics and/or demographic information related to the messages.

[0046] In some embodiments, the remote visual curvilinear display is flexible. In some embodiments, the remote visual curvilinear display is circular, oval, triangular, square rectangular, or other suitable polygonal. In some embodiments, the remote visual curvilinear display device includes a display and a support member, and wherein the support member includes a button, a pin, a clip, a hook, a loop, a lanyard or a magnetically attractable lock. In some embodiments, the remote visual curvilinear display device is mounted on a body of the user. In some embodiments, the remote visual curvilinear display device is mounted on an inanimate object.

[0047] Another aspect of the present disclosure provides a computer-readable medium comprising machine executable code that, upon execution by one or more computer processors, implements any of the methods above or elsewhere herein.

[0048] Additional aspects and advantages of the present disclosure will become readily apparent to those skilled in this art from the following detailed description, wherein only illustrative embodiments of the present disclosure are shown and described. As will be realized, the present disclosure is capable of other and different embodiments, and its several details are capable of modifications in various obvious respects, all without departing from the disclosure. Accordingly, the drawings and description are to be regarded as illustrative in nature, and not as restrictive.

INCORPORATION BY REFERENCE

[0049] All publications, patents, and patent applications mentioned in this specification are herein incorporated by reference to the same extent as if each individual publication, patent, or patent application was specifically and individually indicated to be incorporated by reference. To the extent publications and patents or patent applications incorporated by reference contradict the disclosure contained in the specification, the specification is intended to supersede and/or take precedence over any such contradictory material.

BRIEF DESCRIPTION OF THE DRAWINGS

[0050] The novel features of the invention are set forth with particularity in the appended claims. A better understanding of the features and advantages of the present invention will be obtained by reference to the following detailed description that sets forth illustrative embodiments, in which the principles of the invention are utilized, and the accompanying drawings (also “figure” and “FIG.” herein), of which:

[0051] FIG. 1 shows a display device with a display screen;

[0052] FIG. 2 shows another display device with a display screen;

[0053] FIG. 3 illustrates a projector bill on a cap;

[0054] FIG. 4 illustrates a block diagram of a relationship analysis engine according to one embodiment of the present disclosure;

[0055] FIG. 5 illustrates a flow diagram of messages transmitted between sender and recipient nodes, in association with different contexts in one embodiment of the present disclosure;

[0056] FIG. 6A illustrates selections of parameters for determining one or more relationships according to one embodiment of the present disclosure; FIG. 6B illustrates an analysis and display of outcomes and observations associated with the selections of FIG. 6A according to one embodiment of the present disclosure;

[0057] FIG. 7A illustrates selections of parameters for determining one or more relationships according to according to one embodiment of the present disclosure; FIG. 7B illustrates an analysis and display of one or more relationship associated with the selections of FIG. 7A according to one embodiment of the present disclosure;

[0058] FIG. 8 illustrates a diagram of waypoints between transitions from one quality of relationship value to another quality of relationship value according to one embodiment of the present disclosure;

[0059] FIG. 9 illustrates another diagram of waypoints between transitions from one quality of relationship value to another quality of relationship value according to one embodiment of the present disclosure;

[0060] FIG. 10 illustrates quality of relationship values and associated relationship indicator having icons that represent past, present, and predictive values according to one embodiment of the present disclosure;

[0061] FIGs. 11A-11E illustrate embodiments of a cloud infrastructure that can be used with the display device of the present disclosure;

- [0062] FIGs. 12, 13 and 14 are diagrams illustrating embodiments of a mobile or computing device that can be used with the display device of the present disclosure;
- [0063] FIGs. 15A-15C illustrate various modular bands that can have multi use and be adjustable in various embodiments of the present disclosure;
- [0064] FIGs. 16A-16B illustrate modular hats with a removable screen band and separate removable parts in various embodiments of the present disclosure;
- [0065] FIG. 17 shows a computer server-client environment in accordance with some embodiments;
- [0066] FIG. 18 shows a display mounted on a wristband;
- [0067] FIGs. 19A-19K show a display device that can be mounted on various objects, such as a mobile device;
- [0068] FIG. 20 shows a computer control system that is programmed or otherwise configured to implement methods provided herein;
- [0069] FIG. 21 shows a control unit;
- [0070] FIG. 22 shows a display device that is configured to display media selected by a user;
- [0071] FIG. 23 is a block diagram of an exemplary interface device in accordance with an embodiment of the present disclosure;
- [0072] FIG. 24 is a block diagram of an exemplary system architecture suitable for use in implementing an embodiment of the present disclosure;
- [0073] FIG. 25 is a flow diagram showing an exemplary method for selecting advertising content based on the location of a wearable advertising display system in accordance with an embodiment of the present disclosure;
- [0074] FIG. 26 is a flow diagram showing an exemplary method for selecting advertising content based on a user profile associated with a wearable advertising display system in accordance with an embodiment of the present disclosure;
- [0075] FIG. 27 is a flow diagram showing an exemplary method for facilitating onlooker interaction with a wearable advertising display system in accordance with an embodiment of the present disclosure;
- [0076] FIG. 28 is a flow diagram showing an exemplary method for providing coordinated advertising content via multiple wearable advertising display systems in accordance with an embodiment of the present disclosure;

[0077] FIG. 29 is a flow diagram showing an exemplary method for tracking advertising usage information for billing advertising services provided by a wearable advertising display system in accordance with an embodiment of the present disclosure;

[0078] FIG. 30 is a flow diagram showing an exemplary method for tracking advertising usage information for billing advertising services provided by a wearable advertising display system in accordance with another embodiment of the present disclosure;

[0079] FIG. 31 is a schematic diagram of a processing system according to an embodiment;

[0080] FIG. 32A is an example process that may be implemented using the systems shown in FIG. 31; FIG. 32B is an example software architecture diagram that may be implemented using the systems shown in FIG. 31;

[0081] FIG. 33 shows an example of a wearable device that is a button;

[0082] FIG. 34 shows an example of a wearable device with a magnetic attachment;

[0083] FIG. 35 shows an example of a wearable device with a clip;

[0084] FIG. 36 shows an example of a wearable device with a lanyard;

[0085] FIG. 37 shows a user wearing a wearable device on a shirt of the user;

[0086] FIG. 38 shows a charger for charging a wearable device;

[0087] FIGs. 39A and 39B show exploded views of another example of a wearable device;

[0088] FIGs. 40A and 40B show exploded side and cross-section views, respectively, of another example of a wearable device;

[0089] FIGs. 41A and 41B show schematics of another example of a wearable device;

[0090] FIG. 42 shows a display device mounted on a rear windshield of a vehicle;

[0091] FIG. 43 is a schematic diagram showing the general components of a market place for sharing and purchasing from wearable devices/screens;

[0092] FIG. 44 is a chart showing the management and flow of information content through different functional aspects or modules of the FIG. 43 market place system;

[0093] FIG. 45 is a schematic diagram of system architecture of a networked computer and communication system and web portals that can be utilized with the FIG. 43 market place;

[0094] FIG. 46 illustrates one embodiment of function components of and software architecture for the FIG. 43 market place;

[0095] FIG. 47 illustrates the interaction of the incoming messages, a collector node, input terminals, and event handlers; and

[0096] FIG. 48 shows a process flow diagram of the grouping tasks described in the present disclosure.

DETAILED DESCRIPTION

[0097] While various embodiments of the invention have been shown and described herein, it will be obvious to those skilled in the art that such embodiments are provided by way of example only. Numerous variations, changes, and substitutions may occur to those skilled in the art without departing from the invention. It should be understood that various alternatives to the embodiments of the invention described herein may be employed.

[0098] The term “media,” as used herein, generally refers to text, sounds, image or video. Media can include a combination of text, sounds, image and/or video. Media can include text and image, text and video, or video. Examples of media include text files, audio files, images files, or video files. Media may be editable by a user.

[0099] As used herein, the term “engine” refers to software, firmware, hardware, or other component that can be used to effectuate a purpose. The engine will typically include software instructions that are stored in non-volatile memory (also referred to as secondary memory). When the software instructions are executed, at least a subset of the software instructions can be loaded into memory (also referred to as primary memory) by a processor. The processor then executes the software instructions in memory. The processor may be a shared processor, a dedicated processor, or a combination of shared or dedicated processors. A typical program will include calls to hardware components (such as I/O devices), which typically requires the execution of drivers. The drivers may or may not be considered part of the engine, but the distinction is not critical.

[00100] As used herein, the term “database” is used broadly to include any known or convenient approach for storing data, whether centralized or distributed, relational or otherwise.

[00101] As used herein, a “mobile device” includes, but is not limited to, a cell phone, such as Apple's iPhone®, other portable electronic devices, such as Apple's iPod Touches®, Apple's iPads®, and mobile devices based on Google's Android® operating system, and any other portable electronic device that includes software, firmware, hardware, or a combination thereof that is capable of at least receiving the signal, decoding if needed, exchanging information with a transaction server to verify the buyer and/or seller's account information, conducting the transaction, and generating a receipt. Typical components of mobile device may include but are not limited to persistent memories like flash ROM, random access

memory like SRAM, a camera, a battery, LCD driver, a display, a cellular antenna, a speaker, a BLUETOOTH® circuit, and WIFI circuitry, where the persistent memory may contain programs, applications, and/or an operating system for the mobile device.

[00102] As used herein, the terms “social network” and “SNET” comprise a grouping or social structure of devices and/or individuals, as well as connections, links and interdependencies between such devices and/or individuals. Members or actors (including devices) within or affiliated with a SNET may be referred to herein as “nodes”, “social devices”, “SNET members”, “SNET devices”, “user devices” and/or “modules”. In addition, the terms “SNET circle”, “SNET group” and “SNET sub-circle” generally denote a social network that comprises social devices and, as contextually appropriate, human SNET members and personal area networks (“PANs”).

[00103] As used herein, the term “wearable device” is anything that can be worn by an individual, it can include a back side that in some embodiments contacts a user’s skin and a face side. Examples of wearable device include a head display/head covering display regardless of form, including but not limited to a cap, hat, crown, arm band, wristband, garment, belt, t-shirt, a screen which can show words and/or images on it attached to or mounted on a user’s head and/or other parts of the body, a holographic display for words or images that can float in front of the forehead, a projected display where the image or words are projected from the bill of the forehead by a projector on a bill, and the like. A wearable device can also include a bag, backpack, or handbag. The term “wearable device” can also be a monitoring device if it includes monitoring elements.

[00104] As used herein, the term “computer” is a device that can be programmed to carry out a finite set of arithmetic or logical operations. The computer can be programmed for a tailored function or purpose. Since a sequence of operations can be readily changed, the computer can solve more than one kind of problem. A computer can include of at least one processing element, typically a central processing unit (CPU) with one form of memory. The processing element carries out arithmetic and logic operations. A sequencing and control unit can be included that can change the order of operations based on stored information. Peripheral devices allow information to be retrieved from an external source, and the result of operations saved and retrieved.

[00105] As used herein, the term “Internet” is a global system of interconnected computer networks that use the standard Internet protocol suite (TCP/IP) to serve billions of users worldwide. It may be a network of networks that may include millions of private, public, academic, business, and government networks, of local to global scope, that are linked by a

broad array of electronic, wireless and optical networking technologies. The Internet carries an extensive range of information resources services, such as the inter-linked hypertext documents of the World Wide Web (WWW) and the infrastructure to support email. The communications infrastructure of the Internet may include its hardware components and a system of software layers that control various aspects of the architecture.

[00106] As used herein, the term “extranet” is a computer network that allows controlled access from the outside. An extranet can be an extension of an organization's intranet that is extended to users outside the organization that can be partners, vendors, suppliers, in isolation from all other Internet users. An extranet can be an intranet mapped onto the public Internet or some other transmission system not accessible to the general public, but managed by more than one company's administrator(s). Examples of extranet-style networks include but are not limited to: LANs or WANs belonging to multiple organizations and interconnected and accessed using remote dial-up; LANs or WANs belonging to multiple organizations and interconnected and accessed using dedicated lines; Virtual private network (VPN) that is comprised of LANs or WANs belonging to multiple organizations, and that extends usage to remote users using special "tunneling" software that creates a secure, in some cases encrypted network connection over public lines, sometimes via an ISP.

[00107] As used herein, the term “Intranet” is a network that is owned by a single organization that controls its security policies and network management. Examples of intranets include but are not limited to: a local area network (LAN); wide-area network (WAN) that may be comprised of a LAN that extends usage to remote employees with dial-up access; WAN that is comprised of interconnected LANs using dedicated communication lines; virtual private network (VPN) that is comprised of a LAN or WAN that extends usage to remote employees or networks using special "tunneling" software that creates a secure, in some cases encrypted connection over public lines, sometimes via an Internet Service Provider (ISP).

[00108] For purposes of the present disclosure, the Internet, extranets and intranets collectively are referred to as (“Network Systems”).

[00109] As used herein, the term “user” includes, but is not limited to, a person that uses devices, systems and methods of the present disclosure. A user may be a person interested in maintaining health, interested in maintaining a healthy lifestyle and/or physiologic balance, interested in monitoring lifestyle conditions, including but not limited to, the way a person goes about daily living including but not limited to, habits, exercise, diet, medical conditions

and treatments, career, financial, emotional status, and the like. The user may be under a physician's care.

[00110] As used herein, the term "sensors" include those devices used for collecting data, such as from a user or an environment of the user. For example, a sensor can be for cardiac monitoring, which generally refers to continuous electrocardiography with assessment of the user's condition relative to their cardiac rhythm. A small monitor worn by an ambulatory user for this purpose is known as a Holter monitor. Cardiac monitoring can also involve cardiac output monitoring via an invasive Swan-Ganz catheter. As another example, a sensor can be used for Hemodynamic monitoring, which monitors the blood pressure and blood flow within the circulatory system. Blood pressure can be measured either invasively through an inserted blood pressure transducer assembly, or noninvasively with an inflatable blood pressure cuff. As another example, a sensor can be used for respiratory monitoring, such as pulse oximetry which involves measurement of the saturated percentage of oxygen in the blood, referred to as SpO₂, and measured by an infrared finger cuff, capnography, which involves CO₂ measurements, referred to as EtCO₂ or end-tidal carbon dioxide concentration. The respiratory rate monitored as such is called AWRR or airway respiratory rate). As another example, a sensor can be used for respiratory rate monitoring through a thoracic transducer belt, an ECG channel or via capnography, and/or neurological monitoring, such as of intracranial pressure. Special user monitors can incorporate the monitoring of brain waves electroencephalography, gas anesthetic concentrations, and bispectral index (BIS), blood glucose monitoring using glucose sensors and the like. As another example, a sensor can be used for child-birth monitoring. This can be performed using sensors that monitor various aspects of childbirth. As another example, a sensor can be used for body temperature monitoring which in one embodiment is through an adhesive pad containing a thermoelectric transducer, and/or stress monitoring to provide warnings when stress levels signs are rising before a human can notice it and provide alerts suggestions. As another example, a sensor can be used for epilepsy monitoring, toxicity monitoring, and/or monitoring general lifestyle parameters.

[00111] Users of the device may connect with potential revenue streams based on what they are expressing on their devices, including but not limited to a walking or traveling billboard. Organizations may hook up with users of the wearable device and/or screen for the purpose of communal expressions.

Systems and methods for displaying or projecting media and expressions on a display device

[00112] An aspect of the present disclosure provides systems and methods for displaying or projecting media on a display device in a computer server-client environment. A computer system for displaying or projecting media on a display device can comprise a communication interface in network communication with an electronic device of a user. The electronic device can be in communication with the display device of a user. The computer system can comprise a computer processor in communication with the communication interface. The computer processor can be programmed to determine one or more parameters associated with the user. The one or more parameters can comprise a display and/or location preference or schedule of the user. The one or more parameters can be determined based on a location of the display device, profile of the user, or a combination thereof. The computer processor can be programmed to select the media at the computer server for display or projection by the display device of the user. The media can be selected based on the one or more parameters associated with the user. The computer processor can be programmed to direct the media from the computer server to the electronic device for display or projection on the display device per the display and/or location preference or schedule of the user. The computer processor can be programmed to receive an item of value of the user in exchange for the media on the computer server.

[00113] The electronic device of the user can be mobile electronic device. For example, the electronic device can be a portable phone (e.g., Smart phone). The display device can be a remote visual curvilinear display.

[00114] The media can comprise advertisements. The display device can comprise one or more input devices including microphone, camera, touch screen keypad, keyboard, or a combination thereof. The computer processor can be further programmed to receive an input comprising a request for one or more additional media. The input can be received from the one or more input devices of the display device. The input can be received from the user. The input can also be received from an observer of the display device. The observer may be distinct from the user. In some embodiments, the display device may comprise a thermal sensor or a motion sensor configured to detect the presence of the observer. In some embodiments, the observer can also be registered with the server and the input from the observer can be detected by the computer server. In some embodiments, the one or more additional media can comprise additional advertisements.

[00115] The computer processor can be programmed to identify one or more additional display devices that are distinct from and in proximity to the display device of the user. The computer processor can be programmed to coordinate display device with the one or more additional display devices using respective location information of the display device and the one or more additional display devices. The computer processor can be programmed to identify the coordinated media for display or projection by the display device and the one or more additional display devices. Each display of the display device and the one or more additional display devices can display the coordinated media or a respective portion of the coordinated media. The computer processor can be further programmed to provide the coordinated media or respective portion of the coordinated media for display or projection on each display of the display device and the one or more additional display devices. The one or more additional display devices can be associated with the user. In some embodiments, the one or more additional display devices can be associated with one or more additional users. The one or more additional users can be in proximity to the user. In some embodiments, the computer processor can be further programmed to track media usage information associated with the user on the display device. For example, the media usage information can be tracked by server directly or by an electronic device associated with the display device. The media usage information can comprise location of the display device, the activity of the user, the observer information, and combinations thereof.

[00116] The computer processor can be programmed to create a dashboard for display or projection on the display device. The computer server can be in network communication with the display device through an electronic device of the user.

[00117] The display and/or location preference or schedule of the user can be a display schedule, location schedule, or both. The user may use the display and/or location preference or schedule to set the manner in which media is displayed or projected. For example, the user may wish media to be displayed or projected during the day, at night, or at other times during the day, week, month, or year. The user may wish media to be displayed or projected at random points, upon manual input by the user, or both. The user may wish the media to be displayed or projected in response to an action or trigger, such as the user receiving electronic mail (email), a text message, having a meeting, or other action or trigger. The media may be displayed based on a context of the user.

[00118] The user may wish media to be displayed or projected when the user is at a given location, as may be determined by a geolocation device of the user. The geolocation device may be part of the system or display device.

[00119] The display device can have various shapes and sizes. The display device can be triangular, circular, oval, square, rectangular, other polygonal, or partial shapes or combinations of shapes thereof.

[00120] In some examples, the display device is a visual curvilinear display with circular or oval, or has circular or oval features. For example, the display device is circular or substantially circular, or is of another shape (e.g., square or rectangular) with sides or corners that are partially or fully circular.

[00121] The display device can comprise a display and a support member. The support member can have various shapes and sizes. The support member can be triangular, circular, oval, square, rectangular, or partial shapes or combinations of shapes thereof. The support member can be a button. The support member can include a pin, clip, hook, loop, lanyard or magnetically attractable lock.

[00122] The support member can be a cap, hat, screen, pin, belt, belt buckle, arm band, wristband, necklace, choker necklace, headband, visor, visor protective flap(s), screen camera, or band. The support member can be a surface or support object that is mountable (e.g., removably mountable) on a cap, hat, screen, pin, belt, belt buckle, arm band, wristband, necklace, choker necklace, headband, visor, visor protective flap(s), screen camera, or band.

[00123] The support member can be mountable on a head or torso of the user. In some cases, the support member is not mountable on a wrist, hand and/or arm of the user. The support member can be mountable and removable from the body with a single hand of the user. In an example, the user can mount or remove the support member solely with the user's left or right hand, thus enabling the support member to be readily mounted or removed with little or minimal effort by the user.

[00124] The display device can have a thickness that is less than or equal to about 100 millimeter (mm), 50 mm, 40 mm, 30 mm, 20 mm, 10 mm, 5 mm, or 1 mm. The support member can have a thickness that is less than or equal to about 100 mm, 50 mm, 40 mm, 30 mm, 20 mm, 10 mm, 5 mm, or 1 mm. When the display is mounted on the support member to yield the display device, the overall thickness of the device can be less than or equal to about 100 mm, 50 mm, 40 mm, 30 mm, 20 mm, 10 mm, 5 mm, or 1 mm. In some examples, the overall thickness is from 2 mm to 15 mm, or 5 mm to 10 mm. As an example, the overall thickness is less than or equal to 15 mm, 14 mm, 13 mm, 12 mm, 11 mm or 10 mm.

[00125] The display device can have a cover glass with a substantially small curvature. The display device can be formed of sapphire glass. The display device can be circular, oval,

triangular, square, rectangular, or polygonal, for example. The display device can include a backlight and/or a masked front glass. The display device can be flexible.

[00126] The display device can be a touchscreen, such as a capacitive or resistive touchscreen. This can enable the user to select media, scroll through media, or access other features or functions of the device.

[00127] The device can include one or more buttons to enable a user to access various features or functions of the device. The one or more buttons can be on a side portion of the display or the support member. The one or more buttons can be coupled to the controller.

[00128] The support member can include a pin that pierces an article of clothing (e.g., shirt or hat) or other object (e.g., bag), which can enable the support member to secure against the article of clothing or other object. The pin can have a lock that secures the pin and support member in place. The pin can enable the support member to rotate. As an alternative, the support member can include a magnetically attractable lock. For example, the support member can include a metallic plate that is polarized with one pole of a permanent magnet and a lock that is polarized with another pole of a magnet). When the metallic plate and lock are brought in proximity to one another, a magnetic field force can draw them together, holding the support member in place, such as, for example, against an article of clothing. The display device can be mounted on a body of the user. As an alternative, the support member can be mountable on an inanimate object, such as a vehicle. This can enable the display device to display or project the media on the vehicle. For example, the display device can be a bumper sticker, such as a digital bumper sticker.

[00129] The display can be modular. This can enable the display to couple with other components, such as other displays. In some cases, the system can include one or more additional displays. The one or more additional displays can be in communication with the display. For example, each additional display can be mountable on the support member or a separate support member. If a separate support member is employed, the separate support member may be mountable on the support member, or vice versa. For example, support members can include mounting members (e.g., clips or interlocks) on their sides that enable the support members to be coupled to one another to form larger display devices. Once coupled, the individual display devices can provide separate media or communicate with one another to provide the same media or portions of the same media. For example, portions of a single image can be displayed through the individual devices.

[00130] The computer processor can be programmed to perform various functions. For example, the computer processor can be programmed to receive an item of value in exchange

for displaying or projecting the media on the display device, and direct the media from the computer server to the electronic device in exchange for the item of value for displaying or projecting on the display device. As another example, the computer processor can be programmed to receive an input from the user to edit or create the media.

[00131] Another aspect of the present disclosure provides a method for displaying or projecting media on a display device. The method can comprise bringing a computer server in network communication with an electronic device of a user. The electronic device can be in communication with the display device for displaying or projecting the media on the display device. Next, one or more parameters associated with the user can be determined. The one or more parameters can comprise a display and/or location preference or schedule of the user. In some embodiments, the one or more parameters can be determined based on a location of the display device, profile of the user, or a combination thereof. Next, the media can be selected at the computer server for display or projection by the display device of the user. The media can be selected based on the one or more parameters associated with the user. Next, the media can be directed from the computer server to the electronic device for display or projection on the display per the display and/or location preference or schedule of the user. Next, an item of value can be received on the computer server in exchange for the media.

[00132] In some embodiments, an input can be received, and the input can comprise a request for one or more additional media. The input can be received from one or more input devices of the display device. The input device may comprise a microphone, a camera, a touch screen keypad, a keyboard, or combinations thereof.

[00133] The input can be received from the user. Alternatively, the input can be received from an observer of the display device, and the observer can be distinct from the user. In some embodiments, the one or more additional media can comprise additional advertisements.

[00134] One or more additional display devices can be identified. The one or more additional display devices can be distinct from and in proximity to the display device. Next, the display device can be coordinated with the one or more additional display devices using respective location information of the display device and the one or more additional display devices. Next, the coordinated media can be identified for display or projection by the display device and the one or more additional display devices. Each display of the display device and the one or more additional display devices can display the coordinated media or a respective portion of the coordinated media. Next, the coordinated media or respective

portion of the coordinated media can be provided for display or projection on each display of the display device and the one or more additional display devices.

[00135] The one or more additional display devices can be associated with the user. The one or more additional display devices can be associated with one or more additional users. The one or more additional users can be in proximity to the user. In some embodiments, media usage information associated with the user on the display device can be tracked. For example, the media usage information can be tracked by server directly or by an electronic device associated with the display device. The media usage information can include user location, user activity, observer information, or combinations thereof. In some embodiments, a dashboard can be created for display or projection on the remote visual curvilinear display device. In some embodiments, the computer server can be in network communication with the display device through an electronic device of the user.

[00136] Another aspect of the present disclosure provides systems and methods for displaying or projecting media on a display device. The computer system for displaying or projecting media on a remote visual curvilinear display can comprise a communication interface in network communication with an electronic device associated with a user among a network of users. The electronic device can be in communication with the display device. The electronic device can comprise a display screen having a graphical user interface (GUI) with one or more graphical elements that permit the user to input a request for the media to be displayed or projected by the display device associated with the network of users. The computer system can also comprise a computer processor in communication with the communication interface. The computer processor can be programmed to identify the media from a media item among a plurality of media items stored at the computer server. The media item can be provided by an individual user in the network of users and includes the media associated with identifying information of the media. The identifying information can be stored on the computer server. The computer processor can be programmed to direct the media from the computer server to the electronic device for display or projection on the display device. In some embodiments, the media content can be for display or projection on the remote curvilinear display. For example, the media content or the media can comprise image or text. The identifying information can comprise metadata such as category. The computer processor can be programmed to receive an item of value of the user in exchange for the media on the computer server.

[00137] The media items can be created, shared, or traded by the network of users. In some embodiments, the computer processor can be further programmed to filter and store the

media items previously created, shared, or traded on the computer server. In some embodiments, the computer processor can be further programmed to receive an item of value on the computer server. The item of value can be in exchange for displaying or projecting the media on a display device from a user. In some embodiments, the computer processor can be further programmed to direct the media from the computer server to an electronic device in exchange for the item of value for displaying or projecting on the display device. In some embodiments, the item of value can be for purchasing or trading an expression. The item of value can be money, e-money, or another media used for trading the media. The item of value can be related to purchasing the media for causes and/or events. The causes, events, and/or interests can comprise sports events, philanthropic causes, environment protections, charity events, user's favorite concerts/events/activities/celebrity's updates on social media, and/or user's favorite brands promotions.

[00138] The computer processor can be further programmed to receive an input of selection from a user on an electronic device associated with the user with respect to selecting the media from the one or more media items stored at the computer server. The input can further comprise displaying or projecting the media on the display device per a display and/or location preference or schedule selected by the user.

[00139] The computer processor can be further programmed to broadcast a notification to respective electronic devices associated with the network of users with respect to the selection of the user. In some embodiments, the computer processor can be further programmed to receive one or more messages with respect to the media from the network of users. In some embodiments, the one or more messages can be related to purchasing or trading the media for display or projection by one or more remote visual curvilinear display devices respectively. In some embodiments, the one or more messages can be related to providing feedbacks about the media from the network of users. In some embodiments, the computer processor can be further programmed to collect statistics and/or demographic information related to the messages.

[00140] Another aspect of the present disclosure provides a method for displaying or projecting media on a display device. The method can comprise bringing a computer server in network communication with an electronic device associated with a user among a network of users. The electronic device can be in communication with the display device. The electronic device can comprise a display screen having a graphical user interface (GUI) with one or more graphical elements that permit the user to input a request for the media to be displayed or projected by the display device associated with the network of users. Next, the

media can be identified from a media item among a plurality of media items stored at the computer server. The media item can be provided by an individual user in the network of users and can include the media associated with identifying information of the media. The identifying information can be stored on the computer server. In some embodiments, the media content (or the media) can be for display or projection on a display device and can comprise images and/or texts. The media item can also comprise identifying information which can include metadata such as category. Next, the media can be directed from the computer server to the electronic device for display or projection on the display device. Next, an item of value of the user can be received on the computer server in exchange for the media.

[00141] In some embodiments, the media items can be created, shared, or traded by the network of users. Next, the media previously created, shared, or traded on the computer server can be filtered and stored on the computer server. Next, an item of value in exchange for displaying or projecting the media on a display can be received on the computer server from a user. Next, the media can be directed from the computer server to an electronic device in exchange for the item of value for displaying or projecting on the display device. In some embodiments, the item of value can be for purchasing or trading an expression. The item of value can be money, e-money, or another media used for trading the media. The item of value can be related to purchasing the media for causes and/or events. The causes, events, and/or interests can comprise sports events, philanthropic causes, environment protections, charity events, user's favorite concerts/events/activities/celebrity's updates on social media, and/or user's favorite brands promotions.

[00142] In some embodiments, an input of selection from a user can be received on an electronic device associated with the user with respect to selecting the media from the one or more media items stored at the computer server. The input can further comprise displaying or projecting the media on the display device per a display and/or location preference or schedule selected by the user. In some embodiments, a notification with respect to the selection of the user can be broadcasted to respective electronic devices associated with the network of users.

[00143] In some embodiments, one or more messages with respect to the media from the network of users can be received on the computer server. The one or more messages can be related to purchasing or trading the media for display or projection by one or more display devices respectively. The one or more messages can be related to providing feedbacks about

the media from the network of users. In some embodiments, statistics and/or demographic information related to the one or more messages can be collected on the computer server.

[00144] Reference will now be made to the figures, wherein like numerals refer to like parts throughout. It will be appreciated that the figures and features therein are not necessarily drawn to scale.

[00145] FIG. 1 shows a display device 101 with a display screen 102. The display device 101 can be as described above. The display screen 102 can have various shapes and sizes. For example, the display screen 102 can be curvilinear (e.g., circular or oval). The display device 101 and the display screen 102 can have various form factors. For example, the display device 101 can be in the form of a pin or button.

[00146] FIG. 2 shows a display device 103 with a display screen 104. The display device 103 can be as described above. The display screen 104 can have various shapes and sizes. For example, the display screen 104 can be curvilinear (e.g., circular or oval). The display device 103 further includes a sensor 105. The sensor 105 can capture various signals from the user or an environment of the user, such as light or sound. The sensor 105 can be a camera, which can capture images or video from the user or other objects, such as other individuals. The display device 103 and the display screen 104 can have various form factors. For example, the display device 103 can be in the form of a pin or button.

[00147] The present disclosure provides a wearable device that can provide the ability to have self-expression, with the self-expression being changeable, and is in the form of words, images and combinations thereof.

[00148] In an embodiment, the wearable device provides the ability to have individual creative self-expression, with the self-expression being changeable, and is in the form of words, images and combinations thereof.

[00149] In another embodiment, the wearable device provides the ability to have dynamic individual creative self-expression, in the form of words, images and combinations thereof, and enables connection.

[00150] In another embodiment, the present disclosure provides a wearable device that provides an ability to have dynamic individual creative self-expression, in the form of words, images and combinations thereof, and enables manifestation in a variety of different forms.

[00151] In one embodiment, the present disclosure provides a wearable, customizable digital display device that combines technology and fashion to offer the user an opportunity for creative self-expression, connection and manifestation. A wearable device of the present

disclosure can provide a tangible delivery system of a message and/ or figure to create expression.

[00152] The wearable device can display images, complex words and messages, and text, uploads, displays, ends wirelessly. The wearable device can use a user's or a third party's mobile device to communicate. The wearable device is in communication with the mobile device.

[00153] In one embodiment the wearable device is a crown that may change color based on information received. Sensors can be included in the wearable device.

[00154] In various embodiments the wearable device can include a display or screen that can be flexible. In other embodiments the wearable device can be utilized by a wearable device user with an ability to impact positive social and environmental change through intentionally and expression from personal to global. In one embodiment the wearable distal is a customizable worn for the purpose of self-expression and the greater good. It can be used to express, connect and manifest positive change.

[00155] Display devices of the present disclosure can provide individuals with the opportunity to voice and express what is important to them via wearable devices, and in their vehicles, mini customizable billboards. Display devices of the present disclosure can provide individuals with the opportunity to be heard, counted and has their opinions and intentions mean something through creative customizable self-expression which they can wear or use in their vehicles.

[00156] Display devices of the present disclosure can support individuals collectively creating outcomes for their lives. Such devices can also enable individuals to have positive experiences and create all kinds of intentions and expressions which yield different energies and results that effect and impact what their experience of life is like, the results of how they feel and what they accomplish throughout their day, week, month and lifetime. Some intentions, expressions and energies are powerful and easily recognizable, while others are more subtle and often only intuitively felt.

[00157] Wearable devices of the present disclosure can provide the opportunity to support connection, being counted, in an aggregate dashboard of all the users of the display device to reflect the collective mood and different expressions of the users. In one embodiment users of the device connect with potential revenue streams based on what they are expressing on their devices, including but not limited to a walking or traveling billboard. Organizations may be able to connect with users of wearable devices for the purpose of communal expressions.

[00158] Modular displays of the present disclosure can be coupled to various support members. FIGs. 15A-15C illustrate various modular bands that can have multi use and be adjustable. FIGs. 16A-16B illustrate modular hats with a removable screen band and separate removable parts.

[00159] The display and/or support member can be flexible. This can enable a user to bend or twist the display and/or support member, as desired. The user can shape the display and/or support member into any desired or predetermined shape or configuration.

[00160] In some examples, the support member is formed of a polymeric material, such as a thermoplastic. The display can be formed of a light emitting diode (LED), such as an organic LED (OLED). The controller can include a printed circuit board (PCB) that can be flexible. As an alternative, the display is a projector that can project the media to a display surface, such as an article of clothing or other object (e.g., display screen). For example, the display can include a projector bill on a cap, as shown in FIG. 3.

[00161] The system can include an energy storage device, such as a battery, operatively coupled to the display and/or the controller. The battery can be a solid state battery, such as a lithium ion battery. The battery can be chargeable, such as through a charging port of the system, e.g., through a universal serial bus (USB) port. As an alternative or in addition to, the battery can be inductively chargeable.

[00162] The display can be removable from the support member. As an alternative, the display is not removable from the support member.

[00163] The system can include a communications bus for bringing the display in communication with the controller. The communications bus can be a circuit board, such as a PCB. The communications bus can be mounted on the support member. In some examples, the communications bus includes a communications interface (e.g., Bluetooth or WiFi) that brings the display in wireless communication with the controller.

[00164] The controller can be mounted on the support member. In some examples, the controller is unitary or integrated with the support member. As an alternative, the controller can be separable from the support member.

[00165] The system can include one or more sensors. A sensor among the one or more sensors can be an optical, pressure or proximity sensor. The sensor can be in communication with the controller.

[00166] The system can include a camera in communication with the controller. The camera can be a charge-coupled camera (CCD). The camera can enable capture of images or

video of the user or other objects, such other individuals. This can enable the system to gauge response to the media.

[00167] The controller can be programmed to orient the media such that it is displayed or projected through the display at an orientation selected by the user. This can enable the user to mount the support member on a body of the user without concern for the media being displayed or projected in an intended manner. As an alternative or in addition to, the controller can be programmed to orient the media such that it is displayed or projected through the display along a direction that is parallel to the gravitational acceleration vector.

[00168] The system can include a gyroscope. The gyroscope can enable the controller to determine the orientation of the display.

[00169] The system can include an acceleration member that measures proper acceleration. The acceleration member can be an accelerometer. The acceleration member can be operatively coupled (e.g., in communication with) the controller.

[00170] The system can enable the user to create media. For example, the user can select a picture and modify the picture to generate media for display. The media can be created on a mobile electronic device of the user, such as a portable computer or Smart phone.

[00171] Display devices (e.g., wearable devices) of the present disclosure can include various features. A display device can have a display with a touchscreen (e.g., capacitive touchscreen), a GPS, and an accelerometer. The accelerometer may be used, for example, for movement detection and power management, as well as making sure that an image (or expression) on the display is always properly oriented (e.g., north/south or up/down). The display can be for customizable self-expression and connecting to a platform to allow for connection options. The display device may be readily mountable on the user or other object, and may be readily removable from the user or other object. The display device may be mountable with a magnet, which can allow the user to mount and remove the display device without having to take of the magnets. The display device can have an energy storage unit, such as a battery. The display device may be at least partially or fully powered by solar energy. In such a case, the display device can include solar cells. The display device may have an electronic paper display ("E ink") which may have electrophoretic ink. Such a display may be a bi-stable display that may be usable for reduced or low power consumption.

[00172] In some embodiments, the computer server-client environment can comprise client-side processing executed on one or more mobile devices, and server-side processing executed on a computer server. The one or more mobile devices can communicate with the computer server through one or more networks. The one or more mobile devices can be

associated with one or more users. As shown in FIG. 17, one or more display devices (e.g., wearable displays, flexible displays, remote visual curvilinear display, mobile displays) can be further associated with the one or more users.

[00173] With continued reference to FIG. 17, multiple display devices can be in communication with a computer server through electronic devices of users. The computer server can facilitate the generation, storage and sharing of media. In some examples, a user views media on a first display device and requests a copy of the media on an electronic device of the user. The computer server provides a copy of the media to the user for display on a display device of the user (e.g., visual curvilinear display device). The computer server may retrieve an item of value from the user, such as a donation.

[00174] In some embodiments, the computer server can comprise one or more processors, one or more databases, and a communication interface (e.g., I/O interface) to one or more mobile devices, one or more display devices, and/or one or more external servers. The communication interface to one or more mobile devices and/or display devices can facilitate the processing of input and output associated with the mobile devices and/or display devices. The communication interface to external servers can facilitate communications with the external services (e.g., merchant websites, credit card companies, social network platforms, advertisement services, and/or other processing services).

[00175] One or more processors can obtain requests for performing account operations from one or more mobile devices and/or display devices, process the requests, identify data associated with the user account on the one or more mobile devices and/or display devices. The database stores various information, including but not limited to, account information associated with each user, device information associated with each user account, media/expression information associated with each user account, and usage data associated with each user account on a certain mobile device. The database may also store a plurality of record entries relevant to the activities of respective accounts of each user (e.g., previously displayed expressions), and mobile devices and display devices associated with each user.

[00176] The present disclosure provides a digital LED, nanotechnology and other related display technology-based button that can combine technology and fashion to offer the user an opportunity for creative self-expression, connection and manifestation. The user has the ability to impact positive social and environmental change through intentionally and expression from personal to global. In one embodiment the digital LED, nanotechnology and other related display technology based wrist band is a customizable digital cap worn for the

purpose of self-expression and the greater good. It can be used to express, connect and manifest positive change.

[00177] The present disclosure provides a digital LED, nanotechnology and other related display technology-based button that can provide: (i) a tangible delivery system of a message and the psychological spiritual intention of the messenger him/herself; (ii) a sense of identity, a pride, uniqueness, a cool factor and the like, (iii) a sense of self, belonging, connection, meaning, purpose, fulfillment, being heard and considered; and (iv) an ability to impact the outcomes that serve their lives and the greater community in which they live.

[00178] The digital LED, nanotechnology and other related display technology based wrist band displays images and text, uploads, displays, ends wirelessly. The digital LED, nanotechnology and other related display technology based wrist band can use a user's or a third party's mobile device to communicate. The digital LED, nanotechnology and other related display technology based wrist band is in communication with the mobile device.

[00179] Sensors can be included in the digital LED, nanotechnology and other related display technology based wrist band. In one embodiment color codes are utilized with the wristband that are displayed to reflect what causes the user is affiliated with and cares about.

[00180] The wristband can be uploaded with mobile devices, desktop computers, other devices including but not limited to BEAM devices.

[00181] As non-limiting examples, the wristband can display a variety of different messages, cause-based intentions such as a breast cancer ribbon, rainbow GLTG, and the like.

[00182] The present disclosure provides a digital LED, nanotechnology and other related display technology-based wrist band that can combine technology and fashion to offer the user an opportunity for creative self-expression, connection and manifestation. The user has the ability to impact positive social and environmental change through intentionally and expression from personal to global. In one embodiment the digital LED, nanotechnology and other related display technology based wrist band is a customizable digital cap worn for the purpose of self-expression and the greater good. It can be used to express, connect and manifest positive change.

[00183] The present disclosure provides a digital LED, nanotechnology and other related display technology-based wrist band that provides: (i) a tangible delivery system of a message and the psychological spiritual intention of the messenger him/herself; (ii) a sense of identity, a pride, uniqueness, a cool factor and the like, (iii) a sense of self, belonging,

connection, meaning, purpose, fulfillment, being heard and considered; and (iv) an ability to impact the outcomes that serve their lives and the greater community in which they live.

[00184] The digital LED, nanotechnology and other related display technology based wrist band displays images and text, uploads, displays, ends wirelessly. The digital LED, nanotechnology and other related display technology based wrist band can use a user's or a third party's mobile device to communicate. The digital LED, nanotechnology and other related display technology based wrist band is in communication with the mobile device.

[00185] Sensors can be included in the digital LED, nanotechnology and other related display technology based wrist band.

[00186] In one embodiment color codes are utilized with the wristband that are displayed to reflect what causes the user is affiliated with and cares about.

[00187] The wristband can be uploaded with mobile devices, desktop computers, other devices including but not limited to BEAM devices.

[00188] As non-limiting examples, the wristband can display a variety of different messages, cause based intentions such as a breast cancer ribbon, rainbow GLTG, and the like.

Systems and applications for displaying or projecting media and expressions

[00189] In another aspect, a method for displaying or projecting media on a display device comprises providing a mobile (or portable) electronic device comprising a display screen having a graphical user interface (GUI) with one or more graphical elements that permit a user to input a selection of the media to be displayed or projected by the display device per a display and/or location preference or schedule selected by the user for displaying or projecting the media on the display device. The GUI can include a plurality of graphical elements, such as text and/or images. The graphical elements may be static or dynamic. The display device can be a remote visual curvilinear display. Next, with the aid of the one or more graphical elements on the display screen, the input of the selection of the media can be received from the user. The remote visual curvilinear display can then be directed to display or project the media according to the display and/or location preference or schedule. The GUI can be part of an application (app) executed on the mobile electronic device.

[00190] An item of value can be received from the user in exchange for directing the remote visual curvilinear display to display the media. The item of value can be money, such as a donation. The item of value can be credit or a promise of future service.

[00191] The user can provide an input or selection for the display and/or location preference or schedule. The input or selection can be provided on the GUI. In some cases, the input or selection is provided using one or more graphical elements on the GUI.

[00192] The display device can be separate or remote from the mobile electronic device. For example, the display device is located at least 0.1 m, 1 m, 10 m, or 100 m away from the mobile electronic device. As another example, the display device is located from about 0.01 m to 1 m from the mobile electronic device. As another example, the display device is separate from but in proximity to or attached to the mobile electronic device.

[00193] The display device can be any display device describe herein. For example, the display device can be flexible. The display device can include a display and a support member. The display can be a capacitive or resistive touchscreen. The support member can be a button. The support member can include a pin, clip, hook, loop, lanyard or magnetically attractable lock. The display can be circular or have other shapes, as described elsewhere herein. The display device can be modular. For example, the display device may be connectable to another display device, or the display device can have a removable display or be capable of having one or more additional batteries in addition to an onboard battery.

[00194] The display device can orient the media as necessary such that the media is displayed or projected at an orientation selected by the user. As an alternative or in addition to, the display device can orient the media as necessary such that the media is displayed or projected along a direction that is parallel to the gravitational acceleration vector.

[00195] The display device can be mounted on a body of the user. In some cases, the display device is not mounted on a wrist of the user. The display device can be mounted on an inanimate object.

[00196] The user can provide input to edit the media. The input can be provided in the GUI. The input can include a selection of various properties of the media (e.g., size, color or brightness). The input can include the addition of text and/or other media to the media.

[00197] The user can provide an input of a selection for one or more additional media. The user can provide an input as to an order in which the media and the one or more additional media is to be displayed on the remote visual curvilinear display. Such inputs can be provided by the user through the GUI.

[00198] In another aspect, a mobile electronic device for displaying or projecting media on a display device comprises a display screen having a graphical user interface (GUI) with one or more graphical elements that permit a user to input a selection of the media to be displayed or projected by the display device per a display and/or location preference or schedule selected by the user for displaying or projecting the media on the display device. The mobile electronic device can include a computer processor operatively coupled to the display screen and the display device, wherein the computer processor is programmed to (i) receive the

input of the selection of the media, and (ii) direct the display device to display or project the media according to the display and/or location preference or schedule. The display device can be as described elsewhere herein. The GUI can be part of an application (app) executed on the mobile electronic device.

[00199] The GUI can include one or more graphical elements that permit the user to edit the media. The GUI can permit the user to input the selection by dragging and dropping the media, such as with a pointing device (e.g., mouse) or a finger of the user.

[00200] The controller can be programmed to receive an item of value from the user in exchange for displaying the media on the display device. The item of value can be money, such as a donation. The item of value can be credit or a promise of future service.

[00201] The one or more graphical elements can permit the user to input or select the display and/or location preference or schedule. The computer processor can be programmed to receive the input of the display and/or location preference or schedule.

[00202] The computer processor can be programmed to receive an input of a selection for one or more additional media from the user. The computer processor can be programmed to receive an input from the user as to an order in which the media and the one or more additional media is to be displayed on the remote visual curvilinear display. Such inputs can be received from the user through the GUI.

[00203] Another aspect of the present disclosure provides systems and applications for facilitating the display of expressions on a display device. The expressions can include media.

Flexible displays

[00204] The flexible displays may be composed of one or more flexible layers and may be mounted on top of or under a cover layer. For example, a flexible display may be mounted on top of a rigid support member or may be mounted on the underside of a rigid cover layer. The display may be mounted on a rigid surface or a surface that is not rigid.

[00205] Electronic devices may also be provided with user interface components (input-output components) such as buttons, microphones, speakers, piezoelectric actuators (for receiving electrical input from a user or tactile feedback to users), or other actuators such as vibrators, pressure sensors, and other components. These components may be mounted under portions of a flexible display.

[00206] During operation of the electronic device, the flexibility of the display may allow a user to interact with the component through the display. For example, sound waves from a speaker or localized vibrations from an actuator in an electronic device may pass through the

flexible display. The flexible display may also allow an internal microphone, pressure sensor, or force sensor (or other internal components) to receive external input. For example, a user may deflect a flexible display using a finger or other external object, barometric pressure may be monitored through the flexible display, or sound waves may be received through the flexible display.

[00207] Components may receive input or may supply output through a physically deformed portion of the flexible display (e.g., a deformation that occurs when a user presses on the display to compress the component). In some configurations, a portion of the flexible display may serve as a membrane that forms part of a microphone, speaker, pressure sensor, or other electronic component.

[00208] The ability of a user to compress a component such as a button switch by deforming the flexible display may allow the area of a device available for visual display to be enlarged. For example, the active area of a flexible display may overlap a component such as a button or speaker.

[00209] If desired, a flexible display may be deformed by an internal component to provide audio or tactile feedback to a user. For example, structures inside an electronic device may be pressed against portions of a flexible display to temporarily create an outline for a virtual on-screen button or to temporarily create a grid of ridges that serve to delineate the locations of keys in a keyboard (keypad).

Display components

[00210] The present disclosure provides various displays for use with systems and methods of the present disclosure. In one embodiment, the display includes an electronic circuit stratum with signal transmitting components for transmitting user input signals to a display signal generating device for controlling display information transmitted from the display signal generating device. Signal receiving components receive the display information transmitted from the display signal generating device. Display driving components drive the display layer according to the received display information. A user input receives user input and generates the user input signals. A battery provides electrical energy to the electronic circuit stratum, the user input and display components. The signal receiving components may include first radio frequency receiving components for receiving a first display signal having first display information carried on a first radio frequency and second radio frequency receiving components for receiving a second display signal having second display information carried on a second radio frequency. The display driving components may include signal processor components for receiving the first display signal and the second

display signal and generating a display driving signal for simultaneously displaying the first display information at a first location on the display and the second display information at a second location on the display stratum. At least some of the components in the battery, display, user input and electronic circuit stratum are formed by printing electrically active material to form circuit elements including resistors, capacitors, inductors, antennas, conductors and semiconductor devices.

[00211] The battery may comprise a first current collector layer; an anode layer; an electrolyte layer; a cathode layer and a second current collector layer. The electrolyte material may be microencapsulated, which may make the battery particularly suitable for formation by a printing method, such as inkjet printing, laser printing, magnetically reactive printing, electrostatically reactive printing, or other printing methods that are adaptable to the use of microencapsulated materials. The battery is formed substantially over the entire top surface of the flexible substrate. By this construction, the inventive wireless display device may be formed as thin as possible, while having suitable battery power density, and while being provided with the advantageous electronic shielding qualities provided by the battery layers. The user input may comprise a grid of conductive elements each conductive elements for inducing a detectable electrical signal in response to a moving magnetic field. The user input may comprise a touch screen formed by printing pressure sensitive or capacitance sensitive elements on an insulating layer.

[00212] The display may include conductive leads connected with each light emitting pixel for applying the electrical energy selectively to each light emitting pixel under the control of the display driving components.

[00213] The signal receiving components may include first radio frequency receiving components for receiving a first display signal having first display information carried on a first radio frequency and second radio frequency receiving components for receiving a second display signal having second display information carried on a second radio frequency. The display driving components may include signal processor components for receiving the first display signal and the second display signal and generating a display driving signal for simultaneously displaying the first display information at a first location on the display and the second display information at a second location on the display stratum.

[00214] At least some of the components in the electronic circuit are formed by printing electrically active material to form circuit elements including resistors, capacitors, inductors, antennas, conductors and semiconductor devices.

[00215] A content formatting method of formatting substantially static display content is disclosed that greatly reduces the onboard processing capacity required by the wireless display. This content formatting method is effective for enabling a large number of simultaneous users. The source computer composes the substantially static display content into a video frame of information. The wireless display only needs as much memory as is needed to store the desired number of single frames of video information.

[00216] In one embodiment the display includes light emitting pixels for displaying information. In one embodiment the light emitting pixels are formed by printing a pixel layer of light-emitting conductive polymer.

Use of processors

[00217] In one embodiment, a user's displayed expression, connection and manifest for positive change. profile is received by one or more processors at the back-end where one or more of the following are performed: (i) extraction of unique features of the expression, connection and manifestation, and being counted as part of an aggregate dashboard reflection; (ii) enhances distinguishing aspects of the expression, connection and manifestation; and (iii) compression of data related to the expression, connection and manifestation. The one or more processors can compare received data from the display device with that in a database.

[00218] In one embodiment the display/screen is made larger through the use of optical components and creates a projection exterior to the display/screen. In one embodiment the display/screen can project out in front of the wearer's head. The screen may be clear in color, black, white or change colors when not being used.

[00219] In one embodiment colors are used for the display device as a key code for display devices that provide individual creative self-expression, connection, and manifestation. The display device can include add-ons, a GPS camera and the like.

[00220] The display device can have dimensionality to hold a display or screen coupled or included with it. The display or screen may be removable from the display device.

[00221] As non-limiting examples, the display device can be made of a variety of materials including but not limited to: recycled materials, cloth from different things; plastics; natural materials, an eco-friendly material and the like.

[00222] In one embodiment the display device houses the components, including electronics that drives the display. An energy source, including but limited to one or more batteries, can be included. As non-limiting examples, other energy sources can be utilized including but not limited to: solar; walking or other motion; wind and the like. The wearable

can be chargeable, e.g., plugged in. In one embodiment the display device is powered via mesh technology.

[00223] The display can be positioned on the front, back, side and the like and can be detachable. The display can be made of flexible and non-flexible materials including but not limited to glass, plastics and the like.

[00224] The display can be different sizes shapes. In one embodiment the display is light sensitive and change color relative to light. In one embodiment the display includes a frame to help protect it from sun reflection. In one embodiment the frame is up-loadable to change color. The display can be flat, protrude out to some degree, and be a visor and the like to make it more viewable.

[00225] The display device can adjust to different sizes. The display device can be module and also morph into a different product worn in a different way.

[00226] In one embodiment the display device and/or display/screen can change colors. This can be achieved through the use of LED's and the like. All or a portion of the display device can change color. In one embodiment, the display device includes one or more sensors that pick up different aspects of the wear's energy, brain function, heartbeat, level of stress and busy thinking, and the like.

[00227] In one embodiment the display device it can change colors both at the screen level and the entire display device or embodiment adjacent to the screen which can be based on sound, and other extremities which can influence the user. This may be identical or similar to a sound responsive sculpture.

[00228] The display device can include additional electronic components including but not limited to, a camera, in or behind the screen, GPS functionality and the like, and can do everything that a mobile device can do. In one embodiment, the display device does not need the full power of a mobile device.

[00229] The display device can communicate with a telemetry site with a backend. The telemetry site can include a database of identification references, including user activity, performance and reference information for each user, and/or for each sensor and location. The user activity, performance metrics, data and the like captured by system can be recorded into standard relational databases SQL server, and/or other formats and can be exported in real-time. All communication is done wirelessly.

[00230] The telemetry system provides a vehicle for a user to: (i) set up its profile which can include their basic information, use display devices that provide, individual creative self-expression, connection, manifestation intentions; (ii) create and upload what the user wants to

upload such as images, pictures, text and combinations thereof; and (ii) look at third parties self-expression, connections and manifestations.

[00231] It is noted that when something has political fire or interest they often change their social network profiles. Display devices of the present disclosure may be used for such purposes and as a supplement. Display devices of the present disclosure may be used to join a communal expression, political or social, etc.

[00232] The present disclosure provides an aggregate dashboard of what people are sharing; takes this natural behavior and implement it in the virtual and physical world; uploads social media information, pictures, messages and images; provides a mechanism to communicate with organizations; and connects all of this to different organizations that can then take action.

[00233] Individuals may join community organizations that share similar values and goals, participate in an eco-system of shared expressions, be part of an aggregate dashboard that sees all of this and determines the mood derived from the expressions of users. This may be reflected back into social networks.

[00234] Display devices of the present disclosure can be used to create revenue streams for the user by logging into and sharing personal information with companies that will pay for their message to be worn for periods of time based on exposure. Walking billboards and revenue flow based on wearers impact for advertiser. This may provide the opportunity for paid and unpaid communal expression and advertising for revenue.

Software

[00235] The present disclosure provides software that enables media to be displayed or projected using display devices provided herein. FIG. 4 illustrates a block diagram of a relationship analysis engine 100. The relationship analysis engine 100 can include a controller 105. The controller 105 is coupled to or otherwise associated with several different components, which can contribute to determining and quantifying the quality of one or more relationship between different persons or entities. The controller 105 can include a processor, circuit, software, firmware, and/or any combination thereof. Indeed, any of the components of the relationship analysis engine 100 can include a processor, circuit, software, firmware, and/or any combination thereof. It will be understood that one or more of the components of the relationship analysis engine 100 can be part of or otherwise implemented by the controller 105.

[00236] A data miner 125 is coupled to or otherwise associated with the controller 105 and can mine relationship information on a network (e.g., 197), such as Systems Network. The

data miner 125 can determine or otherwise define a plurality of sender nodes, such as nodes 115. Each sender node represents a sender of a message, as further described in detail below. In addition, the data minder 125 can determine or otherwise define a plurality of recipient nodes, such as nodes 115. Each recipient node represents a receiver of a message, as further described in detail below.

[00237] The data miner 125 can automatically determine one or more contexts 110 in which each message is transmitted between a sender node and a recipient node. A context can include, for example, a work-related context, a personal friendship context, an acquaintance context, a business transaction context, or the like. The data miner 125 can also automatically determine a timing sequence for when each message is transmitted between the sender node and the recipient node.

[00238] An actionable analytics section 150 is coupled to or otherwise associated with the controller 105 and can analyze messages that are transmitted between the sender nodes and the recipient nodes. The messages can be received directly from one or more message queues such as message queues 195, analyzed, and returned to the message queues. Alternatively, the messages can be received over the network 197 by the data miner 125. The actionable analytics section 150 can produce historical analytics 155, real-time analytics 160, and predictive analytics 165 associated with at least one relationship based on the analyzed transmitted messages, the mined relationship information, the one or more contexts 110, and/or the timing sequence. The actionable analytics section 150 can also generate a relationship indicator for the relationship, which can include different icons, patterns, and/or colors representing past, present, and predictive quality of relationship values, as further described in detail below.

[00239] A relationship analyzer can determine one or more waypoints between transitions from one quality of relationship value to another. Such waypoints can be scored using a score builder 170. In addition, the quality of relationship values themselves can be assigned a score using the score builder 170. The scores can be used in determining the past, present, and predictive quality of relationship values, as further described in detail below. The relationship analyzer can be coupled to or otherwise associated with the controller 105, and can determine whether the relationship is productive or non-productive. The determination of whether the relationship is productive or non-productive can be made based on the context in which the message is sent or received. The relationship analyzer can also determine the weak points and/or the strong points of a relationship.

[00240] The analysis engine 100 can include a user interface 140. The user interface 140 can receive input from a user to manually define the sender nodes and the recipient nodes (e.g., 115). In other words, constructs of sender nodes and recipient nodes can be built, which represent the persons or entities that actually send and receive messages. Moreover, the user interface 140 can receive input from a user to manually define one or more contexts 110 in which each message is transmitted between a sender node and a recipient node.

[00241] The analysis engine 100 can further include a corrections implementer 135, which can be coupled to or otherwise associated with the controller 105. The corrections implementer 135 can detect one or more inaccuracies in the mined relationship information and automatically correct such inaccuracies. For instance, if weak points of a relationship should have been assessed as strong points, or vice versa, then the corrections implementer 135 can correct such inaccuracies and thereby improve the understanding of the relationship.

[00242] In some cases, an absence of interaction can be used to draw certain conclusions. An absence of interaction analyzer can be coupled to or otherwise associated with the controller 105, and can detect such absences of interaction. For instance, if a sender node sends a message to a recipient node, and the recipient node fails to reply to the message, then a conclusion can be drawn by the absence of interaction analyzer. The conclusion can be that the recipient is simply unavailable to respond. Alternatively, the conclusion can be that there is a flaw in the relationship between the sender node and the recipient node.

[00243] The actionable analytics section 150 can produce the historical analytics 155, the real-time analytics 160, and the predictive analytics 165 using the corrected inaccuracies of the corrections implementer 135, the absence of interaction detection of the absence of interaction analyzer, and the determination of the relationship analyzer.

[00244] An input application programming interface (API) 180 provides an input interface to the relationship analysis engine 100 from one or more third party applications or software. For example, the input API 180 can allow an interface to multiple modes of data feed including video, voice, and/or text information. In addition, an output API 185 provides an output interface from the relationship analysis engine 100 to one or more third party applications or software. For example, the output API 185 can allow third party applications or software to utilize the analysis engine 100 and display information received from the analysis engine 100 in their own user interface. The analysis engine 100 can provide real-time feedback on the quality of relationships between and among the nodes through the user interface 140, the input API 180, and/or the output API 185.

[00245] The relationship analysis engine 100 can also include a database 190, which can be coupled to or otherwise associated with the controller 105. The database 190 can store any information related to any of the components of the relationship analysis engine 100, including, for example, relationship information mined by the data miner 125, historical analytics 155, real-time analytics 160, predictive analytics 165, scores generated by the score builder 170, suggestions and tracers to display specific exhibits for the scores, and the like.

[00246] The relationship analysis engine 100 can be embodied in various forms. For example, the relationship analysis engine 100 can be operated using a dedicated rack-mount hardware system associated with a datacenter. In some embodiments, the relationship analysis engine 100 operates in association with a computing device or computer. In some embodiments, the relationship analysis engine 100 is a widget that can be installed or otherwise associated with a web page. In some embodiments, the relationship analysis engine 100 is embodied as a smart-phone application. In some embodiments, the relationship analysis engine 100 is an application associated with a social network. In some embodiments, the relationship analysis engine 100 is an add-on for relationship management software such as customer relationship management (CRM) software, vendor resource management (VRM) software, and/or environmental resource management (ERM) software, or the like.

[00247] In an example, FIG. 5 illustrates a flow diagram of messages 210 transmitted between sender nodes (e.g., S1, S2, S3, S4, S5, . . . , Sn, Sn+1) and recipient nodes (e.g., R1, R2, R3, R4, R5, . . . , Rn, Rn+1), in association with different contexts (e.g., C1, C2, C3, C4, C5, and C6).

[00248] The messages 210 are transmitted between the sender nodes and the recipient nodes in accordance with a timing sequence 205. Each of the messages 210 can have associated therewith a context, which can be different from one message to the next. For example, as shown in FIG. 5, the messages sent between S1 and received by R1 and R2 can have a context C1 associated therewith. By way of another example, the messages sent between Sn and recipients R5, Rn, and Rn+1 can have associated therewith contexts C4, C5, and C6, respectively. It will be understood that messages sent from a given sender node can have the same or different contexts.

[00249] The sender nodes are representative of senders of messages, which can be persons, entities, computers, or the like. The recipient nodes are representative of receivers of messages, which can be persons, entities, computers, or the like. Each node can represent a single person or entity, or alternatively, a group of people or entities. For instance, a node can represent a subscriber list to a worldwide audience. The messages 210 can include e-mails,

blogs, short message service (SMS) text messages, posts, or the like, and can be organized as threads.

[00250] The actionable analytics section 150, FIG. 4, can produce the historical analytics 155, the real-time analytics 160, and the predictive analytics 165 pertaining to one or more relationships based on one or more contexts and the timing sequence.

[00251] FIG. 6A illustrates selections of parameters for determining one or more relationships according to an example embodiment of the invention. One or more sender nodes can be selected, such as sender nodes 310. One or more receiver nodes can be selected, such as receiver nodes 315. A time interval of interest 320 can be selected on the time sequence 305. One or more contexts can be selected, such as contexts 325. It will be understood that these are exemplary selections, and any combination of parameters can be selected. The selection can be made, for example, through the user interface 140, the input API 180, and/or the output API 185. In some embodiments, the selection is made algorithmically and/or automatically.

[00252] FIG. 6B illustrates an analysis and display of outcomes and observations associated with the selections of FIG. 6A. After the selection of parameters, outcomes 330 and/or observations 335 can be generated and/or displayed. The outcomes 330 and/or observations 335 are based on the selection of parameters, the mined relationship information, and other determinations as set forth in detail. It will be understood that the relationship analysis engine 100, or components thereof, can produce the outcomes 330 and/or the observations 335.

[00253] The outcomes can include one or more quality of relationship values, such as productivity 340, engagement 345, confidence 350, trust 355, compliance 360, apathy 365, lethargy 370, and/or breakdown 375. The observations 335 can include one or more observations. For example, observation 1 can be “Lack of communication of outcome.” Observation 2 can be “Emphasis on action items.” Observation 3 can be “Partial acknowledgement of purpose.” Observation 4 can be “Disconnected action items.” It will be understood that these are exemplary observations, and other similar or different kinds of observations can be made.

[00254] In addition, details and examples (e.g., 380) can provide further detail and/or examples of the observations 335. The details and examples can include buttons 380, which can be selected so that the further detail and/or examples of the observations 335 and/or outcomes 330 can be displayed.

[00255] FIG. 7A illustrates selections of parameters for determining one or more relationships according to another example embodiment of the invention. One or more quality of relationship values, such as trust 400, can be selected. A time interval of interest 420 can be selected on the time sequence 405. One or more contexts can be selected, such as contexts 425. It will be understood that these are exemplary selections, and any combination of parameters can be selected. The selection can be made, for example, through the user interface 140, the input API 180, and/or the output API 185. In some embodiments, the selection is made algorithmically and/or automatically.

[00256] FIG. 7B illustrates an analysis and display of one or more relationship associated with the selections of FIG. 7A. After the selection of parameters, one or more sender nodes, such as sender nodes 410, can be highlighted or otherwise displayed, which correspond to the prior selections. Moreover, one or more recipient nodes, such as recipient nodes 415, can be highlighted or otherwise displayed, which correspond to the prior selections. It will be understood that the highlighted sender nodes 410 and the highlighted recipient nodes 415 are exemplary, and other similar or different kinds of selections and highlights can be made.

[00257] The determination for which of the sender nodes and recipient nodes are to be highlighted or otherwise displayed is made based on the selection of parameters, the mined relationship information, and other determinations as set forth in detail above. It will be understood that the relationship analysis engine 100, or components thereof, can produce the highlights or otherwise display the sender nodes 410 and/or the recipient nodes 415. Moreover, the sender nodes 410 and/or the recipient nodes 415 can be highlighted or otherwise displayed in accordance with the determinations of quality of relationships, which conform to the selections described above.

[00258] FIG. 8 illustrates a diagram of waypoints between transitions from one quality of relationship value to another quality of relationship value according to some example embodiments. The quality of relationship values can include, for example, trust 510, confidence 505, engagement 520, and/or value creation 515. These quality of relationship values represent values that are similar to or the same as the outcomes of trust 355, confidence 350, engagement 345, and productivity 340, respectively, discussed above with reference to FIG. 6B.

[00259] A relationship can transition from one quality value to any other quality value. For example, the relationship can transition from trust 510 to confidence 505, from confidence 505 to value creation 515, from engagement 520 to trust 510, from confidence 505 to engagement 520, and so forth. In the course of such transitions, the relationship can pass

through various waypoints. In other words, the relationship analyzer, FIG. 4, can determine one or more waypoints between transitions from one quality of relationship value to another quality of relationship value.

[00260] The waypoints can be arranged along different paths. For instance, path 525 can be associated with value creation 515, and along path 525, the relationship can pass through waypoints of acknowledgement, security, and appreciation. The path 525 can continue to path 530, which can also be associated with value creation 515. Along path 530, the relationship can pass through waypoints of validation, purpose, and identification.

[00261] By way of another example, path 535 can be associated with engagement 520, and along path 535, the relationship can pass through waypoints of attachment, satisfaction, and belonging. The path 535 can continue to path 540, which can also be associated with engagement 520. Along path 540, the relationship can pass through waypoints of drive, direction, and connection.

[00262] By way of yet another example, path 545 can be associated with confidence 505, and along path 545, the relationship can pass through waypoints of drive, direction, and connection. The path 545 can continue to path 550, which can also be associated with confidence 505. Along path 550, the relationship can pass through waypoints of attachment, satisfaction, and belonging.

[00263] By way of still another example, path 555 can be associated with trust 510, and along path 555, the relationship can pass through waypoints of validation, purpose, and identification. The path 555 can continue to path 560, which can also be associated with trust 510. Along path 560, the relationship can pass through waypoints of acknowledgement, security, and appreciation.

[00264] It will be understood that the paths and waypoints disclosed herein are exemplary, and other similar paths and waypoints can be associated with the quality of relationship values of trust 510, confidence 505, engagement 520, and/or value creation 515.

[00265] The score builder 170, FIG. 4, can assign a score (e.g., 570) to one or more of the waypoints. The scores among the waypoints can be different in comparison one with another. For example, the score for the waypoint of appreciation along path 525 can be higher than the score for the waypoint of attachment along path 550. When a relationship passes through one of the waypoints, the score builder 170 can assign or otherwise add to the relationship the score associated with the given waypoint. The overall score assigned by the score builder 170 to a given relationship can be used in the determinations made by the relationship analyzer, of FIG. 4, and/or other components of the relationship analysis engine 100.

[00266] Furthermore, the score builder 170 can assign or otherwise add to the relationship a score (e.g., 570) for each quality of relationship value attained by the relationship. For example, a different score can be associated with each of the quality of relationship values of trust 510, confidence 505, engagement 520, and value creation 515, and the associated score can be assigned to the relationship having the particular quality of relationship value. The overall score assigned by the score builder 170 to a given relationship can include this aspect and be used in the determinations made by the relationship analyzer, of FIG. 4, and/or other components of the relationship analysis engine 100.

[00267] For example, the actionable analytics section 150, FIG. 4, can produce the historical analytics 155, the real-time analytics 160, and the predictive analytics 165 pertaining to one or more relationships based on the score of the one or more waypoints, the score for the quality of relationship, and/or the overall score assigned to the relationship. The messages from which relationship information is extracted can be used to determine the different paths and/or waypoints. The messages can be analyzed, categorized, sorted, grouped, and/or tagged in terms of nodes (e.g., sender or receiver), contexts, and/or waypoints.

[00268] FIG. 9 illustrates another diagram of waypoints between transitions from one quality of relationship value to another quality of relationship value according to some example embodiments. The quality of relationship values can include, for example, breakdown 610, lethargy 605, apathy 620, and/or compliance 615. These quality of relationship values can represent values that are similar to or the same as the outcomes of breakdown 375, lethargy 370, apathy 365, and compliance 360, respectively, discussed above with reference to FIG. 6B.

[00269] A relationship can transition from one quality value to any other quality value. For example, the relationship can transition from breakdown 610 to lethargy 605, from lethargy 605 to compliance 615, from apathy 620 to breakdown 610, from lethargy 605 to apathy 620, and so forth. It will also be understood that the relationship can transition from one quality of relationship value illustrated in FIG. 9 to another quality of relationship value illustrated in FIG. 8. It will also be understood that the relationship can transition from one quality of relationship value illustrated in FIG. 8 to another quality of relationship value illustrated in FIG. 9.

[00270] In the course of such transitions, the relationship can pass through various waypoints. In other words, the relationship analyzer, FIG. 4, can determine one or more

waypoints between transitions from one quality of relationship value to another quality of relationship value.

[00271] The waypoints can be arranged along different paths. For instance, emotional path 625 can be associated with breakdown 610, and along path 625, the relationship can pass through waypoints of rejected, insecure, and ignored. The path 625 can continue to mental path 630, which can also be associated with breakdown 610. Along path 630, the relationship can pass through waypoints of criticized, purposeless, and barriers.

[00272] By way of another example, spiritual path 635 can be associated with lethargy 605, and along path 635, the relationship can pass through waypoints of isolated, unfulfilled, and detached. The path 635 can continue to physical path 640, which can also be associated with lethargy 605. Along path 640, the relationship can pass through waypoints of disconnected, struggling, and frustrated.

[00273] By way of yet another example, physical path 645 can be associated with apathy 620, and along path 645, the relationship can pass through waypoints of disconnected, struggling, and frustrated. The path 645 can continue to spiritual path 650, which can also be associated with apathy 620. Along path 650, the relationship can pass through waypoints of isolated, unfulfilled, and detached.

[00274] By way of still another example, mental path 655 can be associated with compliance 615, and along path 655, the relationship can pass through waypoints of criticized, purposeless, and barriers. The path 655 can continue to emotional path 660, which can also be associated with compliance 615. Along path 660, the relationship can pass through waypoints of rejected, insecure, and ignored.

[00275] It will be understood that the paths and waypoints disclosed herein are exemplary, and other similar paths and waypoints can be associated with the quality of relationship values of breakdown 610, lethargy 605, apathy 620, and compliance 615.

[00276] The score builder 170, FIG. 4, can assign a score (e.g., 670) to one or more of the waypoints. The scores among the waypoints can be different in comparison one with another. For example, the score for the waypoint of ignored along path 625 can be higher than the score for the waypoint of rejected along path 660. When a relationship passes through one of the waypoints, the score builder 170 can assign or otherwise add to the relationship the score associated with the given waypoint. The overall score assigned by the score builder 170 to a given relationship can be used in the determinations made by the relationship analyzer, FIG. 4, and/or other components of the relationship analysis engine 100.

[00277] Furthermore, the score builder 170 can assign or otherwise add to the relationship a score for each quality of relationship value attained by the relationship. For example, a different score can be associated with each of the quality of relationship values of breakdown 610, lethargy 605, apathy 620, and/or compliance 615, and the associated score can be assigned to the relationship having the particular quality of relationship value. The overall score assigned by the score builder 170 to a given relationship can include this aspect and be used in the determinations made by the relationship analyzer, of FIG. 4, and/or other components of the relationship analysis engine 100. It will be understood that the score that is added can be a negative score, thereby negatively affecting the overall score assigned to the relationship.

[00278] The actionable analytics section 150, FIG. 4, can produce the historical analytics 155, the real-time analytics 160, and the predictive analytics 165 pertaining to one or more relationships based on the score of the one or more waypoints, the score for the quality of relationship, and/or the overall score assigned to the relationship. The messages from which relationship information is extracted can be used to determine the different paths and/or waypoints. The messages can be analyzed, categorized, sorted, grouped, and/or tagged in terms of nodes (e.g., sender or receiver), contexts, and/or waypoints.

[00279] FIG. 10 illustrates quality of relationship values 705 and an associated relationship indicator 725 having icons (e.g., 710, 715, and 720) that represent past, present, and predictive values, respectively, according to some example embodiments.

[00280] The actionable analytics section 150 can generate the relationship indicator (e.g., 725) for one or more relationships. The relationship indicator 725 includes an indicator for a past quality of relationship value 710 associated with the historical analytics 155, a present quality of relationship value 715 associated with the real-time analytics 160, and a predictive quality of relationship value 720 associated with the predictive analytics 165.

[00281] The relationship indicator can include three adjacent or proximately located icons. For example, a first icon 710 can indicate the past quality of relationship value, a second icon 715 can indicate the present or real-time quality of relationship value, and a third icon 720 can indicate the predictive quality of relationship value. It will be understood that while the icons show a different pattern for each quality of relationship value, alternatively, each icon can show a different color or shape to distinguish one quality of relationship value from another. In some embodiments, a gradient of colors is used such that an individual color within the gradient of colors represents an individual quality of relationship value. Indeed, any differentiating aspect of the icons can be used to allow an observer to quickly distinguish

and identify the quality of relationship value associated with the past, present, and predicted future quality of relationship.

[00282] More specifically, the past quality of relationship value indicated by the first icon 710 includes a representation for productivity 740, engagement 745, confidence 750, trust 755, compliance 760, apathy 765, lethargy 770, and/or breakdown 775. Similarly, the present quality of relationship value indicated by the second icon 715 includes a representation for productivity 740, engagement 745, confidence 750, trust 755, compliance 760, apathy 765, lethargy 770, and/or breakdown 775. The predictive quality of relationship value indicated by the third icon 720 includes a representation for productivity 740, engagement 745, confidence 750, trust 755, compliance 760, apathy 765, lethargy 770, and/or breakdown 775.

Back-end

[00283] The present disclosure provides a telemetry system that can include a microprocessor with at least one central processing unit (CPU) or multiple CPUs, computer memory, interface electronics and conditioning electronics configured to receive a signal from the display device and/or the sensor. In one embodiment, all or a portion of the conditioning electronics are at the display device.

[00284] In one embodiment, the CPU includes a processor, which can be a microprocessor, read only memory used to store instructions that the processor may fetch in executing its program, a random access memory (RAM) used by the processor to store information and a master dock. The microprocessor is controlled by the master clock that provides a master timing signal used to sequence the microprocessor through its internal states in its execution of each processed instruction. In one embodiment, the microprocessor, and especially the CPU, is a low power device, such as CMOS, as is the necessary logic used to implement the processor design. The telemetry system can store information about the user's messages, display and activities in memory.

[00285] This memory may be external to the CPU but can reside in the RAM. The memory may be nonvolatile such as battery backed RAM or electrically erasable programmable read only memory (EEPROM). Signals from the messages, display and/or sensors can be in communication with conditioning electronics that with a filter, with scale and can determine the presence of certain conditions. This conditioning essentially cleans the signal up for processing by CPU and in some cases preprocesses the information. These signals are then passed to interface electronics, which converts the analog voltage or currents to binary ones and zeroes understood by the CPU. The telemetry system can also provide for intelligence in the signal processing, such as achieved by the CPU in evaluating historical data.

[00286] In one embodiment, the actions, expressions and the like of the user wearing the display device can be used for different activities and can have different classifications at the telemetry system.

[00287] The classification can be in response to the user's location, where the user spends it time, messages, and communications, determination of working relationships, family relationships, social relationships, and the like. These last few determinations can be based on the time of day, the types of interactions, comparisons of the amount of time with others, the time of day, a frequency of contact with others, the type of contact with others, the location and type of place where the user is at, and the like. These results are stored in the database.

[00288] The foregoing description of various embodiments of the claimed subject matter has been provided for the purposes of illustration and description. It is not intended to be exhaustive or to limit the claimed subject matter to the precise forms disclosed. Many modifications and variations will be apparent to the practitioner skilled in the art. Particularly, while the concept "component" is used in the embodiments of the systems and methods described above, it will be evident that such concept can be interchangeably used with equivalent concepts such as, class, method, type, interface, module, object model, and other suitable concepts. Embodiments were chosen and described in order to best describe the principles of the invention and its practical application, thereby enabling others skilled in the relevant art to understand the claimed subject matter, the various embodiments and with various modifications that are suited to the particular use contemplated.

Cloud infrastructure

[00289] The present disclosure provides a cloud infrastructure. FIG. 11A represents a logical diagram of the cloud infrastructure. As shown, the Cloud encompasses web applications, mobile devices, personal computer and/or laptops and social networks, such as, Twitter®. ("Twitter®" is a trademark of Twitter Inc.). It will be appreciated that other social networks can be included in the cloud and Twitter® has been given as a specific example. Therefore, every component forms part of the cloud which comprises servers, applications and clients as defined above.

[00290] With reference to FIGs. 11B through 11E, the cloud based system can facilitate adjusting utilization and/or allocation of hardware resource(s) to remote clients. The system can include a third party service provider that can concurrently service requests from several clients without user perception of degraded computing performance as compared to conventional techniques where computational tasks can be performed upon a client or a

server within a proprietary intranet. The third party service provider (e.g., “cloud”) supports a collection of hardware and/or software resources. The hardware and/or software resources can be maintained by an off-premises party, and the resources can be accessed and utilized by identified users over Network System. Resources provided by the third party service provider can be centrally located and/or distributed at various geographic locations. For example, the third party service provider can include any number of data center machines that provide resources. The data center machines can be utilized for storing/retrieving data, effectuating computational tasks, rendering graphical outputs, routing data, and so forth.

[00291] According to an illustration, the third party service provider can provide any number of resources such as data storage services, computational services, word processing services, electronic mail services, presentation services, spreadsheet services, gaming services, web syndication services (e.g., subscribing to a RSS feed), and any other services or applications that are conventionally associated with personal computers and/or local servers. Further, utilization of any number of third party service providers similar to the third party service provider is contemplated. According to an illustration, disparate third party service providers can be maintained by differing off-premise parties and a user can employ, concurrently, at different times, and the like, all or a subset of the third party service providers.

[00292] By leveraging resources supported by the third party service provider, limitations commonly encountered with respect to hardware associated with clients and servers within proprietary intranets can be mitigated. Off-premises parties, instead of users of clients or Network System administrators of servers within proprietary intranets, can maintain, troubleshoot, replace and update the hardware resources. Further, for example, lengthy downtimes can be mitigated by the third party service provider utilizing redundant resources; thus, if a subset of the resources are being updated or replaced, the remainder of the resources can be utilized to service requests from users. According to this example, the resources can be modular in nature, and thus, resources can be added, removed, tested, modified, etc. while the remainder of the resources can support servicing user requests. Moreover, hardware resources supported by the third party service provider can encounter fewer constraints with respect to storage, processing power, security, bandwidth, redundancy, graphical display rendering capabilities, etc. as compared to conventional hardware associated with clients and servers within proprietary intranets.

[00293] The system can include a client device, which can be the display device and/or the display device user’s mobile device that employs resources of the third party service

provider. Although one client device is depicted, it is to be appreciated that the system can include any number of client devices similar to the client device, and the plurality of client devices can concurrently utilize supported resources. By way of illustration, the client device can be a desktop device (e.g., personal computer), mobile device, and the like. Further, the client device can be an embedded system that can be physically limited, and hence, it can be beneficial to leverage resources of the third party service provider.

[00294] Resources can be shared amongst a plurality of client devices subscribing to the third party service provider. According to an illustration, one of the resources can be at least one central processing unit (CPU), where CPU cycles can be employed to effectuate computational tasks requested by the client device. Pursuant to this illustration, the client device can be allocated a subset of an overall total number of CPU cycles, while the remainder of the CPU cycles can be allocated to disparate client device(s). Additionally or alternatively, the subset of the overall total number of CPU cycles allocated to the client device can vary over time. Further, a number of CPU cycles can be purchased by the user of the client device. In accordance with another example, the resources can include data store(s) that can be employed by the client device to retain data. The user employing the client device can have access to a portion of the data store(s) supported by the third party service provider, while access can be denied to remaining portions of the data store(s) (e.g., the data store(s) can selectively mask memory based upon user/device identity, permissions, and the like). It is contemplated that any additional types of resources can likewise be shared.

[00295] The third party service provider can further include an interface component that can receive input(s) from the client device and/or enable transferring a response to such input(s) to the client device (as well as perform similar communications with any disparate client devices). According to an example, the input(s) can be request(s), data, executable program(s), etc. For instance, request(s) from the client device can relate to effectuating a computational task, storing/retrieving data, rendering a user interface, and the like via employing one or more resources. Further, the interface component can obtain and/or transmit data over a Network System connection. According to an illustration, executable code can be received and/or sent by the interface component over the Network System connection. Pursuant to another example, a user (e.g., employing the client device) can issue commands via the interface component.

[00296] In one embodiment, the third party service provider includes a dynamic allocation component that apportions resources, which as a non-limiting example can be hardware

resources supported by the third party service provider to process and respond to the input(s) (e.g., request(s), data, executable program(s), and the like, obtained from the client device.

[00297] Although the interface component is depicted as being separate from the dynamic allocation component, it is contemplated that the dynamic allocation component can include the interface component or a portion thereof. The interface component can provide various adaptors, connectors, channels, communication paths, etc. to enable interaction with the dynamic allocation component.

[00298] With reference to FIG. 11B, a system includes the third party service provider that supports any number of resources (e.g., hardware, software, and firmware) that can be employed by the client device and/or disparate client device(s) not shown. The third party service provider further comprises the interface component that receives resource utilization requests, including but not limited to requests to effectuate operations utilizing resources supported by the third party service provider from the client device and the dynamic allocation component that partitions resources, including but not limited to, between users, devices, computational tasks, and the like. Moreover, the dynamic allocation component can further include a user state evaluator, an enhancement component and an auction component.

[00299] The user state evaluator can determine a state associated with a user and/or the client device employed by the user, where the state can relate to a set of properties. For instance, the user state evaluator can analyze explicit and/or implicit information obtained from the client device (e.g., via the interface component) and/or retrieved from memory associated with the third party service provider (e.g., preferences indicated in subscription data). State related data yielded by the user state evaluator can be utilized by the dynamic allocation component to tailor the apportionment of resources.

[00300] In one embodiment, the user state evaluator can consider characteristics of the client device, which can be used to apportion resources by the dynamic allocation component. For instance, the user state evaluator can identify that the client device is a mobile device with limited display area. Thus, the dynamic allocation component can employ this information to reduce resources utilized to render an image upon the client device since the cellular telephone may be unable to display a rich graphical user interface.

[00301] Moreover, the enhancement component can facilitate increasing an allocation of resources for a particular user and/or client device.

[00302] Referring to FIG. 11D, illustrated is a system that employs load balancing to optimize utilization of resources. The system includes the third party service provider that communicates with the client device (and/or any disparate client device(s) and/or disparate

third party service provider(s)). The third party service provider can include the interface component that transmits and/or receives data from the client device and the dynamic allocation component that allots resources. The dynamic allocation component can further comprise a load balancing component that optimizes utilization of resources.

[00303] In one embodiment, the load balancing component can monitor resources of the third party service provider to detect failures. If a subset of the resources fails, the load balancing component can continue to optimize the remaining resources. Thus, if a portion of the total number of processors fails, the load balancing component can enable redistributing cycles associated with the non-failing processors.

[00304] Referring to FIG. 11E, a system is illustrated that archives and/or analyzes data utilizing the third party service provider. The third party service provider can include the interface component that enables communicating with the client device. Further, the third party service provider comprises the dynamic allocation component that can apportion data retention resources, for example. Moreover, the third party service provider can include an archive component and any number of data store(s). Access to and/or utilization of the archive component and/or the data store(s) by the client device (and/or any disparate client device(s)) can be controlled by the dynamic allocation component. The data store(s) can be centrally located and/or positioned at differing geographic locations. Further, the archive component can include a management component, a versioning component, a security component, a permission component, an aggregation component, and/or a restoration component.

[00305] The data store(s) can be, for example, either volatile memory or nonvolatile memory, or can include both volatile and nonvolatile memory. By way of illustration, and not limitation, nonvolatile memory can include read only memory (ROM), programmable ROM (PROM), electrically programmable ROM (EPROM), electrically erasable programmable ROM (EEPROM), or flash memory. Volatile memory can include random access memory (RAM), which acts as external cache memory. By way of illustration and not limitation, RAM is available in many forms such as static RAM (SRAM), dynamic RAM (DRAM), synchronous DRAM (SDRAM), double data rate SDRAM (DDR SDRAM), enhanced SDRAM (ESDRAM), Synchlink DRAM (SLDRAM), Rambus direct RAM (RDRAM), direct Rambus dynamic RAM (DRDRAM), and Rambus dynamic RAM (RDRAM). The data store(s) of the subject systems and methods is intended to comprise, without being limited to, these and any other suitable types of memory. In addition, it is to be appreciated that the data store(s) can be a server, a database, a hard drive, and the like.

[00306] The management component facilitates administering data retained in the data store(s). The management component can enable providing multi-tiered storage within the data store(s), for example. According to this example, unused data can be aged-out to slower disks and important data used more frequently can be moved to faster disks; however, the claimed subject matter is not so limited. Further, the management component can be utilized (e.g., by the client device) to organize, annotate, and otherwise reference content without making it local to the client device. Pursuant to an illustration, enormous video files can be tagged via utilizing a cell phone. Moreover, the management component enables the client device to bind metadata, which can be local to the client device, to file streams (e.g., retained in the data store(s)); the management component can enforce and maintain these bindings.

[00307] Additionally or alternatively, the management component can allow for sharing data retained in the data store(s) with disparate users and/or client devices. For example, fine-grained sharing can be supported by the management component.

[00308] The versioning component can enable retaining and/or tracking versions of data. For instance, the versioning component can identify a latest version of a document (regardless of a saved location within data store(s)).

[00309] The security component limits availability of resources based on user identity and/or authorization level. For instance, the security component can encrypt data transferred to the client device and/or decrypt data obtained from the client device. Moreover, the security component can certify and/or authenticate data retained by the archive component.

[00310] The permission component can enable a user to assign arbitrary access permissions to various users, groups of users and/or all users.

[00311] Further, the aggregation component assembles and/or analyzes collections of data. The aggregation component can seamlessly incorporate third party data into a particular user's data.

[00312] The restoration component rolls back data retained by the archive component. For example, the restoration component can continuously record an environment associated with the third party service provider. Further, the restoration component can playback the recording.

Mobile devices

[00313] Referring to FIGs. 12, 13 and 14, diagrams are provided illustrating a mobile or computing device that can be used with display devices, systems and methods of the present disclosure.

[00314] Referring to FIG. 12, the mobile or computing device can include a display that can be a touch sensitive display. The touch-sensitive display may be referred to as a “touch screen” or a touch-sensitive display system. The mobile or computing device may include a memory (which may include one or more computer readable storage mediums), a memory controller, one or more processing units (CPU's), a peripherals interface, Network Systems circuitry, including but not limited to RF circuitry, audio circuitry, a speaker, a microphone, an input/output (I/O) subsystem, other input or control devices, and an external port. In some examples, the touch-sensitive display is a capacitive or resistive display. The mobile or computing device may include one or more optical sensors. These components may communicate over one or more communication buses or signal lines.

[00315] It will be appreciated that the mobile or computing device is only one example of a portable multifunction mobile or computing device, and that the mobile or computing device may have more or fewer components than shown, may combine two or more components, or may have a different configuration or arrangement of the components. The various components shown in FIG. 14 may be implemented in hardware, software or a combination of hardware and software, including one or more signal processing and/or application specific integrated circuits.

[00316] Memory may include high-speed random access memory and may also include non-volatile memory, such as one or more magnetic disk storage devices, flash memory devices, or other non-volatile solid-state memory devices. Access to memory by other components of the mobile or computing device, such as the CPU and the peripherals interface, may be controlled by the memory controller.

[00317] The peripherals interface couples the input and output peripherals of the device to the CPU and memory. The one or more processors run or execute various software programs and/or sets of instructions stored in memory to perform various functions for the mobile or computing device and to process data.

[00318] In some embodiments, the peripherals interface, the CPU, and the memory controller may be implemented on a single chip, such as a chip. In some other embodiments, they may be implemented on separate chips.

[00319] The Network System circuitry receives and sends signals, including but not limited to RF, also called electromagnetic signals. The Network System circuitry converts electrical signals to/from electromagnetic signals and communicates with communications Network Systems and other communications devices via the electromagnetic signals. The Network Systems circuitry may include circuitry for performing these functions, including but not

limited to an antenna system, an RF transceiver, one or more amplifiers, a tuner, one or more oscillators, a digital signal processor, a CODEC chipset, a subscriber identity module (SIM) card, memory, and so forth. The Network Systems circuitry may communicate with Network Systems and other devices by wireless communication.

[00320] The wireless communication may use any of a plurality of communications standards, protocols and technologies, including but not limited to Global System for Mobile Communications (GSM), Enhanced Data GSM Environment (EDGE), high-speed downlink packet access (HSDPA), wideband code division multiple access (W-CDMA), code division multiple access (CDMA), time division multiple access (TDMA), BLUETOOTH®, Wireless Fidelity (Wi-Fi) (e.g., IEEE 802.11a, IEEE 802.11b, IEEE 802.11g and/or IEEE 802.11n), voice over Internet Protocol (VoIP), Wi-MAX, a protocol for email (e.g., Internet message access protocol (IMAP) and/or post office protocol (POP)), instant messaging (e.g., extensible messaging and presence protocol (XMPP), Session Initiation Protocol for Instant Messaging and Presence Leveraging Extensions (SIMPLE), and/or Instant Messaging and Presence Service (IMPS)), and/or Short Message Service (SMS)), or any other suitable communication protocol, including communication protocols not yet developed as of the filing date of this document.

[00321] The audio circuitry, the speaker, and the microphone provide an audio interface between a user and the mobile or computing device. The audio circuitry receives audio data from the peripherals interface, converts the audio data to an electrical signal, and transmits the electrical signal to the speaker. The speaker converts the electrical signal to human-audible sound waves. The audio circuitry also receives electrical signals converted by the microphone from sound waves. The audio circuitry converts the electrical signal to audio data and transmits the audio data to the peripherals interface for processing. Audio data may be retrieved from and/or transmitted to memory and/or the Network Systems circuitry by the peripherals interface. In some embodiments, the audio circuitry can also include a headset jack (FIG. 12). The headset jack provides an interface between the audio circuitry and removable audio input/output peripherals, such as output-only headphones or a headset with both output (e.g., a headphone for one or both ears) and input (e.g., a microphone).

[00322] The I/O subsystem couples input/output peripherals on the mobile or computing device, such as the touch screen and other input/control devices, to the peripherals interface. The I/O subsystem may include a display controller and one or more input controllers for other input or control devices. The one or more input controllers receive/send electrical signals from/to other input or control devices. The other input/control devices may include

physical buttons (e.g., push buttons, rocker buttons, etc.), dials, slider switches, and joysticks, click wheels, and so forth. In some alternate embodiments, input controller(s) may be coupled to any (or none) of the following: a keyboard, infrared port, USB port, and a pointer device such as a mouse. The one or more buttons may include an up/down button for volume control of the speaker and/or the microphone. The one or more buttons may include a push button. A quick press of the push button may disengage a lock of the touch screen or begin a process that uses gestures on the touch screen to unlock the device, as described in U.S. patent application Ser. No. 11/322,549, "Unlocking a Device by Performing Gestures on an Unlock Image," filed Dec. 23, 2005, which is hereby incorporated by reference in its entirety. A longer press of the push button may turn power to the mobile or computing device on or off. The user may be able to customize a functionality of one or more of the buttons. The touch screen is used to implement virtual or soft buttons and one or more soft keyboards.

[00323] The touch-sensitive touch screen provides an input interface and an output interface between the device and a user. The display controller receives and/or sends electrical signals from/to the touch screen. The touch screen displays visual output to the user. The visual output may include graphics, text, icons, video, and any combination thereof (collectively termed "graphics"). In some embodiments, some or all of the visual output may correspond to user-interface objects, further details of which are described below.

[00324] A touch screen has a touch-sensitive surface, sensor or set of sensors that accepts input from the user based on haptic and/or tactile contact. The touch screen and the display controller (along with any associated modules and/or sets of instructions in memory) detect contact (and any movement or breaking of the contact) on the touch screen and converts the detected contact into interaction with user-interface objects (e.g., one or more soft keys, icons, web pages or images) that are displayed on the touch screen. In an exemplary embodiment, a point of contact between a touch screen and the user corresponds to a finger of the user.

[00325] The touch screen may use LCD (liquid crystal display) technology, or LPD (light emitting polymer display) technology, although other display technologies may be used in other embodiments. The touch screen and the display controller may detect contact and any movement or breaking thereof using any of a plurality of touch sensing technologies, including but not limited to capacitive, resistive, infrared, and surface acoustic wave technologies, as well as other proximity sensor arrays or other elements for determining one or more points of contact with a touch screen.

[00326] A touch-sensitive display in some embodiments of the touch screen may be analogous to the multi-touch sensitive tablets described in the following U.S. Pat. No. 6,323,846 (Westerman et al.), U.S. Pat. No. 6,570,557 (Westerman et al.), and/or U.S. Pat. No. 6,677,932 (Westerman), and/or U.S. Patent Publication 2002/0015024A1, each of which is hereby incorporated by reference in their entirety. However, a touch screen displays visual output from the portable mobile or computing device, whereas touch sensitive tablets do not provide visual output.

[00327] A touch-sensitive display in some embodiments of the touch screen may be as described in the following applications: (1) U.S. patent application Ser. No. 11/381,313, "Multipoint Touch Surface Controller," filed May 12, 2006; (2) U.S. patent application Ser. No. 10/840,862, "Multipoint Touchscreen," filed May 6, 2004; (3) U.S. patent application Ser. No. 10/903,964, "Gestures For Touch Sensitive Input Devices," filed Jul. 30, 2004; (4) U.S. patent application Ser. No. 11/048,264, "Gestures For Touch Sensitive Input Devices," filed Jan. 31, 2005; (5) U.S. patent application Ser. No. 11/038,590, "Mode-Based Graphical User Interfaces For Touch Sensitive Input Devices," filed Jan. 18, 2005; (6) U.S. patent application Ser. No. 11/228,758, "Virtual Input Device Placement On A Touch Screen User Interface," filed Sep. 16, 2005; (7) U.S. patent application Ser. No. 11/228,700, "Operation Of A Computer With A Touch Screen Interface," filed Sep. 16, 2005; (8) U.S. patent application Ser. No. 11/228,737, "Activating Virtual Keys Of A Touch-Screen Virtual Keyboard," filed Sep. 16, 2005; and (9) U.S. patent application Ser. No. 11/367,749, "Multi-Functional Hand-Held Device," filed Mar. 3, 2006. All of these applications are incorporated by reference herein in their entirety.

[00328] The touch screen may have a resolution in excess of 1000 dpi. In an exemplary embodiment, the touch screen has a resolution of approximately 1060 dpi. The user may make contact with the touch screen using any suitable object or appendage, such as a stylus, a finger, and so forth. In some embodiments, the user interface is designed to work primarily with finger-based contacts and gestures, which are much less precise than stylus-based input due to the larger area of contact of a finger on the touch screen. In some embodiments, the device translates the rough finger-based input into a precise pointer/cursor position or command for performing the actions desired by the user.

[00329] In some embodiments, in addition to the touch screen, the mobile or computing device may include a touchpad (not shown) for activating or deactivating particular functions. In some embodiments, the touchpad is a touch-sensitive area of the device that, unlike the touch screen, does not display visual output. The touchpad may be a touch-sensitive surface

that is separate from the touch screen or an extension of the touch-sensitive surface formed by the touch screen.

[00330] In some embodiments, the mobile or computing device may include a physical or virtual click wheel as an input control device. A user may navigate among and interact with one or more graphical objects (henceforth referred to as icons) displayed in the touch screen by rotating the click wheel or by moving a point of contact with the click wheel (e.g., where the amount of movement of the point of contact is measured by its angular displacement with respect to a center point of the click wheel). The click wheel may also be used to select one or more of the displayed icons. For example, the user may press down on at least a portion of the click wheel or an associated button. User commands and navigation commands provided by the user via the click wheel may be processed by an input controller as well as one or more of the modules and/or sets of instructions in memory. For a virtual click wheel, the click wheel and click wheel controller may be part of the touch screen and the display controller, respectively. For a virtual click wheel, the click wheel may be either an opaque or semitransparent object that appears and disappears on the touch screen display in response to user interaction with the device. In some embodiments, a virtual click wheel is displayed on the touch screen of a portable multifunction device and operated by user contact with the touch screen.

[00331] The mobile or computing device also includes a power system for powering the various components. The power system may include a power management system, one or more power sources (e.g., battery, alternating current (AC)), a recharging system, a power failure detection circuit, a power converter or inverter, a power status indicator (e.g., a light-emitting diode (LED)) and any other components associated with the generation, management and distribution of power in portable devices.

[00332] The mobile or computing device may also include one or more sensors, including, but not limited to, optical sensors. FIG. 14 illustrates how an optical sensor coupled to an optical sensor controller in I/O subsystem. The optical sensor may include charge-coupled device (CCD) or complementary metal-oxide semiconductor (CMOS) phototransistors. The optical sensor receives light from the environment, projected through one or more lens, and converts the light to data representing an image. In conjunction with an imaging module 58 (also called a camera module); the optical sensor may capture still images or video. In some embodiments, an optical sensor is located on the back of the mobile or computing device, opposite the touch screen display on the front of the device, so that the touch screen display may be used as a viewfinder for either still and/or video image acquisition. In some

embodiments, an optical sensor is located on the front of the device so that the user's image may be obtained for videoconferencing while the user views the other video conference participants on the touch screen display. In some embodiments, the position of the optical sensor can be changed by the user (e.g., by rotating the lens and the sensor in the device housing) so that a single optical sensor may be used along with the touch screen display for both video conferencing and still and/or video image acquisition.

[00333] The mobile or computing device may also include one or more proximity sensors. In one embodiment, the proximity sensor is coupled to the peripherals interface. Alternately, the proximity sensor may be coupled to an input controller in the I/O subsystem. The proximity sensor may perform as described in U.S. patent application Ser. No. 11/241,839, "Proximity Detector In Handheld Device," filed Sep. 30, 2005; Ser. No. 11/240,788, "Proximity Detector In Handheld Device," filed Sep. 30, 2005; Ser. No. 13/096,386, "Using Ambient Light Sensor To Augment Proximity Sensor Output"; Ser. No. 11/586,862, "Automated Response To And Sensing Of User Activity In Portable Devices," filed Oct. 24, 2006; and Ser. No. 11/638,251, "Methods And Systems For Automatic Configuration Of Peripherals," which are hereby incorporated by reference in their entirety. In some embodiments, the proximity sensor turns off and disables the touch screen when the multifunction device is placed near the user's ear (e.g., when the user is making a phone call). In some embodiments, the proximity sensor keeps the screen off when the device is in the user's pocket, purse, or other dark area to prevent unnecessary battery drainage when the device is a locked state.

[00334] In some embodiments, the software components stored in memory may include an operating system, a communication module (or set of instructions), a contact/motion module (or set of instructions), a graphics module (or set of instructions), a text input module (or set of instructions), a Global Positioning System (GPS) module (or set of instructions), and applications (or set of instructions).

[00335] The operating system (e.g., Darwin, RTXC, LINUX, UNIX, OS X, WINDOWS, or an embedded operating system such as VxWorks) includes various software components and/or drivers for controlling and managing general system tasks (e.g., memory management, storage device control, power management, etc.) and facilitates communication between various hardware and software components.

[00336] The communication module facilitates communication with other devices over one or more external ports and also includes various software components for handling data received by the Network Systems circuitry and/or the external port. The external port (e.g.,

Universal Serial Bus (USB), FIREWIRE, etc.) is adapted for coupling directly to other devices or indirectly over Network System. In some embodiments, the external port is a multi-pin (e.g., 30-pin) connector that is the same as, or similar to and/or compatible with the 30-pin connector used on iPod (trademark of Apple Computer, Inc.) devices.

[00337] The contact/motion module may detect contact with the touch screen (in conjunction with the display controller) and other touch sensitive devices (e.g., a touchpad or physical click wheel). The contact/motion module includes various software components for performing various operations related to detection of contact, such as determining if contact has occurred, determining if there is movement of the contact and tracking the movement across the touch screen, and determining if the contact has been broken (i.e., if the contact has ceased). Determining movement of the point of contact may include determining speed (magnitude), velocity (magnitude and direction), and/or an acceleration (a change in magnitude and/or direction) of the point of contact. These operations may be applied to single contacts (e.g., one finger contacts) or to multiple simultaneous contacts (e.g., “multitouch”/multiple finger contacts). In some embodiments, the contact/motion module and the display controller also detect contact on a touchpad. In some embodiments, the contact/motion module and the controller detects contact on a click wheel.

[00338] Examples of other applications that may be stored in memory include other word processing applications, JAVA-enabled applications, encryption, digital rights management, voice recognition, and voice replication.

[00339] In conjunction with touch screen, display controller, contact module, graphics module, and text input module, a contacts module may be used to manage an address book or contact list, including: adding name(s) to the address book; deleting name(s) from the address book; associating telephone number(s), e-mail address(es), physical address(es) or other information with a name; associating an image with a name; categorizing and sorting names; providing telephone numbers or e-mail addresses to initiate and/or facilitate communications by telephone, video conference, e-mail, or IM; and so forth.

Display device positioned at a mobile device

[00340] Displays of the present disclosure can be used in various settings. For example, a display can be mounted on a wrist band, as shown in FIG. 18. As another example, a display can be mounted on a mobile device, an article of clothing or other object. FIGs. 19A-19K show a display device that can be mounted on various objects, such as a mobile device. In FIGs. 19A-19E, the display device can be mountable on a mobile device as a case. As a non-limiting example the display device fits like a case that wraps around and is then coupled to

the mobile device, similar to that of a regular mobile device protective case. The case has an OLED and/or flexible OLED. The display device communicates with the mobile device. In one embodiment the display devices are simple screens expressing photos, images, words just like those displayed on a display device.

[00341] The display device can have a curved or non-linear profile. The display device can be flexible. FIGs. 19F and 19G show a display device that is curvilinear. From a side, the display device has a non-linear profile.

[00342] FIGs. 19H-19J shows a display device with a display that is removable from a support member. The display can have mating pins that enable the display to securely mate with the support member. The support member can have a pin that allows the support member to be mounted on an article of clothing, as shown in FIG. 19K.

[00343] In one embodiment the mobile device uses Bluetooth® and/or WiFi to interact and communication with the display device screen. Bluetooth may be Bluetooth low energy.

[00344] In one embodiment the display device is configured to interpret certain Bluetooth profiles, which are definitions of possible applications and specify general behaviors that Bluetooth enabled devices use to communicate with other Bluetooth devices. These profiles include settings to parametrize and to control the communication from start. Adherence to profiles saves the time for transmitting the parameters anew before the bi-directional link becomes effective. There are a wide range of Bluetooth profiles that describe many different types of applications or use cases for devices

[00345] In various embodiments the mobile device and the display device are able to have the following: wireless control of and communication between a mobile phone and a display device; wireless networking between display devices in a confined space and where little bandwidth is required; transfer of files, contact details, calendar appointments, and reminders between devices with OBEX; replacement of previous wired RS-232 serial communications; for low bandwidth applications where higher USB bandwidth is not required and cable-free connection desired; sending small advertisements from Bluetooth-enabled display device advertising hoardings to other, discoverable, Bluetooth devices; dial-up internet access on display devices using the mobile device; short range transmission of health sensor data from display devices; real-time location systems (RTLS) for display devices; and personal security applications. Wi-Fi can also be utilized with similar applications for the display device.

[00346] In one embodiment the display device can be coupled to a Bluetooth adapter that enables the display device to communicate with the mobile device.

[00347] The foregoing description of various embodiments of the claimed subject matter has been provided for the purposes of illustration and description. It is not intended to be exhaustive or to limit the claimed subject matter to the precise forms disclosed. Many modifications and variations will be apparent to the practitioner skilled in the art. Particularly, while the concept “component” is used in the embodiments of the systems and methods described above, it will be evident that such concept can be interchangeably used with equivalent concepts such as, class, method, type, interface, module, object model, and other suitable concepts. Embodiments were chosen and described in order to best describe the principles of the invention and its practical application, thereby enabling others skilled in the relevant art to understand the claimed subject matter, the various embodiments and with various modifications that are suited to the particular use contemplated.

Computer control systems

[00348] The present disclosure provides computer control systems that are programmed to implement methods of the disclosure. **FIG. 20** shows a computer system 2001 that is programmed or otherwise configured to implement methods of the present disclosure. The computer system 2001 includes a central processing unit (CPU, also “processor” and “computer processor” herein) 2005, which can be a single core or multi core processor, or a plurality of processors for parallel processing. The computer system 2001 also includes memory or memory location 2010 (e.g., random-access memory, read-only memory, flash memory), electronic storage unit 2015 (e.g., hard disk), communication interface 2020 (e.g., network adapter) for communicating with one or more other systems, and peripheral devices 2025, such as cache, other memory, data storage and/or electronic display adapters. The memory 2010, storage unit 2015, interface 2020 and peripheral devices 2025 are in communication with the CPU 2005 through a communication bus (solid lines), such as a motherboard. The storage unit 2015 can be a data storage unit (or data repository) for storing data. The computer system 2001 can be operatively coupled to a computer network (“network”) 2030 with the aid of the communication interface 2020. The network 2030 can be the Internet, an internet and/or extranet, or an intranet and/or extranet that is in communication with the Internet. The network 2030 in some cases is a telecommunication and/or data network. The network 2030 can include one or more computer servers, which can enable distributed computing, such as cloud computing. The network 2030, in some cases with the aid of the computer system 2001, can implement a peer-to-peer network, which may enable devices coupled to the computer system 2001 to behave as a client or a server.

[00349] The CPU 2005 can execute a sequence of machine-readable instructions, which can be embodied in a program or software. The instructions may be stored in a memory location, such as the memory 2010. The instructions can be directed to the CPU 2005, which can subsequently program or otherwise configure the CPU 2005 to implement methods of the present disclosure. Examples of operations performed by the CPU 2005 can include fetch, decode, execute, and writeback.

[00350] The CPU 2005 can be part of a circuit, such as an integrated circuit. One or more other components of the system 2001 can be included in the circuit. In some cases, the circuit is an application specific integrated circuit (ASIC).

[00351] The storage unit 2015 can store files, such as drivers, libraries and saved programs. The storage unit 2015 can store user data, e.g., user preferences and user programs. The computer system 2001 in some cases can include one or more additional data storage units that are external to the computer system 2001, such as located on a remote server that is in communication with the computer system 2001 through an intranet or the Internet.

[00352] The computer system 2001 can communicate with one or more remote computer systems through the network 2030. For instance, the computer system 2001 can communicate with a remote computer system of a user. Examples of remote computer systems include personal computers (e.g., portable PC), slate or tablet PC's (e.g., Apple® iPad, Samsung® Galaxy Tab), telephones, Smart phones (e.g., Apple® iPhone, Android-enabled device, Blackberry®), or personal digital assistants. The user can access the computer system 2001 via the network 2030.

[00353] Methods as described herein can be implemented by way of machine (e.g., computer processor) executable code stored on an electronic storage location of the computer system 2001, such as, for example, on the memory 2010 or electronic storage unit 2015. The machine executable or machine readable code can be provided in the form of software. During use, the code can be executed by the processor 2005. In some cases, the code can be retrieved from the storage unit 2015 and stored on the memory 2010 for ready access by the processor 2005. In some situations, the electronic storage unit 2015 can be precluded, and machine-executable instructions are stored on memory 2010.

[00354] The code can be pre-compiled and configured for use with a machine having a processor adapted to execute the code, or can be compiled during runtime. The code can be supplied in a programming language that can be selected to enable the code to execute in a pre-compiled or as-compiled fashion.

[00355] Aspects of the systems and methods provided herein, such as the computer system 2001, can be embodied in programming. Various aspects of the technology may be thought of as “products” or “articles of manufacture” typically in the form of machine (or processor) executable code and/or associated data that is carried on or embodied in a type of machine readable medium. Machine-executable code can be stored on an electronic storage unit, such as memory (e.g., read-only memory, random-access memory, flash memory) or a hard disk. “Storage” type media can include any or all of the tangible memory of the computers, processors or the like, or associated modules thereof, such as various semiconductor memories, tape drives, disk drives and the like, which may provide non-transitory storage at any time for the software programming. All or portions of the software may at times be communicated through the Internet or various other telecommunication networks. Such communications, for example, may enable loading of the software from one computer or processor into another, for example, from a management server or host computer into the computer platform of an application server. Thus, another type of media that may bear the software elements includes optical, electrical and electromagnetic waves, such as used across physical interfaces between local devices, through wired and optical landline networks and over various air-links. The physical elements that carry such waves, such as wired or wireless links, optical links or the like, also may be considered as media bearing the software. As used herein, unless restricted to non-transitory, tangible “storage” media, terms such as computer or machine “readable medium” refer to any medium that participates in providing instructions to a processor for execution.

[00356] Hence, a machine readable medium, such as computer-executable code, may take many forms, including but not limited to, a tangible storage medium, a carrier wave medium or physical transmission medium. Non-volatile storage media include, for example, optical or magnetic disks, such as any of the storage devices in any computer(s) or the like, such as may be used to implement the databases, etc. shown in the drawings. Volatile storage media include dynamic memory, such as main memory of such a computer platform. Tangible transmission media include coaxial cables; copper wire and fiber optics, including the wires that comprise a bus within a computer system. Carrier-wave transmission media may take the form of electric or electromagnetic signals, or acoustic or light waves such as those generated during radio frequency (RF) and infrared (IR) data communications. Common forms of computer-readable media therefore include for example: a floppy disk, a flexible disk, hard disk, magnetic tape, any other magnetic medium, a CD-ROM, DVD or DVD-ROM, any other optical medium, punch cards paper tape, any other physical storage medium

with patterns of holes, a RAM, a ROM, a PROM and EPROM, a FLASH-EPROM, any other memory chip or cartridge, a carrier wave transporting data or instructions, cables or links transporting such a carrier wave, or any other medium from which a computer may read programming code and/or data. Many of these forms of computer readable media may be involved in carrying one or more sequences of one or more instructions to a processor for execution.

[00357] The computer system 2001 can include or be in communication with an electronic display 2035 that comprises a user interface (UI) 2040 for providing, for example, an application (app) to permit a user to select media for display. Examples of UI's include, without limitation, a graphical user interface (GUI) and web-based user interface. The apps may have features and functionality as described in, for example, PCT/US2015/041391, which is entirely incorporated herein by reference.

[00358] Methods and systems of the present disclosure can be implemented by way of one or more algorithms. An algorithm can be implemented by way of software upon execution by the central processing unit 2005.

[00359] The computer system may further include a video display unit (e.g., a liquid crystal displays (LCD) or a cathode ray tube (CRT)). The computer system also includes an alphanumeric input device (e.g., a keyboard), a user interface (UI) navigation device (e.g., a mouse), a disk drive unit, a signal generation device (e.g., a speaker), and a network interface device. The computer system may also include an environmental input device that may provide a number of inputs describing the environment in which the computer system or another device exists, including, but not limited to, any of a Global Positioning Sensing (GPS) receiver, a temperature sensor, a light sensor, a still photo or video camera, an audio sensor (e.g., a microphone), a velocity sensor, a gyroscope, an accelerometer, and a compass.

[00360] FIG. 21 shows a control unit 2100. The control unit 2100 includes a microcontroller that is in communication with various other units, including a battery (e.g., lithium ion polymer battery), a battery charger that is in communication with a universal serial bus (USB) port, an accelerometer, a first button, a second button, Bluetooth, a first memory (e.g., synchronous dynamic random access memory, or SDRAM), a second memory (e.g., flash memory), a display driver, liquid crystal display (LCD), and a light sensor. The control unit 2100 can be integrated with a display device or system of the present disclosure. For example, the control unit 2100 can be integrated as a circuit board of a display device (e.g., button display).

Revenue based

[00361] The user of a wearable device/screen of the present disclosure may log in and sign up for being part of an advertising campaign. The user may be able to pick from a selection of offerings in which they can be paid a fee for wearing a certain expression for a given period of time in or around certain locations. As a non-limiting example, somebody who commutes to work down a major freeway each day may be able to sign up for a revenue generating advertising participation opportunity given their commute and based on how many cars (eyeballs) they will pass en route to their office. This may be true for a car based device as well as a one person device: A person may be attending a ball game, and an advertiser can notify the back-end that they are willing to pay \$5 for anyone going to the game who will upload the company name and wear it to the game, during the game and going home from the game. This person can upload the expression and it can be verifiable that they wore the expression during the entire game. Revenue can flow into their account directly from the company that engaged them to advertise using their wearable device/screen of the present invention. The revenue can flow directly into their account. The account may be via the back-end, through an outside account such as PayPal®, the like.

[00362] Additionally, creators and users of expressions on their wearable devices/screens upload expressions on a back-end, wearable device/screen market place, similar to "iTunes®" and other users can upload and transfer a fee to the creator of an expression which another decided to use.

[00363] A wearable device/screen advertising display system can be designated generally with the reference numeral. The wearable device/screen advertising display system can provide a system in which dynamic advertising may be presented on a wearable device/screen display and generally can include one or more of each of the following components: a display and an interface device.

[00364] The display may generally comprise any type of display device that may be worn by a user and is capable of presenting advertisements in accordance with embodiments of the present invention. In some embodiments, the display may be integrated with an article of clothing, such as a shirt or jacket. In other embodiments, the display may not be integrated with an article of clothing and may simply be worn on top of a user's clothing. Because the display is worn by a user, the display is preferably light and compact. Accordingly, in an embodiment, the display is a flat panel display (FPD), such as, for example, a liquid crystal display (LCD), an organic light emitting diode (OLED) display, a plasma display panel

(PDP), or a light emitting diode (LED) display. In some embodiments, the display may include one or more speakers for presenting audio content.

[00365] The wearable device/screen display system can also include an interface device in communication with the display via a wired or wireless communication link. The interface device generally facilitates presentation of advertisements via the display. In particular, the interface device provides long-range wireless capabilities to the wearable device/screen advertising display system, for example, by transmitting and receiving radio frequency (RF) signals to and from a wireless network. Accordingly, the interface device may receive advertisements from a network component for presentation via the display. In some embodiments, the interface device may track advertising usage information, such as, for instance, advertising content displayed, time and location that advertising content is displayed, and onlookers' interactions with advertising content. In further embodiments, the interface device may facilitate onlookers' interactions with advertising content presented on the display.

[00366] A block diagram of an exemplary interface device is shown in FIG. 23. Among other components not shown, the exemplary interface device generally includes a processor, memory, a long-range wireless communications component, input/output interface(s), a personal area network (PAN) component, and a global positioning system (GPS) component, all of which may be communicatively linked by a system bus. Additionally, the interface device may include a power source (e.g., a battery) or cabling to connect the unit to a power source. Depending on the complexity of the wearable device/screen advertising display system, the interface device may include only a portion of the components shown in FIG. 23 and/or may include additional components not shown.

[00367] The processor may comprise one or more processors that read data from various components and operate to coordinate various functions of the interface device as described herein. The memory includes computer-storage media in the form of volatile and/or nonvolatile memory. The memory may be removable, non-removable, or a combination thereof. The memory serves to store data, such as program instructions and personal information. In some embodiments, the memory may store advertising content communicated to the wearable device/screen advertising display system for presentation via a display. In further embodiments, the memory may store tracked advertising usage information.

[00368] The long-range wireless communications component functions to establish and engage in communication over a long-range wireless RF interface. In embodiments, the long-range wireless communications component may both transmit and receive RF signals over

the long-range wireless RF interface. The communication may occur in a digital format, such as CDMA, TDMA, GSM, or may occur in an analog format, such as AMPS.

[00369] The input/output interface(s) may comprise one or more interfaces with various input and output devices that may be included within wearable device/screen advertising display system. For instance, an output interface may be provided for communicating advertising content to a display. In embodiments in which separate speakers are provided as a part of the wearable device/screen advertising display system, an output interface may be provided for communicating audio content to the speakers. In some embodiments, onlookers may be able to interact with advertising content via one or more input devices, such as a keyboard or key pad. Accordingly, one or more input interfaces may be provided for such input devices.

[00370] In some embodiments, such as that shown in FIG. 23, the interface device may also include a PAN component. The PAN component provides short-range wireless communications between the interface device and other devices and components. For instance, in some embodiments, the PAN component may provide a wireless link between the interface device and output devices, such as a display and/or speakers. In some embodiments, the PAN component may provide a wireless link between the interface device and one or more input devices. Further, in some embodiments, the PAN component may be used to track onlookers in the vicinity of the wearable device/screen advertising display system by detecting the onlookers' devices (e.g., cell phones) with the PAN. The PAN component may communicate via Bluetooth or other standards for short-range wireless communications.

[00371] The interface device may also include a GPS component in some embodiments of the invention. The GPS component may be used to determine a location of the wearable device/screen advertising display system. Location information collected by the GPS component may be used in a variety of different manners in various embodiments of the present invention. For instance, location information may be used to provide location-based advertising. Additionally, location information may be used as advertising usage information, by providing information regarding where specific advertising content was displayed.

[00372] In some embodiments, the interface device may comprise a component that is specifically dedicated to and integrated with a wearable device/screen advertising display system. For instance, in an embodiment, the interface device may integrate with the article of clothing and an e-textile may provide communication between the interface device and a display that is also integrated with the article of clothing. In other embodiments, a user's personal device, such as a user's cell phone, may operate as the interface device. In such

embodiments, a physical connection may be provided in the wearable device/screen advertising display system for providing communication between the user device and a display and/or the user device may communicate with the display via a wireless personal area network (e.g., via Bluetooth).

[00373] Referring now to FIG. 24, a block diagram is shown of an exemplary system in which exemplary embodiments of the present invention may be employed. The system may include, among other components not shown, a wearable device/screen advertising display system, an advertising server, and an advertising content store. The wearable device/screen advertising display system may be similar to the wearable device/screen advertising display system described with reference to Figures 1(a)-(c). The wearable device/screen advertising display system may communicate with the advertising servers via a long-range wireless RF interface to a network. The network may include one or more wide area networks (WANs) and/or one or more local area networks (LANs), as well as one or more public networks, such as the Internet, and/or one or more private networks.

[00374] The advertising server may perform a variety of functions in accordance with various embodiments of the present invention. It will be understood by one skilled in the art that one or many network components may provide the functions of the advertising server as described herein. The advertising server generally provides advertising content to wearable device/screen advertising display systems, such as the wearable device/screen advertising display system. The advertising content may be stored in an associated advertising content store. The advertising content may comprise any combination of media content, including still images, text, video, and audio content. In some embodiments, the advertising server may stream advertising content to the wearable device/screen advertising display system, which may present the streaming advertising content. In other embodiments, the advertising server may communicate advertising content to the wearable device/screen advertising display system, which may store the advertising content for later presentation.

[00375] The advertising content store may store a variety of advertising content from one or more advertisers. Advertising content to be presented by a particular wearable device/screen advertising display system may be selected in a number of different manners within various embodiments of the present invention (as will be described in further detail below). For instance, in some embodiments, the advertising content may be randomly selected for the wearable device/screen advertising display system. In other embodiments, advertising content may be manually selected for the wearable device/screen advertising display system. In further embodiments, advertising content may be selected based on the

current location of the wearable device/screen advertising display system. In such embodiments, the advertising server may determine the location of the wearable device/screen advertising display system and select particular advertisements based on the location. In further embodiments, advertising content may be selected based on profiles and/or preferences associated with the wearer of the wearable device/screen advertising display system.

[00376] In some embodiments, multiple advertising display systems, including the wearable device/screen advertising display system and one or more other wearable device/screen advertising display systems, may work together to provide coordinated advertising. In such embodiments, the advertising content store may store coordinated advertising content and the advertising server may facilitate the coordinated advertising message. For instance, the advertising server may determine that multiple advertising display systems are within proximity of each other or otherwise situated for providing coordinated advertising. Accordingly, the advertising server may select and communicate coordinated advertising content for presentation via the multiple wearable device/screen advertising systems.

[00377] The advertising server may also track advertising usage information for wearable device/screen advertising display systems, such as the wearable device/screen advertising display system, for accountability and billing purposes. As will be described in further detail below, in various embodiments of the present invention, advertising usage information may include network-based advertising usage information and/or advertising usage information tracked by the wearable device/screen advertising display system.

Advertising Content Selection for Wearable device/screen Advertising Display System

[00378] As discussed previously, one or more advertising content stores and advertising servers, such as the advertising content store and advertising server of FIG. 24, may store a variety of advertising content from different advertisers and provide advertising content to wearable device/screen advertising display systems. In various embodiments of the present invention, advertising content may be selected for a particular wearable device/screen advertising display system in a variety of different ways. For example, in some embodiments, advertising content may be randomly selected and communicated from an advertising server to a wearable device/screen advertising display system. In other embodiments, a user may be allowed to manually select advertising content for display on the user's wearable device/screen advertising display system. For instance, the user may be able to access a list of advertising content stored on an advertising server and available to the user. The user may

then select advertising content from the list. In further embodiments, advertising content may be selected based on the location of a wearable device/screen advertising display system. In still further embodiments, advertising content may be selected based on a user profile associated with a wearable device/screen advertising display system. Any and all such variations are contemplated within the scope of embodiments of the present invention.

[00379] Turning to FIG. 25, a flow diagram is provided illustrating a method for selecting advertising content based on the location of a wearable device/screen advertising display system in accordance with an embodiment of the present invention. Advertisers typically wish to target advertisements to potential customers as opposed to the general public. Accordingly, location-based advertising is one way through which targeted advertising may be provided. Initially, as shown at block, the location of a wearable device/screen advertising display system is determined. One skilled in the art will recognize that the wearable device/screen advertising display system's location may be determined by any of a variety of different methods for locating a wireless device. For example, in some embodiments, the general location of a wearable device/screen advertising display system may be determined by identifying a cell tower with which the wearable device/screen advertising display system is communicating. In other embodiments, multiple cell towers may be used to triangulate a wearable device/screen advertising display system's position. In further embodiments, the wearable device/screen advertising display system may have GPS capability, which may provide a more specific location of the wearable device/screen advertising display system. In such embodiments, the wearable device/screen advertising display system may determine its location and communicate location information to an advertising server or another network server accessible by an advertising server.

[00380] After determining the location of the wearable device/screen advertising display system, advertising content data may be accessed, as shown at block, for example, by accessing an advertising content store, such as the advertising content store of FIG. 24. The advertising content data may include information associating advertising content with location information. Advertising content may be associated with location information of varying scale within embodiments of the present invention. By way of example only and not limitation, advertising content may be associated with a region of the country, a county, a city, a shopping area, and/or a specific business, such as a store or restaurant.

[00381] Using the determined location of the wearable device/screen advertising display system, advertising content is selected, as shown at block. The selected advertising content is communicated to the wearable device/screen advertising display system, as shown at block.

The advertising content is then presented via the wearable device/screen advertising display system, as shown at block. In some embodiments, advertising content may be streamed to the wearable device/screen advertising display system, which presents the advertising content as it is streamed. In other embodiments, advertising content may be communicated to the wearable device/screen advertising display system, which stores the advertising content for subsequent presentation.

[00382] As indicated above, in some embodiments, advertising content may be selected based on a user profile associated with a wearable device/screen advertising display system. The user profile may contain a variety of information regarding characteristics and preferences of the user. User characteristics include information such as, for example, age, ethnicity, weight, hair color, eye color, and clothing style. One skilled in the art will recognize that a wide variety of user characteristics may be employed within various embodiments of the present invention. User preferences relate to the type of advertising content the user wishes to receive and present via the user's wearable device/screen advertising display system.

[00383] By employing a user profile, advertising content may be selected for presentation via a wearable device/screen advertising display system based on the user's characteristics and/or preferences. Among other things, this provides another form of targeted advertising. By way of example, an advertiser's target market may be a particular age range. Accordingly, advertising content associated with the advertiser may be selected for user profiles indicating users within that age range.

[00384] Referring now to FIG. 26, a flow diagram is provided showing an exemplary method for selecting advertising content based on a user profile in accordance with an embodiment of the present invention. As shown at block, a user profile is provided that includes user characteristics and/or user preferences of a user associated with a wearable device/screen advertising display system.

[00385] Based on the user profile, advertising content is selected, as shown at block. The selection of advertising content based on a user profile may be performed in a variety of different manners within the scope of the present invention. For example, in one embodiment, an advertising content data may be accessed, for example, by accessing an advertising content store, such as the advertising content store of FIG. 24. The advertising content data may include information associating advertising content with information such as target user characteristics and/or advertising content type to facilitate the automatic selection of advertising content based on user profiles. Advertising content may be selected by comparing

the user profile information against this advertising content data. For instance, user characteristics in the user profile may be compared against target user characteristics to select appropriate advertising content. Additionally, user preferences in the user profile may be compared against the advertising content type for advertising content selection.

[00386] The selected advertising content can be communicated to the wearable device/screen advertising display system, as shown at block. The advertising content is then presented via the wearable device/screen advertising display system, as shown at block. As indicated hereinabove, in some embodiments, advertising content may be streamed to the wearable device/screen advertising display system, which presents the advertising content as it is streamed. In other embodiments, advertising content may be communicated to the wearable device/screen advertising display system, which stores the advertising content for subsequent presentation.

Onlooker/Observer Interaction with Advertising Content

[00387] In some embodiments, onlookers may be able to interact with advertising content after it has been received and presented on wearable device/screen advertising display systems. In some cases, a wearable device/screen advertising display system may have one or more associated input devices allowing onlookers to interact with the system. For instance, a wearable device/screen advertising display system may include a microphone, allowing onlookers to interact with the system via voice. As another example, the display device of the wearable device/screen advertising display system may be a touch screen, allowing onlookers to interface with the system via touch. As a further example, other types of inputs devices such as keypads and keyboards, for instance, may also be associated (wired or wireless) with the wearable device/screen advertising display system to facilitate onlooker interaction. In other cases, onlookers may use their own devices to interact with a wearable device/screen advertising display system. For instance, onlookers may be able to interact with a wearable device/screen advertising display system using a cell phone to communicate with the system via a personal area network (e.g., via Bluetooth).

[00388] By interacting with a wearable device/screen advertising display system, an onlooker may be able to change the content presented on the wearable device/screen advertising display system. In particular, onlooker interface may cause the wearable device/screen advertising display system to access and present further content associated with an advertisement or an associated advertiser's business, product, and/or service. For example, an onlooker may interact with an advertisement presented on a wearable device/screen advertising display system to access location information for a store (e.g., nearest store

location, directions, etc.) or to view specials. In some embodiments, onlooker interaction may allow content to be sent to an onlooker's device. For instance, coupons may be pushed to an onlooker's cell phone.

[00389] Turning to FIG. 27, a flow diagram is provided illustrating an exemplary method for facilitating onlooker interaction with a wearable device/screen advertising display system in accordance with an embodiment of the present invention. As shown at block, advertising content is presented via a wearable device/screen advertising display system. The advertising content may have been selected and communicated to the wearable device/screen advertising display system from an advertising server as discussed hereinabove. The advertising content may include content that entices an onlooker to interact with the wearable device/screen advertising display system.

[00390] As shown at block, the wearable device/screen advertising display system receives onlooker interaction. The onlooker interaction with the wearable device/screen advertising display system may be via one or more input devices associated with the wearable device/screen advertising display system (e.g., microphone, touch screen, keypad, or keyboard) or may be via a device associated with an onlooker (e.g., the onlooker's cell phone).

[00391] In response to the onlooker interaction, the wearable device/screen advertising display system communicates with a network component to access further content, as shown at block. As discussed previously, the wearable device/screen advertising display system may be provided network access over a wireless communication interface. In some embodiments, the network component may be an advertising server, such as the advertising server of Figure 42, and the further content may be associated with the advertising content within the advertising server. In other embodiments, the network component may be unassociated with advertising server. For example, the network component may be an advertiser's server. The content accessed from the network component is received and presented by the wearable device/screen advertising display system, as shown at block. As indicated above, in some embodiments, further content may be alternatively or additionally communicated to an onlooker's device, such as an onlooker's cell phone.

Coordinated Advertising for Multiple Wearable device/screen Advertising Display Systems

[00392] In further embodiments of the present invention, multiple displays and/or multiple wearable device/screen advertising display systems may be configured to provide a coordinated advertising message. In some embodiments, a user may wear multiple displays

that are coordinated to provide a common advertising presentation. In other embodiments, multiple people may work together with each of their wearable device/screen advertising display systems featuring a portion of a coordinated marketing display. For example, a coordinated advertisement may comprise text, such as a billboard message. Each of the wearable device/screen advertising display systems may present a portion of the text such that the entire message is presented via the multiple systems. As another example, a coordinated advertisement may comprise a video, wherein each of the multiple wearable device/screen advertising display systems may present a portion of the video. This may allow, for example, objects within the video to appear to move from one display to another. Additionally, interactive advertising may be provided via multiple wearable device/screen advertising display systems. For instance, an advertiser's interactive advertisement may comprise a virtual slot machine, in which each of the wearable device/screen advertising display systems provide a symbol and onlookers may attempt to get a combination of symbols via the multiple advertising display systems.

[00393] Referring to FIG. 28, a flow diagram is provided illustrating an exemplary method for presenting coordinated advertising content via two or more wearable device/screen advertising display systems in accordance with an embodiment of the present invention. As shown at block, a determination is made that two or more wearable device/screen advertising display systems are located within proximity of each other suitable for coordinated advertising. For instance, in some embodiments, each of the wearable device/screen advertising display systems may have GPS capability for providing location information. Accordingly, a network component may recognize that the wearable device/screen advertising display systems are within proximity of each other based on the location information. In other embodiments, the wearable device/screen advertising display systems may recognize the presence of each other, for example, via a wireless personal area network (e.g., via Bluetooth).

[00394] One or more of the wearable device/screen advertising display systems may then communicated with a network component, indicating that the wearable device/screen advertising display systems are within proximity of each other for coordinated advertising. In further embodiments, a manual indication may be provided to indicate that multiple wearable device/screen advertising display systems are situated as to provide coordinated advertising.

[00395] Coordinated advertising content is selected, as shown at block. The coordinated advertising content may be selected in a variety of different manners, including those discussed hereinabove, such as random selection, manual selection, location-based selection,

and/or profile-based selection. Additionally, in some embodiments, the coordinated advertising content selection may be based on the number of wearable device/screen advertising display systems that will be presenting the coordinated advertising.

[00396] The selected coordinated advertising content is communicated to the wearable device/screen advertising display systems, as shown at block. This may be performed in a variety of different manners with the scope of the present invention. For instance, in one embodiment, a network component, such as the advertising server of FIG. 24, communicates a portion of the coordinated advertising content to each of the wearable device/screen advertising display systems. In another embodiment, the network component may communicate the coordinated advertising content to one of the wearable device/screen advertising display systems, which may in turn communicate portions of the coordinated advertising content to the other wearable device/screen advertising display systems (e.g., via a wireless personal area network). Finally, the coordinated advertising content is presented via the wearable device/screen advertising display systems, as shown at block.

[00397] One skilled in the art will recognize that the communication of coordinated advertising content to multiple wearable device/screen advertising display systems and presentation of the coordinated advertising content may be performed in a variety of manners other than described hereinabove. For instance, in some embodiments, coordinated advertising content may be communicated to one or more of the wearable device/screen advertising display systems prior to the wearable device/screen advertising display systems being in proximity of each other. In such embodiments, the one or more wearable device/screen advertising display systems may store the coordinated advertising content until the wearable device/screen advertising display systems are in proximity of each other and present the coordinated advertising content at that time.

Tracking and Accounting of Advertising for a Wearable device/screen Advertising Display System

[00398] Users may be paid or otherwise compensated to wear advertising display systems in accordance with embodiments of the present invention. Accordingly, advertisers and/or providers of advertising services may wish to track aspects of advertising content usage by individual wearable device/screen advertising display systems in embodiments of the present invention. By tracking information associated with advertising content usage for a wearable device/screen advertising display system, the information may be used for accountability and billing for advertising services provided by the wearer. A variety of advertising content usage information may be tracked. By way of example only and not limitation, the advertising

content usage information tracked for a wearable device/screen advertisement display system may include information regarding: the on/off status of the display; what advertising content was communicated to the wearable device/screen advertising display system; what advertising content was presented; when advertising content was presented; where advertising content was presented; the presence of onlookers within the vicinity of the wearable device/screen advertising display system; onlooker interactions with advertising content; whether the wearable device/screen advertising display system was worn during presentation of advertising content; and whether the display was covered during presentation of advertising content.

[00399] In an embodiment, a network device, such as the advertising server of FIG. 24, may be used to track and/or store advertising content usage information for billing advertising services associated with a wearable device/screen advertising display system. In some embodiments, advertising usage information may be tracked by the wearable device/screen advertising display system and communicated to the network component (e.g., as described below with reference to FIG. 29). In other embodiments, advertising usage information may be primarily tracked by the network component, which may access a variety of network-based advertising usage information (e.g., as described below with reference to FIG. 30). In further embodiments, the network component may store both advertising usage information received from the wearable device/screen advertising display system and network-based advertising usage information. Any and all such variations are contemplated within the scope of embodiments of the present invention.

[00400] Referring to FIG. 29, a flow diagram is illustrated showing an exemplary method for tracking advertising usage information at a wearable device/screen advertising display system for billing advertising services provided by the wearable device/screen advertising display system in accordance with an embodiment of the present invention. In the present exemplary embodiment, advertising usage information is tracked by the wearable device/screen advertising display system and communicated to a network component (e.g., the advertising server of FIG. 24). As shown at block, the wearable device/screen advertising display system tracks advertising usage information. For instance, the wearable device/screen advertising display system may track what advertising content was received from, for example, an advertising server. When wearable device/screen advertising display system presents advertising content, it may track what advertising content was presented and when the advertising content was presented. In some embodiments, the wearable device/screen

advertising display system may also determine the location where advertising content was presented (e.g., using a GPS component).

[00401] In some embodiments, the wearable device/screen advertising display system may also be able to track the presence of onlookers within proximity of the wearable device/screen advertising display system while advertising content is being displayed. For instance, the wearable device/screen advertising display system may be able to detect the presence of onlooker devices (e.g., an onlooker's mobile phone) within the wireless personal area network of the wearable device/screen advertising display system. As another example, the wearable device/screen advertising display system may be able to detect the presence of onlookers by incorporating a device, such as a heat sensing device or a motion sensing device, capable of detecting the presence of an onlooker within proximity of the device.

[00402] In further embodiments, the wearable device/screen advertising display system may also be able to track onlooker interaction with the wearable device/screen advertising display system. For instance, the wearable device/screen advertising display system may track information regarding onlooker interaction via an input device associated with the wearable device/screen advertising display system. Similarly, the wearable device/screen advertising display system may track information regarding onlooker interaction via devices associated with onlookers (e.g., an onlooker's mobile phone).

[00403] As shown at block, the wearable device/screen advertising display system communicates the advertising usage information to a network component, such as the advertising server of FIG. 24, for example. In some embodiments, the wearable device/screen advertising display system may communicate advertising usage information to the network component as the information is tracked. In other embodiments, the wearable device/screen advertising display system may store advertising usage information as it is tracked and periodically communicates the stored advertising usage information to the network component. In embodiments, the wearable device/screen advertising display system and/or network component may associate various pieces of advertising usage information together. For instance, the information regarding when and where particular advertising content was presented may be associated with an identification of that advertising content.

[00404] The network component stores the advertising usage information received from the wearable device/screen advertising display system, as shown at block. The stored advertising usage information may be used by the network component or another associated component to determining billing for the advertising services provided by the wearable device/screen advertising display systems. In some embodiments of the present invention, this may

comprise determining compensation amounts based on the advertising usage information. In other embodiments, this may comprise verifying that a specified advertising service has been provided. For instance, a wearer may be instructed and compensated to present specified advertising content at a specified location, and at a specified time. The tracked advertising usage information may be used to verify that the specified advertising content was presented at the specified location and time.

[00405] Turning now to FIG. 30, a flow diagram is provided illustrating a method for tracking advertising usage information at a network component for billing advertising services provided by a wearable device/screen advertising display system. As shown at block, advertising content is communicated to the wearable device/screen advertising display system. For example, an advertising server, such as the advertising server of FIG. 24, may select advertising content and communicate the advertising content to the wearable device/screen advertising display system.

[00406] A network component, such as the advertising server of FIG. 24, receives an acknowledgement from the wearable device/screen advertising display system that the advertising content was received and displayed, as shown at block. The network component may store advertising usage information based on the acknowledgement, including what advertising content was communicated and when the advertising content was communicated to the wearable device/screen advertising display system, as shown at block.

[00407] In some embodiments, the network component may also track other network-based advertising usage information, as shown at block. For instance, in an embodiment, the network component may be able to access location information associated with the wearable device/screen advertising display system to determine the location of the wearable device/screen advertising display system when advertising content was communicated and/or presented. In embodiments, the network component may also be able to determine the presence of onlookers within the vicinity of the wearable device/screen advertising display system. The network component may be able to determine the location of the wearable device/screen advertising display system and the location of devices associated with onlookers (e.g., onlookers' mobile phones) to determine that onlookers are within proximity of the wearable device/screen device/screen display system. The network component may do so, for example, by recognizing the onlooker devices and wearable device/screen display system are within the same Wi-Fi zone or by accessing GPS location information for the onlooker devices and wearable device/screen display system. In further embodiments, the

network component may also be able to track onlooker interaction with the wearable device/screen advertising display system.

[00408] The advertising usage information tracked by the network component may be used for billing advertising services provided by the wearable device/screen advertising system. Similar to that discussed above for the method and with reference to FIG. 29, the advertising usage information may be used to determine compensation for advertising services and/or to verify that specified advertising was provided by the wearable device/screen advertising display system.

DASHBOARD

[00409] FIG. 31 shows a schematic diagram of a system according to an example embodiment for the creation of one or more dashboards utilizing wearable devices/systems information, graphics and the like. The system may include a dashboard design system, which may be used during the dashboard configuration, display computer system, and data system. In an example embodiment, the dashboard design system and the display computer system may be a single computing system or several computing systems that may be connected via a network. Similarly, in another example embodiment, the display computer system and data system may be implemented on a single computing system or several computing systems that may be connected via a network.

[00410] The dashboard software is provided that computes the aggregate expressions being uploaded and used by all individuals using a wearable device/screen. After the calculations and groupings of these aggregate summations of expressions, the findings are expressed in a dashboard and revealed to the public as a way to reflect the "mood" of the users. As a non-limiting example, if there are 100 users wearing a Karma Cap device, and 75 are expressing "peace" in some context on their devices and 25 users are expressing "Gun Control" the aggregate dashboard calculates these summations and reflects them to the public, expressing the "mood" of the users within a given time period.

[00411] The system shown in FIG. 31 may be configured to perform runtime data integration with visually interactive dashboard display that may be configured to use a variety of enterprise resource data sources. Example dashboard program tools may include, Xcelsius®, BSC Designer Online®, Balanced scorecard Designer®, Transpara Visual KPI®, Software, iDashboard®, IBM Cognos®, Business Object Dashboard Builder® and so on. The system allows a user to generate generic data connectivity without the user having to write programming code, while using a graphical user interface. Embodiments may allow the user in a business context viewer or other data applications to access the interaction and

visualization features of a dashboard tool. In other embodiments, multiple queries (e.g., different systems or different data sources) may be accessed to create a visual display of one or more dashboard tools.

[00412] The dashboard design system may include, among other systems, dashboard converter logic, data range determination logic, dashboard component generator, external interface logic, graphic library, and network interface logic. The dashboard design system may include data processing computing systems, for example, comprising one or more networked computers that are programmed to perform the operations described herein. These operations include computing and/or communicating with the display computer system. In another embodiment, computing or communicating may include receiving requests, processing the requests, sending an appropriate response to the data system, updating the data storage system, and generating a dashboard file using dashboard converter logic. As discussed in greater detail herein, a dashboard may show a graphical display of data, such as but not limited to, a one or more charts, graphs and so on. The display may be shown with or without interactive controls to modify data values that may modify the displayed components.

[00413] In an example embodiment, the dashboard design system and the display computer system may be configured by one or more software companies. In another embodiment the display computer system may be a single computer system or a virtual computer system that may include multiple application systems. In another embodiment, the dashboard design system and the display computer system may be provided by an entity that uses software provided by one or more software companies. Other combinations such as, the dashboard design system may be provided by one company and the display computer system may be provided by another company. The display computer system may comprise various application logics and assemble various programs to form one or more software programs that may be used by the dashboard design system and the data system.

[00414] The embodiments may be utilized in a variety of ways. For example, a customer that owns a copy or has a license to use the dashboard software may generate a display that shows a chart or graph based on recently gathered data that resides in a data system without writing new programming code. In another example, data replication may not be performed and data from various data sources may be displayed in a single dashboard. The user can view a dashboard with the most updated data. In another example, the data being shown in the graphical form may be current data that is stored in the data source. Various customized dashboards may be created and integrated into, for example, applications designed to provide

better insight and visibility across organizations, improve operational efficiency and effectiveness, increase flexibility, or related applications that use the business context viewer, business suit applications, and so on. Customers or users can use the business list viewer to retrieve, organize, and aggregate application data and display the data using advanced visualization tools provided by the dashboard software such as, the dashboard tools mentioned above. The combination of customizable visualization and enhanced integration of the dashboard tool allows the business decision maker to benefit from insightful business analytics. The software company provider may create pre-programmed customized dashboards or templates using the dashboard software or templates.

[00415] In an example embodiment, the dashboard file converter logic may convert application specific data structures and data, to be compatible with or match with dashboard provided external interface logic. The dashboard converter logic allows business application structures that may be based on a high level programming language such as Java®, or other programming languages, to transfer and receive data from the dashboard external interface logic. In another example embodiment, the dashboard converter logic may facilitate the communication between the graphical dashboard and the business application. The business application may be based on Java®, ABAP® (Advanced Business Application Programming), C++®, C#®, SQL®, or other high or low level programming languages. In another example embodiment, the dashboard design system may use Adobe® Flash® or other graphic display technologies. In other embodiments, the dashboard design system may use Flash Island or other visual display generation technologies to display the dashboard components and controls. In another embodiment, the dashboard design system may generate a dashboard in various file formats. One such format may be a short web format (SWF). The SWF file format is a multimedia vector graphic file that may be displayed using a Flash® or Flash Island player. The use of the Flash® technology may be facilitated by the graphic library. The graphic library may allow files to play as movies or generate visual displays of data. The library core may be a graphic renderer that is capable of being re-used in applications that play Flash files or Flash based dashboard files. In another embodiment, the file format may be HTML® based, such that the HTML® includes graphic display and interactive components, such as, HTML 5®, XML® or other formats.

[00416] The data range determination logic, dashboard component generator and the external interface logic each may be used for designing the dashboard. Prior to displaying a dashboard in a business application, a dashboard or SWF file may be generated. The dashboard or SWF file may specify the data range, type of components and the external

interface. The data range determination logic may be configured to specify the data range in the spreadsheet associated with the dashboard file that may be used to generate a visual display. For example, the data range may include two or more components, and the user may choose a particular data range as defining the "labels" of the chart and the user may choose another data range for the "values" that are associated with the "labels."

[00417] Another embodiment may include a dashboard component generator that may allow a user to place components with various attributes onto a canvas. The canvas may be a space where various visual components may be arranged. For example, the user may select a component from a component panel that includes a plurality of components and place them on the canvas in relation to other components. The components may be provided by the dashboard software provider or be add-ons from another software provider. The components may include various categories, such as, add-ons, art and background, charts, containers, selectors, single value, multi-value, maps, text, and web connectivity components. The chart components may include various types of charts, such as, bar graphs, pie charts, line graphs and so on. Each component may be configured to receive input, such as, properties, attributes and data ranges that may be used to generate the interactive graphical display. Each component may have interactive abilities, for example, a wedge of a pie chart may be selected to display more data regarding the underlying data and the proportional percentage of the wedge. Other components such as single value components may be modified during runtime to visualize how a change in a single value affects other values. Multi-value components may also be used to visualize the effect of a change in multiple values.

[00418] Embodiments of external interface logic may allow a dashboard to expose selected data ranges associated with the dashboard display to business software and related data sources. The access to the data ranges may create a framework that may be utilized by a graphical user interface to receive and send data into the dashboard or SWF file. The external interface logic allows the business application software to export application data to be displayed in a dashboard in an interactive visual format.

[00419] Embodiments of a network interface logic and may connect the dashboard design system, display computer system and data system to each other, or to public networks. In one embodiment, network interface logic and network interface logic may be free from any communication during the execution of the dashboard or while the dashboard is being displayed. In this embodiment, the graphical file that has been configured by the computer system may be stored in the data storage system. The graphic file may be used for data mapping (during configuration or design time) and for generating the graphical display

during execution. The external adapter may facilitate the communication between data storage system and the graphical file.

[00420] Alternatively or additionally, the network interface logics and may permit the computer systems, and to connect to each other and the other computer systems. For example, in the context of desktop/laptop computers, network interface logic and may comprise one or more computers or web servers that provide a graphical user interface for users that access the subsystems of system, or through the internet or an intranet protocol. Network interface logic, and may also comprise other logics that may be configured to provide an interface for other types of devices such as mobile devices (e.g., cell phones, smart phones, and so on) and server-based computing systems.

[00421] In an example embodiment, the display computer system may include, network interface logic, context viewer system, data storage system and dashboard display system. In an alternative embodiment, the dashboard display system may be included in the context viewer system. Such logics or systems may, in practice, be implemented in a machine (e.g., one or more display and other computers) comprising machine-readable storage media (i.e., cache, memory, flash drive or internal or external hard drive or in a cloud computing environment, non-transitory computer readable media or non-transmissible computer-readable media) having instructions stored therein which are executed by the machine to perform the operations described herein. The context viewer system may be a program product that performs various processing functions such as receiving data from the data source, preparing data by aggregating and providing access to visualization capabilities, and so on. The data storage system may store data related to the applications that are being executed or may be executed on the display computer system. In another embodiment, the data storage system may store business application data or statistical data such as, business warehouse data. In an example embodiment, the dashboard display system may be in communication with the display computer system to display data in a dashboard in a visual manner or in visual components using graphics. Displaying data graphically may include displaying bar graphs and/or pie charts or other visual displays. In order to generate the dashboard display, the user may map dashboard data fields to the business application data fields. The mapping allows the dashboard tool to access data from the business applications without data replication.

[00422] Embodiments of the data storage system may store a variety of information including application data in database. The application data database may receive data from the data system. The data storage system may provide data to the context viewer system.

More specifically, the data storage system may provide data to the data aggregation logic. The data storage system may receive appropriate data mapping instructions from the data mapping logic and query the data system to correlate the data from one mapped field in the dashboard tool to the mapped fields in the application data.

[00423] Embodiments of the dashboard display system may be provided on the display computer system. In an example embodiment, the dashboard display system may transfer data from various data sources or data from various applications to external data ranges of the graphic file and display the graphical interface during runtime operations. The dashboard display system may include all of the features discussed above with regard to the dashboard design system. Also, the dashboard display system also includes a dashboard execution logic and external interface logic. The external interface logic may have similar features as the external interface logic of the dashboard design system. The external interface logic may expose selected data ranges of the dashboard to the business software data. The external interface logic may allow the business application software to export application data to be displayed in the dashboard in a visual format instead of a textual format. During runtime when displaying the dashboard in the business application, the dashboard execution logic is configured to receive the data from the business application and generate a Flash Island interactive display as designed by the dashboard design system or dashboard display system.

[00424] The data system includes an application logic and application data. The data system may be configured to provide data and communicate with the display computer system. The application logic is the server side of the application that provides back end information to the context viewer system. For example, the application logic may comprise an Enterprise Resource Planning (ERP), Customer Relation Management (CRM) or Business Intelligence (BI) system. Business intelligence may refer to computer-based techniques used to analyze business data, such as sales revenue by products and/or departments or associated costs and incomes. The application data may include relational or other types of databases. The application data includes various fields that may be mapped to the fields exposed by the external dashboard interface.

[00425] FIG. 32A is an example process that may be implemented using the system shown in FIG. 31. Initially, in an example embodiment a dashboard design user may build a dashboard using a dashboard building software. The dashboard design user may configure the dashboard during design time. In an example embodiment, design time may include the design user configuring the dashboard layout and exposing a related data range. The dashboard design system may be used to create a dashboard layout. Building the dashboard

includes placing components on the canvas and configuring the properties associated with those components. As discussed above, the components may be among other components, a chart or graph. The dashboard design user may determine and specify using a graphical user interface the data ranges for the dashboard. After creating the dashboard, the dashboard may be exported automatically or by input from the dashboard design user to a SWF file format.

[00426] FIG. 32B is an example software architecture that may be implemented using the system in FIG. 31. The software architecture diagram shown in FIG. 32B, shows various software layers, such as, graphic player , component Dynamic HTML or Java® Script , and Server (Java® or Java® based or other high level programming language based) layers. In particular, the generic adapter may be built with the Flash Island library, which may facilitate the client-side communication between HTML and JavaScript®. The Dynamic HTML may load the generated dashboard in a graphic file, or Flash/SWF representation. The generic adapter may convert the Java® context into structures that match the dashboard's external interface format or the dashboard format. The generic adapter allows the business user to generate a dashboard in business analytic software using the most updated data from a data source without writing any customized software. The generic adapter may load dashboard data ranges and convert the associated data into an XML® string that may be used for further conversion into an ABAP® string, which may be used by the business analytic software.

[00427] In another embodiment, the generic adapter may convert the Flash Island properties into dashboard structures. In an example embodiment, the generic adapter may be used to load external dashboard ranges during the configuration stage. In another embodiment, the generic adapter may provide an application programming interface between the graphic player and the server. The generic adapter may load dashboard ranges automatically and the dashboard data ranges may be converted into XML strings. The XML string may be converted into Java® or ABAP® code which may be executed by the business application to display a dashboard. The server may include NetWeaver®, ABAP® or Java® language programming and the server may include various systems that are supported in the business software suit, the runtime , application , database and business intelligence application 388. In another embodiment, the functionality of the server may be implemented by the display computing system. In yet another embodiment the functionality of server may be divided between the display computing system and data system. In another embodiment, the graphic player may be implemented on the dashboard design system. Additionally or alternatively, the functionality of the graphic player may be implemented on the display computing system.

MARKET PLACE FOR CREATIVE SHARING AND PURCHASING

[00428] In one embodiment the market place serves as a point of exchange where created self-expressions and creative expressions, can be traded, purchased, explored, responded to and the like. The market place is a central point of focus for users and interested users to explore, share, purchase, respond to and sell all kinds of creative expressions. Organizations can shop at the marketplace. Individuals can sell at the market place, users and non-users can browse at the marketplace. In one embodiment the market place provides a one stop shop for exploring, sharing, purchasing, selling, and responding to all kinds of expressions.

[00429] In one embodiment a market place is provided, illustrated in FIG. 43, for creative sharing and purchasing relative to wearable devices/screen and includes a database management system (DBMS) comprising content management computer programs or software executing control logic operations and running on one or more database management servers/computers to organize the handling, storage and retrieval of data.

[00430] The functional components of a global Internet-based the market place for creative sharing and purchasing according to one embodiment of the present invention are broadly depicted in FIG. 43. The on-demand the market place for creative sharing and purchasing may comprise three complementary functional data, each center being associated with a segment or portion of a structured database accessible to the market place for creative sharing and purchasing and which centers contain a particular content type or class of or information (e.g., classification) stored in a computer readable medium as further described herein. In one embodiment the following may be included in the market place: (1) "Knowledge Center"; (2) "Training Center"; and (3) "Solutions Center".

[00431] The market place for creative sharing and purchasing in one embodiment, therefore, is preferably adapted and operative to receive wearable device/screen content from wearable device/screen users over the Internet in the form of pre-packaged professional information packets, assign Knowledge Producer-identified or System-designated tags (metadata) to each packet according to content type, and sort and organize the wearable device/screen content or packets into at least two or more content classifications or types of information and wearable device/screen expression In one embodiment, these content types may be service solutions (Solutions Center A214 type packets), professional short answers (Knowledge Center A216 type packets), and professional training (Training Center A215 type packets).

[00432] The market place system is further operative to store the tagged wearable device/screen expression, information and the like content or information packets in system

accessible databases, enable searches and queries by wearable device/screen users for the information packets, and retrieve information packets on demand based on retrieve requests input into the market place for creative sharing and purchasing by wearable device/screen users. This expression content organization is intended to provide the wearable device/screen user with more choices over the type of information displayed and retrieved by the present system in lieu of the "one size fits all" approach of existing online information systems to offering online information to wearable device/screen users.

[00433] This advantageously will allow wearable device/screen users to access exactly the type of wearable device/screen expression, information and the like content they are seeking more quickly than existing online bulk information storage and retrieval systems. Preferably, the type and/or level of detail of information or wearable device/screen expression, information and the like provided by each of the foregoing three Centers to the wearable device/screen user is different, as further described below.

[00434] In one embodiment, the wearable device/screen content or information packets created by wearable device/screen users and handled by the market place for creative sharing and purchasing contains information related to expressions. Accordingly, the wearable device/screen content of the information packets is not limited to any expression, information, displayed information and the like.

[00435] In one possible embodiment, the content management software may be executed by a database management server such as database server which is connected to Web Applications Server 1 via the host computer network. database server may be one or more linked servers operative to access, store, organize, and retrieve data from accessible computer readable medium or data storage devices that include in combination one or more databases accessible to the system via communication links (see FIG. 46). The database server or servers may be located proximate to or remote from Web Applications Server and databases and is in communication with the wearable devices/screens and the like.

[00436] FIG. 44 illustrates the information content or information exchanged and stored and/or managed in market place may be filtered. Information content or information packets that are part of the Qualified Content Library have undergone and passed a quality metrics review (i.e., the "filtering"). This is "Qualified Content" and is intended to provide the necessary indicia of information reliability demanded by purchases.

[00437] FIG. 46 shows the functional components of one embodiment of the market place. The system may be accessed using any web browser/client, mobile device and the like. The client requests are processed by a web applications server. Web applications server 1 can run

a load balancer to distribute user request loads evenly to multiple web servers running in parallel. The controllers each manage the flow of data and communication in the application related to various functions performed by the market place system. The controllers interact with a device that stores all database commit, read, update, and delete (CRUD) information and offerings and the user views. A payment gateway, mail Gateway, streaming media server and open office services can be provided. The payment gateway functions to assist with helping in processing payments. The mail gateway functions to assist with helping in processing mail and messages. The steaming media server functions to assist with helping in streaming content. A database server and databases manages and store he information and data.

[00438] In one embodiment, a database server running appropriately configured computer programs and control logic executed by the on-board processors are operative to perform conventional data management functions including for example without limitation archiving, sorting, filtering, searching, content searching within content, inline content editing, version management, tag (metadata) administration, and the like, particularly for wearable devices/screens. In some embodiments, another database management server such as content management server as shown in FIG. 45 may be provided that communicates via communications links and operatively cooperates with the database server to perform some or all of the conventional data management type functions.

[00439] In some system architecture configurations, content management server may be used to augment the database server if, for example, the amount of data stored and processed by the Market place for creative sharing and purchasing becomes too large for the database server alone to manage. It will be appreciated, however, that in other embodiments a database server or content management server alone may be used so long as the necessary database and content management software functions and control logic may be performed. Content management server may be proximate or remote to database server and accessible via communication links such as the Internet.

[00440] In one embodiment, the database server, content management server it deployed, and associated databases may be part of an external online third-party network remote from web applications server with access thereto being provided via a communication network and links over the Internet. Accordingly, in some embodiments, conventional "cloud computing" may be employed wherein the database server and/or content management server containing content management software and databases holding the data/information used by the market

place for creative sharing and purchasing actually resides remotely from web applications server, and in some embodiment maybe part of third-party networks.

[00441] In one embodiment, as shown in FIG. 45, web applications server may provide market place for creative sharing and purchasing with a variety of possible access portals to the market place for creative sharing and from the wearable device/screen users; each portal being dedicated to a specific functional aspect of the system as further explained herein. Communication links between web applications server and other components of the system such as database server, applications server, and the like may be accomplished via conventional wireless or hard wired network communication interconnections.

[00442] The market place for creative sharing and purchasing user may access web applications server via mobile devices, Network System, and the like. Communications between these Internet access devices and web applications server may be performed via any suitable conventional hard-wired (e.g., high speed cable, DMS, optical fiber, telephone modem, and the like) or wireless technologies (e.g., microwave, satellite network, and the like.).

[00443] The sharing can be enabled by productizing standard type offerings in terms of providing pre-packaged "solutions" on a particular topic each having a specific defined scope and "Service Attributes." These service attributes may define the minimum set of deliverables expected by a wearable device/screen user out of a "Productized Service Solution" in a given "Knowledge Category." For example, in an Information Technology based Productized Service Solution in one embodiment, the requisite service attributes might be for example "Definition," "Presentation/Working Demo", "Software Deployment Instructions," "Source Code/Executables," "Productized Cost," and the like. to name a few. In one simplistic example, a "Productized Service Solution" may include providing the wearable device/screen user with an in-depth answer containing required equipment and step-by-step instructions for setting up an office LAN (local area network). Thus such productized service solutions contain information to address the type of technical or other issues commonly encountered by many business or organization who are in need of the same professional solution thereby not requiring expensive customized solutions. As used herein, the term "solution" shall be used to refer to such pre-packaged productized service solutions which are accessible to wearable device/screen users through the online virtual the market place for creative sharing and purchasing described herein.

Communal coordination and access to group expression

[00444] A user may log into the site of the present invention and learn about an organized expression from a source. The source might be a nonprofit that wants to promote an image or a verbal expression. The users of Karma Caps devices will be able to choose from group and communal expressions where more than one person and more likely will be many thousands or millions of people are joining together to expression one common message on a particular day or week. As a non-limiting example, the Red Cross might offer the opportunity for everyone to wear a symbol of the Red Cross for two days to express and communal affinity. The users of the wearable devices/screens are able to log into the site of the present invention and both join a communal expression as well as lead a communal expression. Software and hardware resources are provided: (i) that allow this to take place; (ii) tracking how many people participated; and (iii) a way is enable to "like" or give feedback to the organizer of the communal expression.

[00445] This can be used in the "revenue flow" models where a communal expression might be "for pay" by an advertiser or someone willing to pay for a number of people to join a communal expression.

[00446] Message processing in a distributed network includes both routing and delivery of messages as well as transforming such messages. These activities are typically performed by message brokers in a middleware implementation; for example, in an implementation of Enterprise Service (ESB) or Bus software architecture. Typically, the messages are dealt with one by one and independent of each other.

[00447] Message processing in a broker (or ESB) generally involves their routing and/or transformation. The content of the input message is generally used to determine the content or destination of the output. Traditionally, this is done one message at a time whereby the content of each message is considered in isolation. However, there are certain applications whereby the meaning of a message can be different depending on the content of previous or subsequent messages. In other words, a message might require the wider context of related messages before it can be processed.

[00448] Even in newer technologies such as Complex Event Processing (CEP), the flow of messages through the broker is unaffected, however, the information from the related messages are extracted for processing of complex events that determine their context from multiple related messages.

[00449] In one embodiment of this invention, the flow of related messages is paused mid flow at the broker, until a related group of them is formed. Then, a combined message is

routed or transformed according to its content. The invention allows processing these messages from multiple inputs, and it teaches group formation criteria and management. The proposed method comprises the following.

Message Broker system for processing and routing messages in a distributed network

[00450] Collector node (block A, FIG. 47) for collecting incoming messages and organizing the incoming messages into collections (groups) based on a user configurable criteria. Collector node may have dynamic input terminals, whose name and number are configurable by the user, where messages are received by the collector node (block A). A correlation path can be used to determine the location of and to extract an extracted value from the content of incoming message, where the extracted value can be located in the message content at the location addressed by the correlation path. A correlation string can be determined based on the extracted value and a correlation pattern (wild card). Collector node can group the messages into a collection based on their common correlation string (FIG. 48). Collector node can hold the collections being built in a first in first out queue (FIFO). Each collection in the queue can have a set of event handlers, one for each input terminal receiving a message.

[00451] As depicted in FIG. 48, the event handler can either accept an incoming message from the associated input terminal into the collection or reject the message. If the event handler accepts the message, the message can become part of the collection, and other event handlers in the queue will not check the message. Nevertheless, if the event handler rejects the message, the next event handler associated with the same input for the next collection in FIFO queue can check the message (the order can be from the earliest collection in the queue to the latest collection).

[00452] If the message is rejected by all event handlers, a new collection can be added to the end of the queue to accept the message and the new collection will be added to the list of current collections. The order of messages in each collection can be kept the same as the order of messages arrived at the collector node. Collector node (A) can have a persistent storage for storing the messages accepted into a collection.

[00453] Whether a collection is ready for propagation (i.e., if it is complete) can be determined based on the user configurable criteria. The user configurable criteria can comprise quantity threshold for the number of messages in a collection (e.g., if reached, the collection is deemed complete; the number may be large), event handler timeout threshold (if reached, the collection is deemed complete; this timeout may be large), collection expiry

(maximum collection timeout when reached the collection is deemed expired—and no more messages may be added), correlation path, and correlation pattern.

[00454] Complete collections can be sent to Out terminal. Expired collections can be sent to Expired terminal. The correlation path can be based on an XPath expression for messages with XML content. The correlation string can be a subset portion of the extracted value once taking out the correlation pattern. Pausing the messages can be received from the input terminals mid flow to process them in collections

[00455] WebSphere Message Broker has an add-on technology supporting Complex Event Processing (CEP) in the form of message processing nodes. The CEP nodes can be used to extract data from the messages, but it does not affect the original message, which still passes through the flow unaffected and hence have to be processed before related messages have been found.

[00456] However, in one embodiment, the current invention holds up messages until they have been formed into group. This allows the messages to be processed after the relevant collections have been made. The node is used to collect incoming messages into collections (groups) in accordance with user configurable criteria. A collection is "ready for propagation" when the collection is "complete" according to the configured parameters. In this case, the collection will be propagated to the "out" terminal. The collection expires according to a configurable timeout from when the first message in the collection arrived. In this case, the collection will be propagated to the "expired" terminal.

[00457] In this embodiment, the node has dynamic input terminals, whose number and names are configurable by the user. The node will hold a FIFO list (queue) of message collections that are currently being built (i.e., still incomplete). Each collection instance on the queue will have a set of event handlers, one for each input terminal. The role of the event handler is to determine whether an incoming message should be accepted as a member of a particular collection. Every event handler associated with a collection will signal that it is "satisfied" before that collection is considered complete. The event handler will store necessary state to support this behavior.

[00458] Incoming messages in the embodiment being described will be offered to each collection in the queue in FIFO order. Either the event handler associated with the terminal that received the message will accept the message into the collection, in which case the message will not be offered to any other collections, OR it will reject the message, in which case the message will be offered to the next collection in the queue. If all collections in the queue reject the message, then a new collection will be added to the end of the queue, and the

message will be accepted into that. The order of messages within each resultant tree structure of the message collection is the same as the order the messages arrived at the collector node. To achieve the required behavior set out in this embodiment of this disclosure, event handlers have been defined with the following four configurable properties:

[00459] Quantity—this configures how many messages this event handler instance should accept (can be infinite if "Timeout" is finite).

[00460] Timeout—Determines the maximum time the event handler should accept messages for (can be infinite if "Quantity" is finite). If both Quantity and Timeout are finite, then the event handler will become satisfied when the first of these two conditions is met.

[00461] Correlation path—this allows messages to be grouped according to a value extracted from the content of the incoming messages. The path may be an XPath 1.0 expression that gets evaluated against the message and cast to a string by calling the XPath string () function.

[00462] Correlation pattern—if a correlation path is specified, the extracted value is matched against this pattern to extract the substring that matches a wildcard. For example, if the correlation path extracts the filename "part1.dat" in a file header, and the pattern is specified as "*.dat", then the correlation string is "part1". All event handlers across a collection will only accept messages that have the same correlation string. The first message in a collection may determine the correlation string that may be matched by all other messages in that collection. A pattern that fails to match the wildcard to a substring will use an empty string as its correlation string. This effectively groups unmatched messages into a default unnamed collection.

[00463] The collector node can have one further property controlling the collection of messages:

[00464] Collection expiry—if configured, this will set a maximum timeout for a collection starting at the time the first message is accepted into the collection. This timer overrides any individual event handler timers. This is used to ensure incomplete collections do not remain and consume resources indefinitely. Once this timer expires, the incomplete collection is propagated to the "expired" output terminal.

[00465] Once the incoming message has been accepted into a collection, it is temporarily written into a persistent store managed by the collector node. When a collection is "ready for propagation," the messages it owns are extracted from this store, built into a single combined message, and propagated on to the next node in the flow.

[00466] With above descriptions, in the current embodiment, a method of grouping messages using message content is proposed. The method comprises the steps of processing a message in a distributed network, transforming the message, routing the message, and collecting the message into a first group at a collector node, based on user configurable criteria.

[00467] The collector node comprises dynamic input terminals, which receive the message. The name and number of the dynamic input terminals are configurable by the user. The collector, using a correlation path to determine a first location and to extract a first value from the content of the message, determines a first correlation string, based on the extracted first value and a correlation pattern and compares the first correlation string with a second correlation string, to find a common correlation string, by pausing the message received from the dynamic input terminals mid-flow, to process the message in collection.

[00468] The collector node groups the incoming messages into a collection, based on the common correlation string and holding the collection in a first-in-first-out queue. The collection in a first-in-first-out queue has a set of event handlers and each one in the set of event handlers corresponds to one of the dynamic input terminals.

[00469] The event handler either accepts the message or rejects the message. In case the event handler accepts the message, the message becomes a part of the collection. In case the event handler rejects the message, another event handler associated with the same dynamic input terminal for the next earliest collection in the first-in-first-out queue checks the message. In case the message is rejected by all of the event handlers, a new collection to the end of the first-in-first-out queue is added by the collector node, to accept the message.

[00470] Based on the user configurable criteria, the collector node further determines whether the collection is ready for propagation or not. The user configurable criteria comprises a quantity threshold for the number of messages in the collection, an event handler timeout threshold, a collection expiry for maximum collection timeout, a correlation path, and the correlation pattern sending completed collections to an out terminal, and sending expired collections to an expired terminal.

Example 1

[00471] FIG. 22 shows a display device 2200 that is configured to display media selected by a user. FIG. 22 shows an exploded side view of the display device. The display device includes a circular display, printed circuit board assembly (PCBA), battery, a back housing (or carrier) and steel cover. The display device has a thickness of about 13.48 millimeter. The internal components (i.e., display, PCBA and battery) have a thickness of about 9.88

mm. The display device 2200 may be as described in PCT/US2015/041308 (“WEARABLE DISPLAY DEVICES”), which is entirely incorporated herein by reference.

Example 2

[00472] The present disclosure provides various non-limiting examples of display devices. The display devices can be wearable devices. The display devices can be mountable on a user or an inanimate object. FIG. 33 shows examples of a wearable device of a user that is in the form of a button. A display screen of the wearable device shows expressions (e.g., three bands or “STAND UP TO CANCER” with arrows, and “Save the Planet”), including media (e.g., arrows, trees and bicycle). The expressions may be retrieved from an electronic device of the user. The expressions may be created on the electronic device or downloaded from another system or device, such as a server. FIG. 37 shows the user wearing the wearable device on a shirt of the user.

[00473] FIG. 34 shows a wearable device with a magnetic attachment, including a magnetic lock. The magnetic attachment can permit the wearable device to be secured against an article of clothing of the user.

[00474] FIG. 35 shows a wearable device with a clip. The clip can permit the wearable device to be secured against an article of clothing of the user, or another object (e.g., bag).

[00475] FIG. 36 shows a wearable device with a lanyard. The lanyard can permit the wearable device to be secured against the user or another object (e.g., bag).

[00476] FIG. 38 shows a charger with an inductive charging area for charging a wearable device. The user may deposit the wearable device in the charging area for automatic charging.

[00477] FIG. 39A and 39B show exploded views of another example of a wearable device. The wearable device includes a light emitting diode (LED) display, which can be an OLED. The wearable device can include a charge coil for inductive charging.

[00478] FIGs. 40A and 40B show exploded side and cross-section views, respectively, of another example of a wearable device. The wearable device includes a 1 millimeter (mm) lens adjacent to a 1.47 mm display.

[00479] FIGs. 41A and 41B show schematics of another example of a wearable device. FIG. 41A is an exploded side view of another example of a wearable device. FIG. 41B is an angled view of the wearable device. The wearable device is in the form of a round button, though other shapes may be used.

[00480] FIG. 42 shows a display device mounted on a rear windshield of a vehicle. The display device is circular, but other shapes may be used. For example, the display device can

be triangular, square or rectangular. The display device can be mounted on various locations of the vehicle, including, without limitation, the bumper (e.g., the display device can be a bumper sticker).

[00481] While preferred embodiments of the present invention have been shown and described herein, it will be obvious to those skilled in the art that such embodiments are provided by way of example only. It is not intended that the invention be limited by the specific examples provided within the specification. While the invention has been described with reference to the aforementioned specification, the descriptions and illustrations of the embodiments herein are not meant to be construed in a limiting sense. Numerous variations, changes, and substitutions will now occur to those skilled in the art without departing from the invention. Furthermore, it shall be understood that all aspects of the invention are not limited to the specific depictions, configurations or relative proportions set forth herein which depend upon a variety of conditions and variables. It should be understood that various alternatives to the embodiments of the invention described herein may be employed in practicing the invention. It is therefore contemplated that the invention shall also cover any such alternatives, modifications, variations or equivalents. It is intended that the following claims define the scope of the invention and that methods and structures within the scope of these claims and their equivalents be covered thereby.

CLAIMS

WHAT IS CLAIMED IS:

1. A method for displaying or projecting media on a remote visual curvilinear display device, comprising:
 - (a) bringing a computer server in network communication with an electronic device of a user, which electronic device is in communication with said remote visual curvilinear display device for displaying or projecting said media on said remote visual curvilinear display device;
 - (b) determining one or more parameters associated with said user, wherein said one or more parameters comprise a display and/or location preference or schedule of said user;
 - (c) selecting said media at said computer server for display or projection by said remote visual curvilinear display device of said user, wherein said media is selected based on said one or more parameters associated with said user;
 - (d) directing said media from said computer server to said electronic device for display or projection on said remote visual curvilinear display per said display and/or location preference or schedule of said user; and
 - (e) receiving, at said computer server, an item of value of said user in exchange for said media.
2. The method of Claim 1, wherein said remote visual curvilinear display device is flexible.
3. The method of Claim 1, wherein said remote visual curvilinear display is circular, oval, triangular, square rectangular, or other suitable polygonal.
4. The method of Claim 1, wherein said remote visual curvilinear display device is mounted on a body of said user.
5. The method of Claim 1, wherein said remote visual curvilinear display device is mounted on an inanimate object.
6. The method of Claim 1, wherein said media comprises an advertisement.
7. The method of Claim 1, wherein said remote visual curvilinear display device includes a display and a support member.
8. The method of Claim 7, wherein said support member includes a button, a pin, a clip, a hook, a loop, a lanyard, or a magnetically attractable lock.
9. The method of claim 1, wherein said remote visual curvilinear display device further comprises one or more input devices including a microphone, camera, touch screen keypad, keyboard, or a combination thereof.

10. The method of Claim 9, further comprising, after (d), receiving an input comprising a request for one or more additional media, wherein said input is received from said one or more input devices of said remote visual curvilinear display device.
11. The method of Claim 10, wherein said input is received from said user.
12. The method of Claim 10, wherein said input is received from an observer of said remote visual curvilinear display device, wherein said observer is distinct from said user.
13. The method of Claim 10, wherein said one or more additional media comprises additional advertisements.
14. The method of Claim 1, further comprising:
 - identifying one or more additional remote visual curvilinear display devices that are distinct from and in proximity to said remote visual curvilinear display device;
 - coordinating said remote visual curvilinear display device with said one or more additional remote visual curvilinear display devices using respective location information of said remote visual curvilinear display device and said one or more additional remote visual curvilinear display devices; and
 - identifying coordinated media for display or projection by said remote visual curvilinear display device and said one or more additional remote visual curvilinear display devices, wherein each display of said remote visual curvilinear display device and said one or more additional remote visual curvilinear display devices displays said coordinated media or a respective portion of said coordinated media.
15. The method of Claim 14, further comprising providing said coordinated media or respective portion of said coordinated media for display or projection on each display of said remote visual curvilinear display device and said one or more additional remote visual curvilinear display devices.
16. The method of Claim 14, wherein said one or more additional remote visual curvilinear display devices are associated with said user.
17. The method of Claim 14, wherein said one or more additional remote visual curvilinear display devices are associated with one or more additional users, wherein said one or more additional users are in proximity to said user.
18. The method of Claim 1, further comprising tracking media usage information associated with said user on said remote visual curvilinear display device.
19. The method of Claim 1, further comprising creating a dashboard for display or projection on said remote visual curvilinear display device, wherein the dashboard displays aggregate information based on selections of said media by a plurality of users.

20. The method of Claim 1, wherein in (a), said computer server is in network communication with said remote visual curvilinear display device through an electronic device of said user.
21. A computer system for displaying or projecting media on a remote visual curvilinear display, comprising:
- a communication interface in network communication with an electronic device of a user, which electronic device is in communication with said remote visual curvilinear display device of a user; and
 - a computer processor in communication with said communication interface, wherein said computer processor is programmed to:
 - (i) determine one or more parameters associated with said user, wherein said one or more parameters comprise a display and/or location preference or schedule of said user;
 - (ii) select said media at said computer server for display or projection by said remote visual curvilinear display device of said user, wherein said media is selected based on said one or more parameters associated with said user;
 - (iii) direct said media from said computer server to said electronic device for display or projection on said remote visual curvilinear display per said display and/or location preference or schedule of said user; and
 - (iv) receive, at said computer server, an item of value of said user in exchange for said media.
22. The computer system of Claim 21, wherein said media comprises advertisements.
23. The computer system of Claim 21, wherein said remote visual curvilinear display device further comprises one or more input devices including microphone, camera, touch screen keypad, keyboard, or a combination thereof.
24. The computer system of Claim 23, wherein said computer processor is further programmed to, after (iii), receive an input comprising a request for one or more additional media, wherein said input is received from said one or more input devices of said remote visual curvilinear display device.
25. The computer system of Claim 24, wherein said input is received from said user.
26. The computer system of Claim 24, wherein said input is received from an observer of said remote visual curvilinear display device, wherein said observer is distinct from said user.
27. The computer system of Claim 24, wherein said one or more additional media comprises additional advertisements.

28. The computer system of Claim 21, wherein said computer processor is further programmed to:

identify one or more additional remote visual curvilinear display devices that are distinct from and in proximity to said remote visual curvilinear display device;

coordinate said remote visual curvilinear display device with said one or more additional remote visual curvilinear display devices using respective location information of said remote visual curvilinear display device and said one or more additional remote visual curvilinear display devices; and

identify coordinated media for display or projection by said remote visual curvilinear display device and said one or more additional remote visual curvilinear display devices, wherein each display of said remote visual curvilinear display device and said one or more additional remote visual curvilinear display devices displays said coordinated media or a respective portion of said coordinated media.

29. The computer system of Claim 28, wherein said computer processor is further programmed to provide said coordinated media or respective portion of said coordinated media for display or projection on each display of said remote visual curvilinear display device and said one or more additional remote visual curvilinear display devices.

30. The computer system of Claim 28, wherein said one or more additional remote visual curvilinear display devices are associated with said user.

31. The computer system of Claim 28, wherein said one or more additional remote visual curvilinear display devices are associated with one or more additional users, wherein said one or more additional users are in proximity to said user.

32. The computer system of Claim 21, wherein said computer processor is further programmed to track media usage information associated with said user on said remote visual curvilinear display device.

33. The computer system of Claim 21, said computer processor is further programmed to create a dashboard for display or projection on said remote visual curvilinear display device.

34. The computer system of Claim 21, wherein said computer server is in network communication with said remote visual curvilinear display device through an electronic device of said user.

35. A method for displaying or projecting media on a remote visual curvilinear display device, comprising:

(a) bringing a computer server in network communication with a mobile electronic device associated with a user among a network of users, which mobile electronic device is in

communication with said remote visual curvilinear display device, wherein said mobile electronic device comprises a display screen having a graphical user interface (GUI) with one or more graphical elements that permit the user to input a request for said media to be displayed or projected by said remote visual curvilinear display device associated with said network of users;

(b) identifying said media from a media item among a plurality of media items stored at said computer server, wherein said media item is provided by an individual user in said network of users and includes said media associated with identifying information of said media, which identifying information is stored on said computer server;

(c) directing said media from said computer server to said mobile electronic device for display or projection on said remote visual curvilinear display device; and

(d) receiving, at said computer server, an item of value of said user in exchange for said media.

36. The method of Claim 35, wherein said media items are created, shared, or traded by said network of users.

37. The method of Claim 35, further comprising filtering and storing said media items previously created, shared, or traded on said computer server.

38. The method of Claim 35, further comprising:

receiving, at said computer server, an item of value in exchange for displaying or projecting said media on a remote visual curvilinear display from a user; and

directing said media from said computer server to a mobile electronic device in exchange for said item of value for displaying or projecting on said remote visual curvilinear display.

39. The method of Claim 35, further comprising receiving an input of selection from a user on a mobile electronic device associated with said user with respect to selecting said media from said one or more media items stored at said computer server, and wherein said input further comprises displaying or projecting said media on said remote visual curvilinear display device per a display and/or location preference or schedule selected by said user.

40. The method of Claim 39, further comprising, at said computer server, broadcasting a notification associated with the selection of the user to respective mobile electronic devices associated with the network of users.

41. The method of Claim 35, further comprising, at said computer server, receiving one or more messages with respect to said media from said network of users.

42. The method of Claim 41, wherein said one or more messages are related to purchasing or trading said media for display or projection by one or more remote visual curvilinear display devices respectively.

43. The method of Claim 41, wherein said one or more messages are related to providing feedbacks about said media from said network of users.

44. The method of Claim 41, further comprising, at said computer server, collecting statistics and/or demographic information of said one or more messages.

45. A computer system for displaying or projecting media on a remote visual curvilinear display, comprising:

a communication interface in network communication with a mobile electronic device associated with a user among a network of users, which mobile electronic device is in communication with said remote visual curvilinear display device, wherein said mobile electronic device comprises a display screen having a graphical user interface (GUI) with one or more graphical elements that permit the user to input a request for said media to be displayed or projected by said remote visual curvilinear display device associated with said network of users; and

a computer processor in communication with said communication interface, wherein said computer processor is programmed to:

(i) identify said media from a media item among a plurality of media items stored at said computer server, wherein said media item is provided by an individual user in said network of users and includes said media associated with identifying information of said media, which identifying information is stored on said computer server;

(ii) direct said media from said computer server to said mobile electronic device for display or projection on said remote visual curvilinear display device; and

(iii) receive, at said computer server, an item of value of said user in exchange for said media.

46. The computer system of Claim 45, wherein said media items are created, shared, or traded by said network of users.

47. The computer system of Claim 45, wherein said computer processor is further programmed to filter and store said media items previously created, shared, or traded on said computer server.

48. The computer system of Claim 45, wherein said computer processor is further programmed to:

receive, at said computer server, an item of value in exchange for displaying or projecting said media on a remote visual curvilinear display from a user; and

direct said media from said computer server to a mobile electronic device in exchange for said item of value for displaying or projecting on said remote visual curvilinear display.

49. The computer system of Claim 48, wherein said computer processor is further programmed to receive an input of selection from a user on a mobile electronic device associated with said user with respect to selecting said media from said one or more media items stored at said computer server, and wherein said input further comprises displaying or projecting said media on said remote visual curvilinear display device per a display and/or location preference or schedule selected by said user.

50. The computer system of Claim 49, wherein said computer processor is further programmed to broadcast a notification associated with the selection of the user to respective mobile electronic devices associated with the network of users.

51. The computer system of Claim 45, wherein said computer processor is further programmed to receive one or more messages with respect to said media from said network of users.

52. The computer system of Claim 51, wherein the one or more messages are related to purchasing or trading said media for display or projection by one or more remote visual curvilinear display devices respectively.

53. The computer system of Claim 51, wherein the one or more messages are related to providing feedbacks about said media from said network of users.

54. The computer system of Claim 53, wherein said computer processor is further programmed to collect statistics and/or demographic information related to said messages.

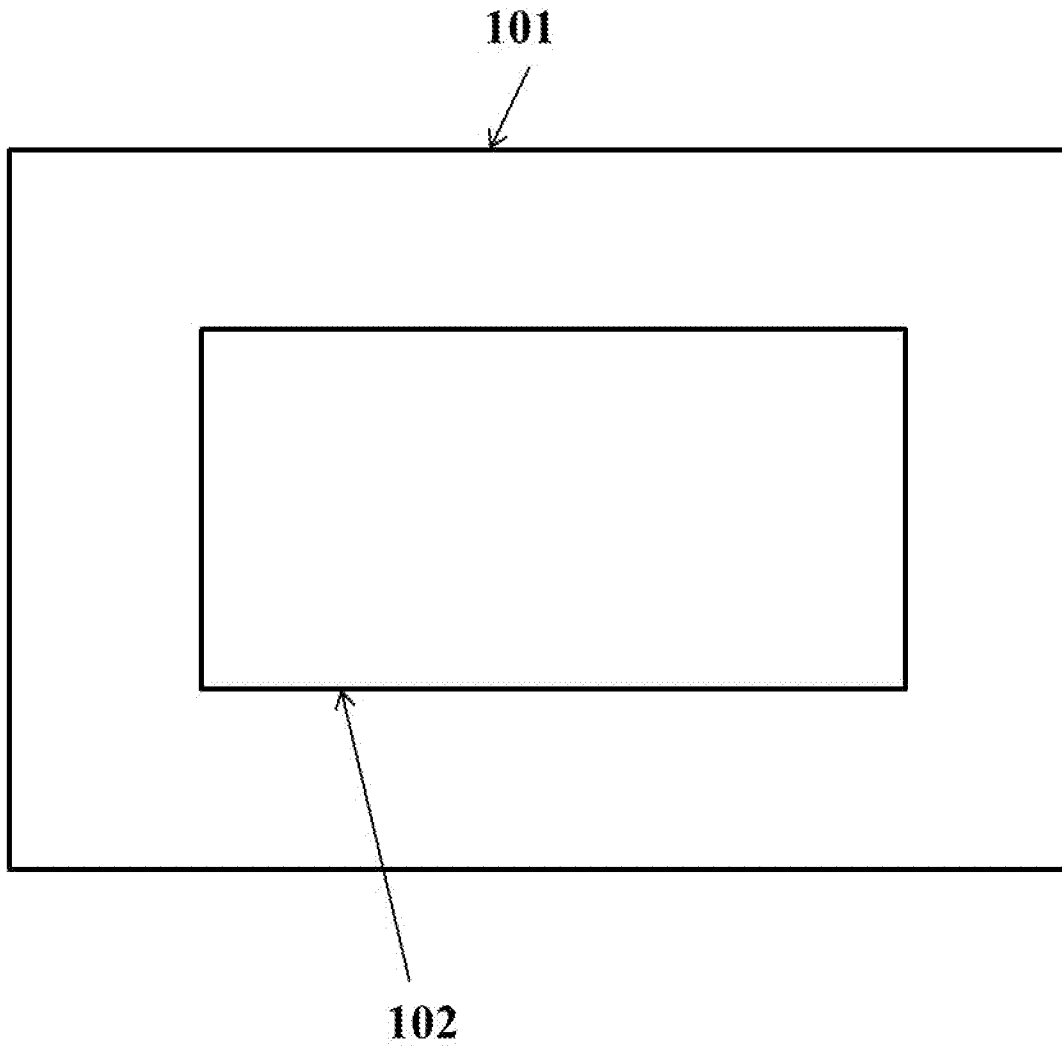


FIG. 1

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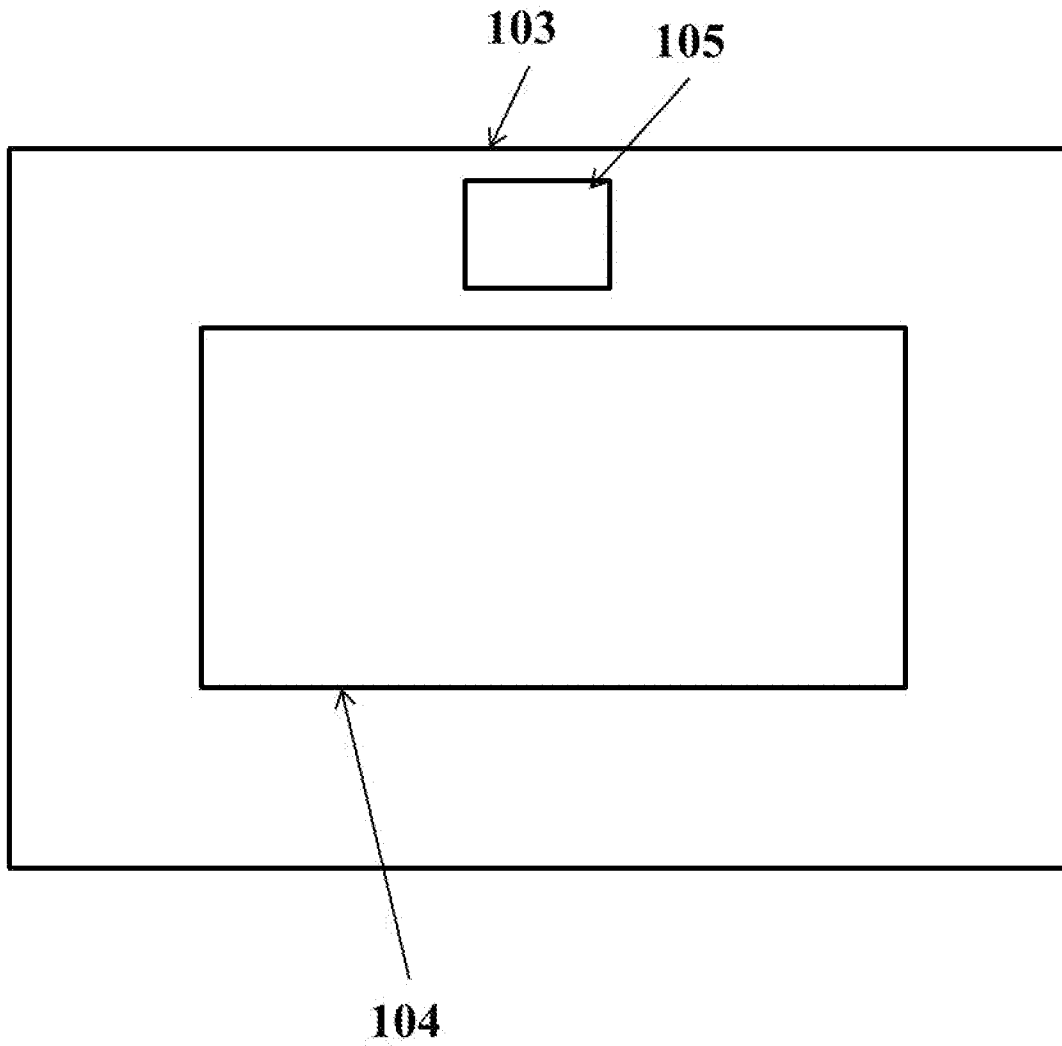
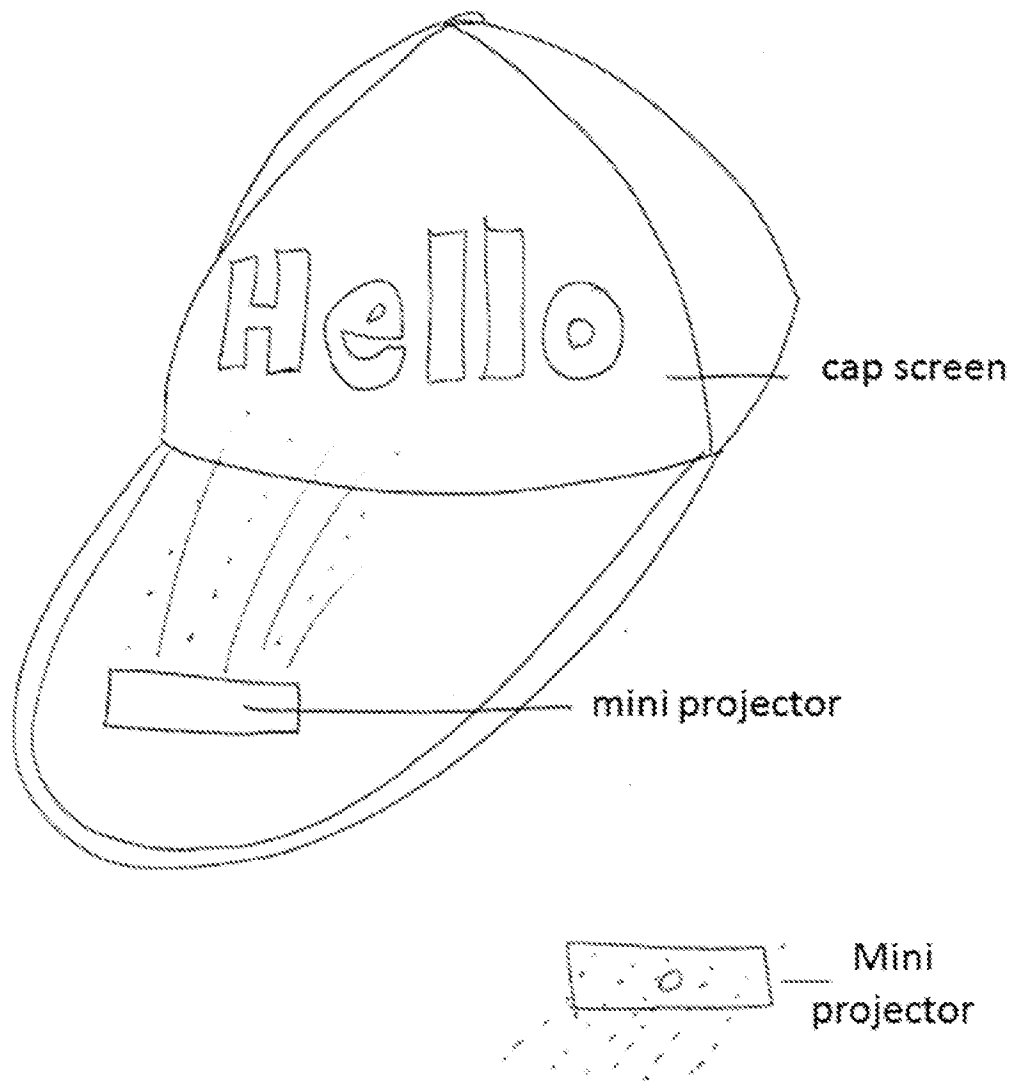
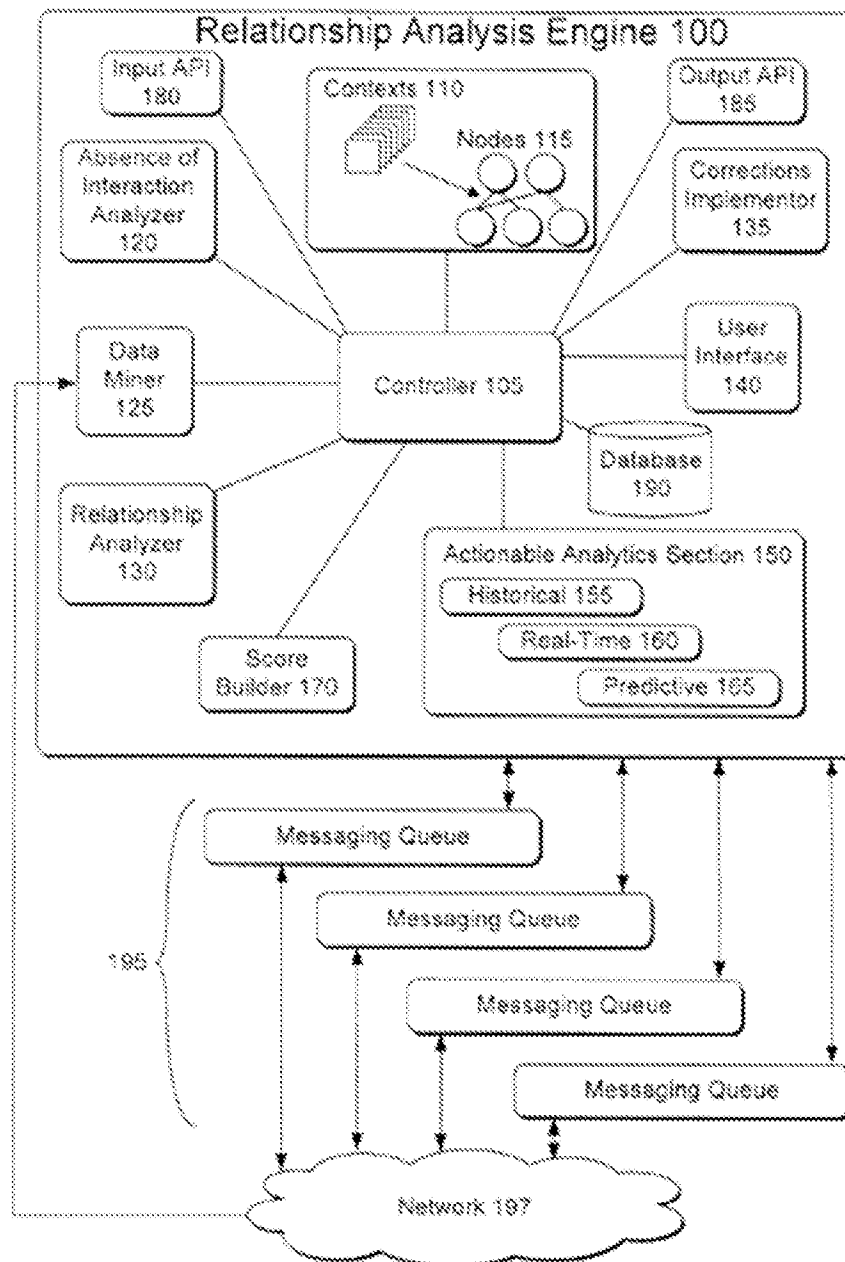


FIG. 2

Projector Bill

Projected onto clear surface

**FIG. 3**

**FIG. 4**

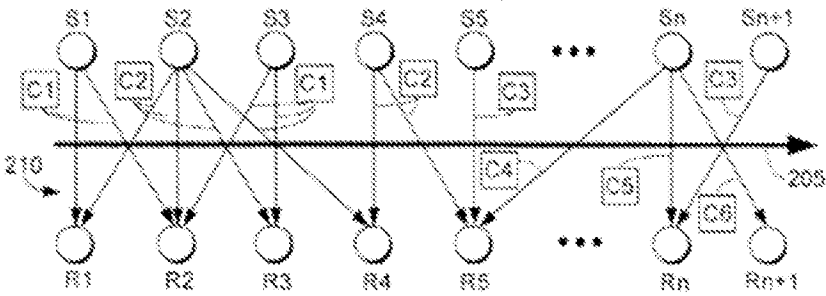
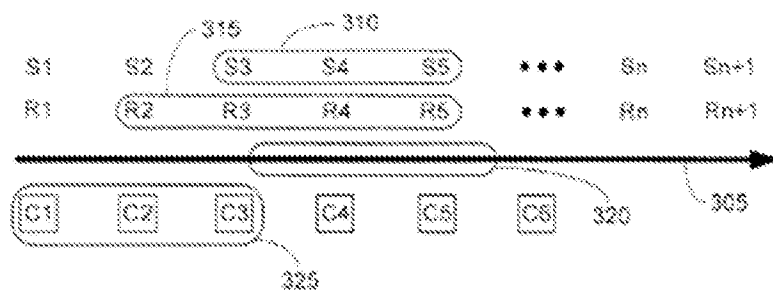
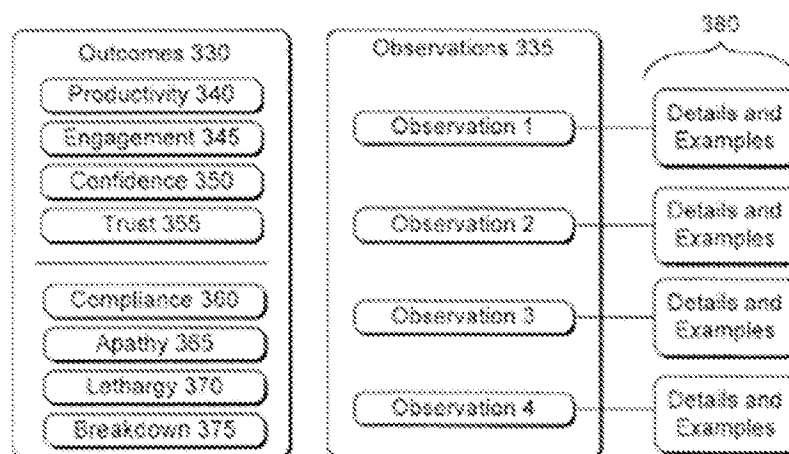


FIG. 5

**FIG. 6A****FIG. 6B**

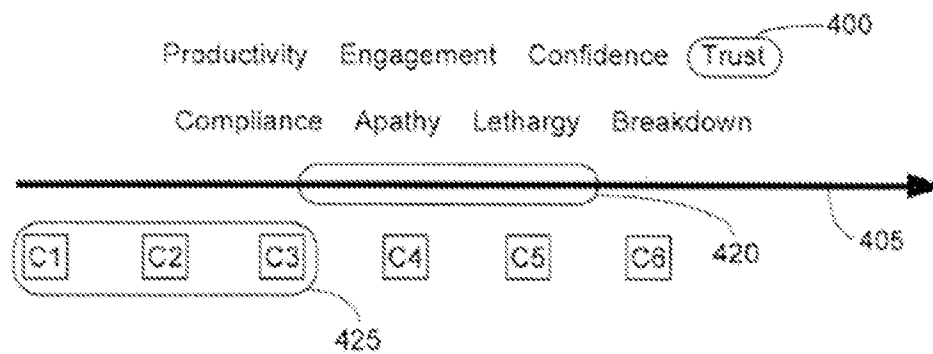


FIG. 7A

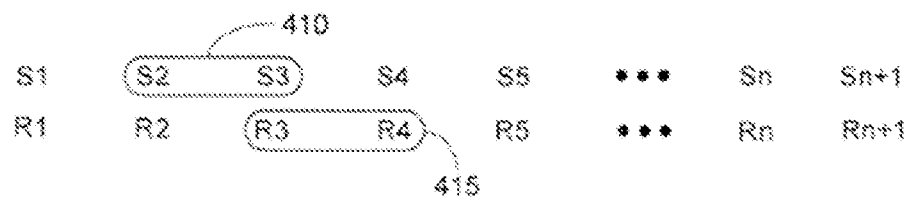
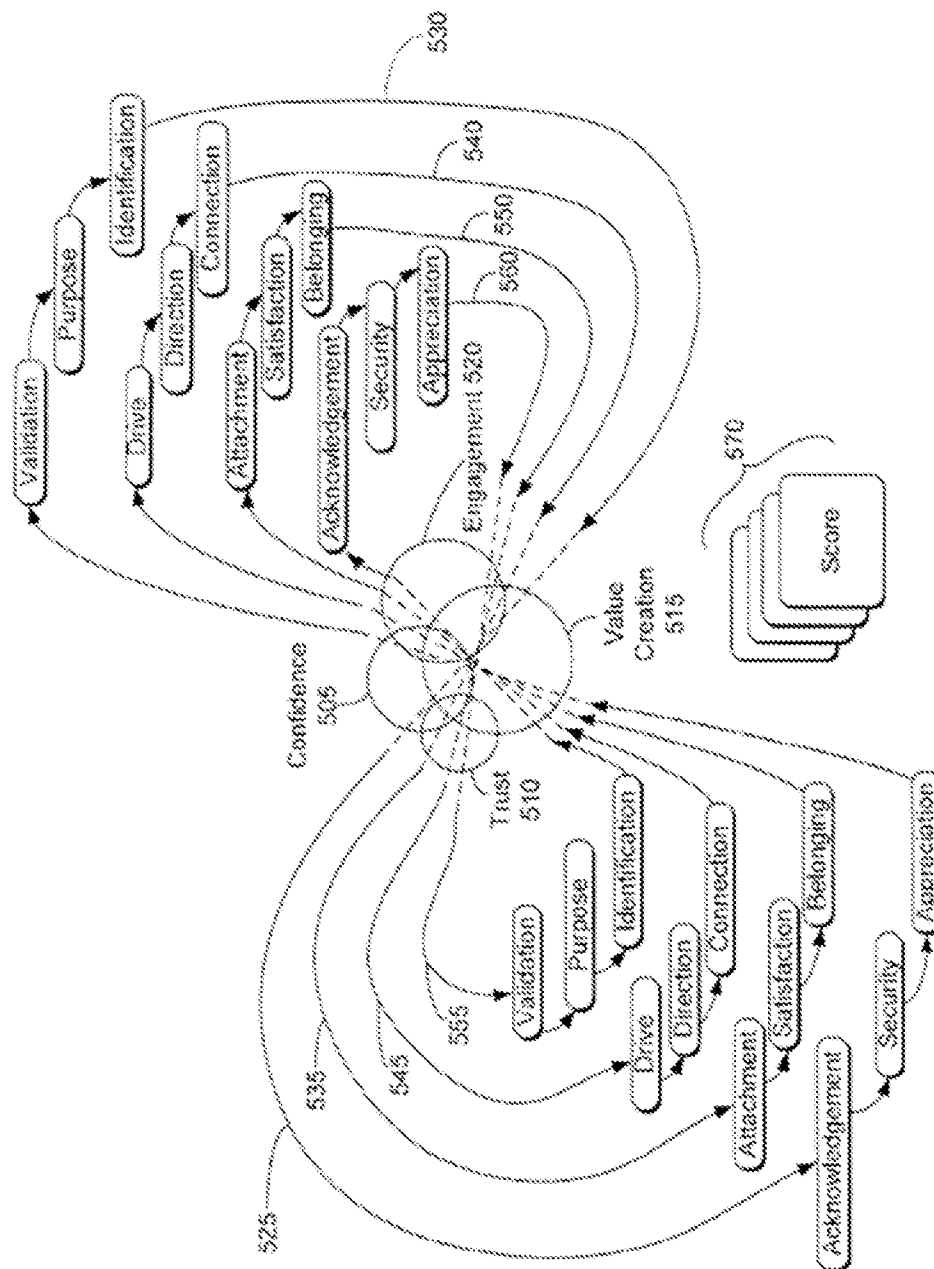


FIG. 7B



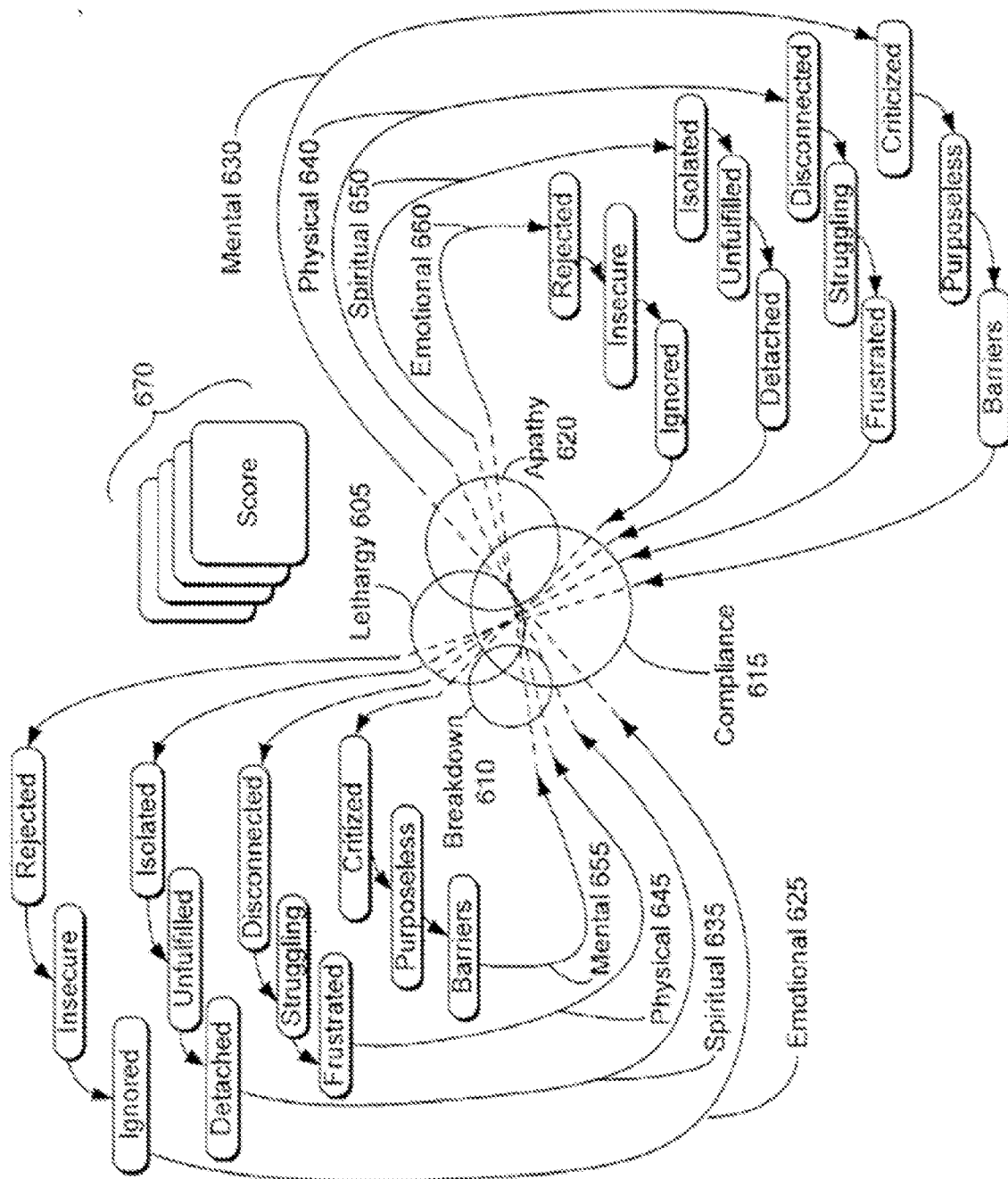


FIG. 9

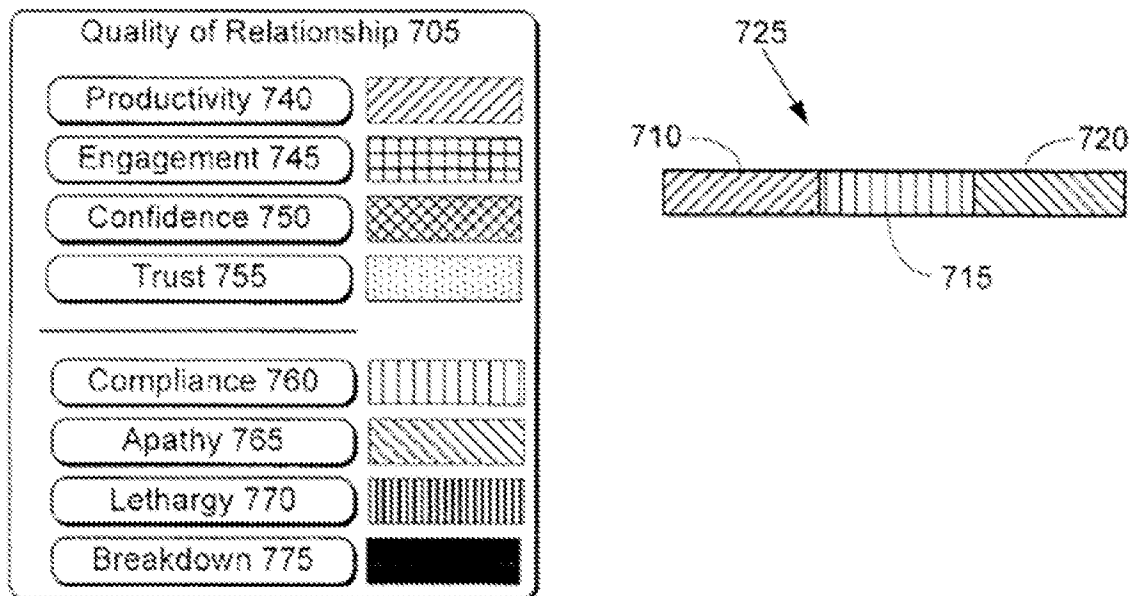


FIG. 10

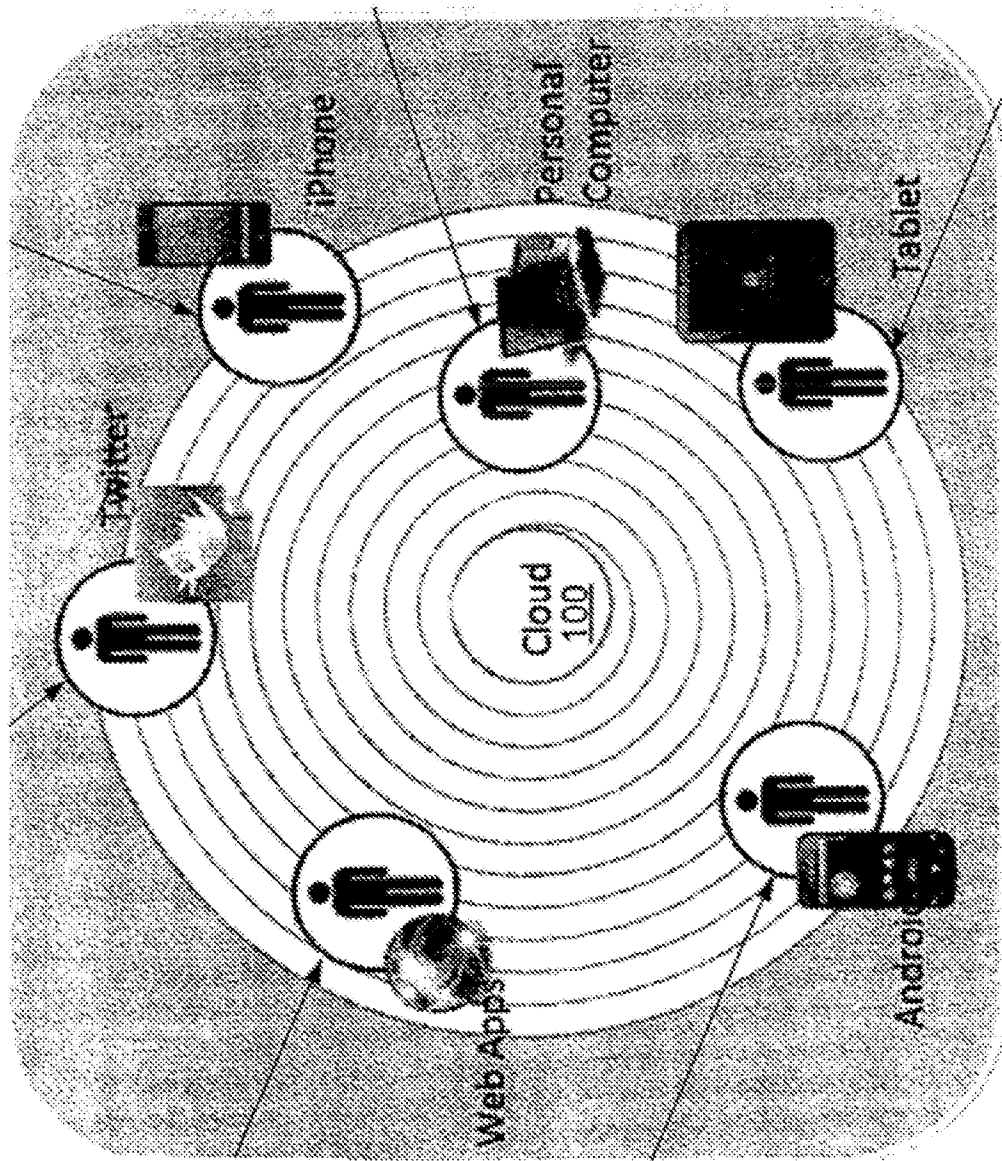


FIG. 11A

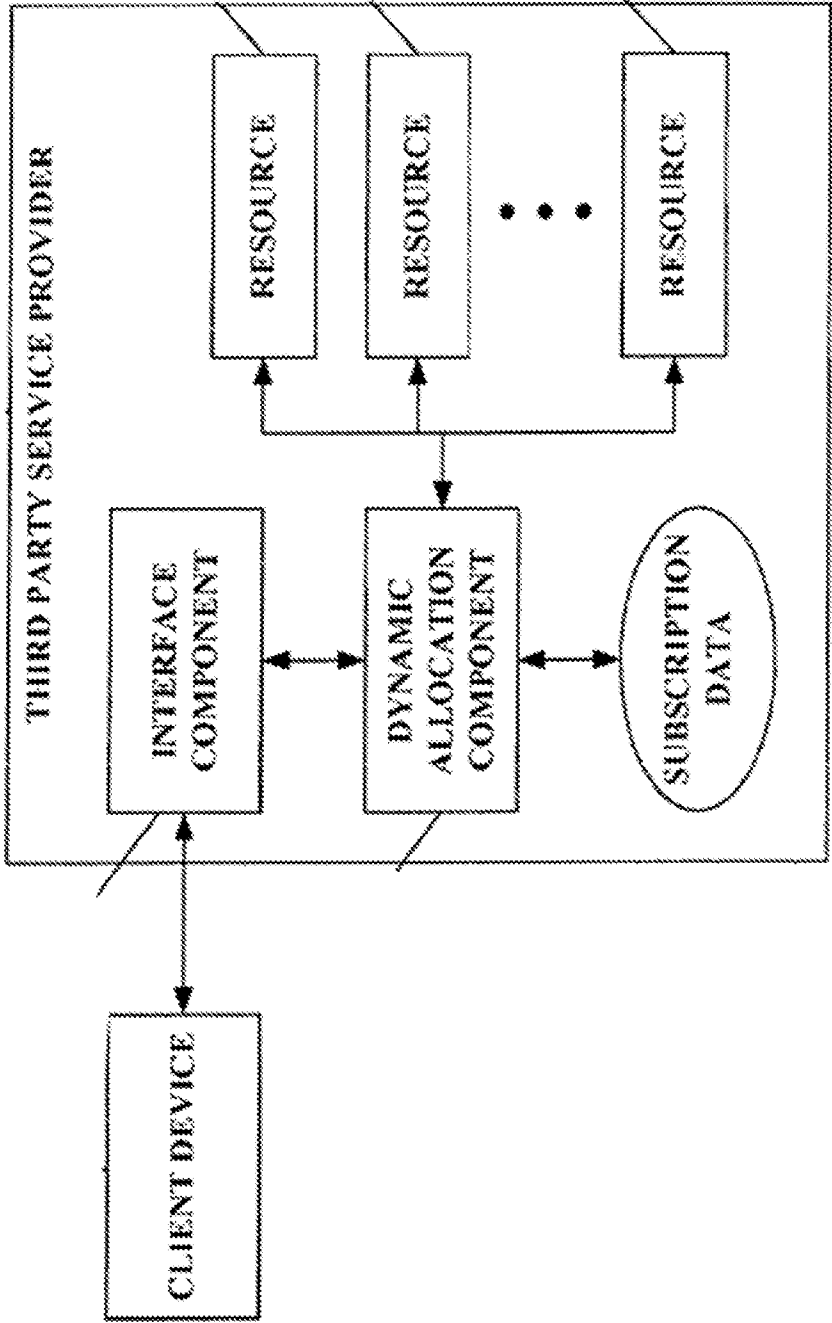


FIG. 11B

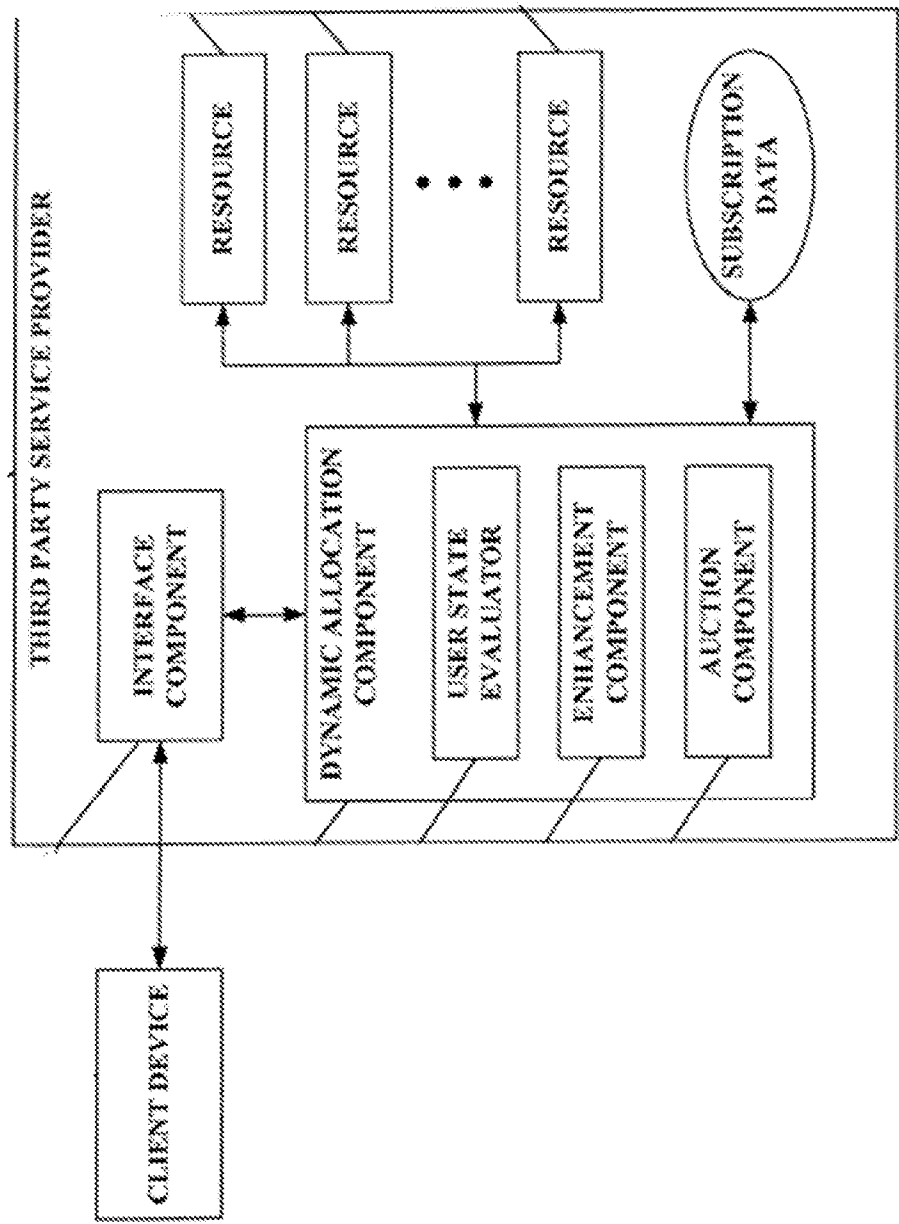


FIG. 11C

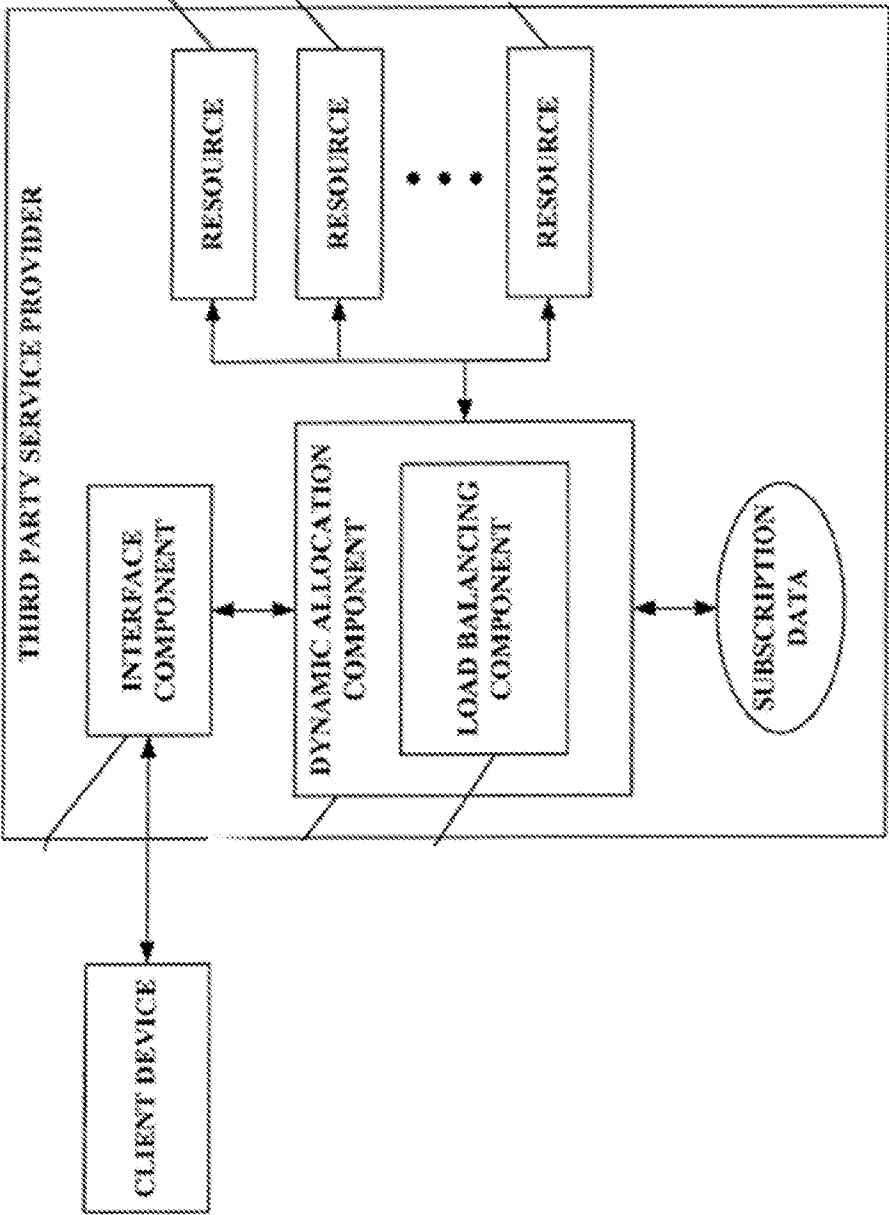


FIG. 11D

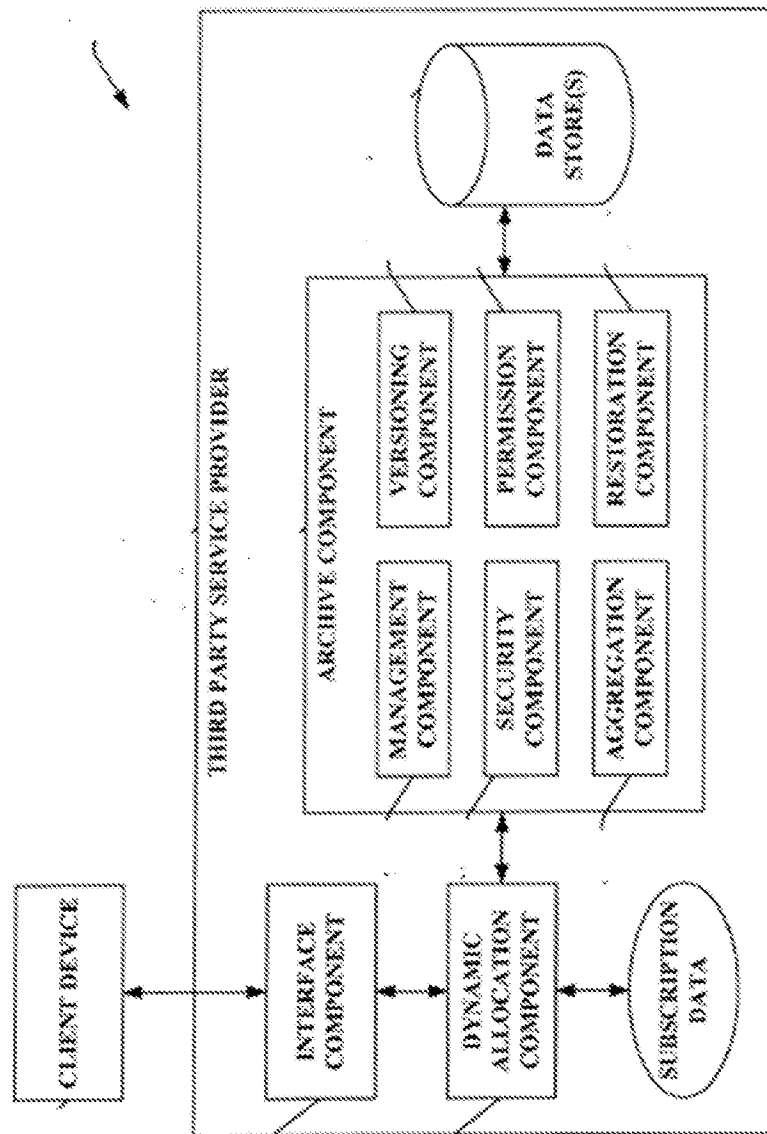


FIG. 11E

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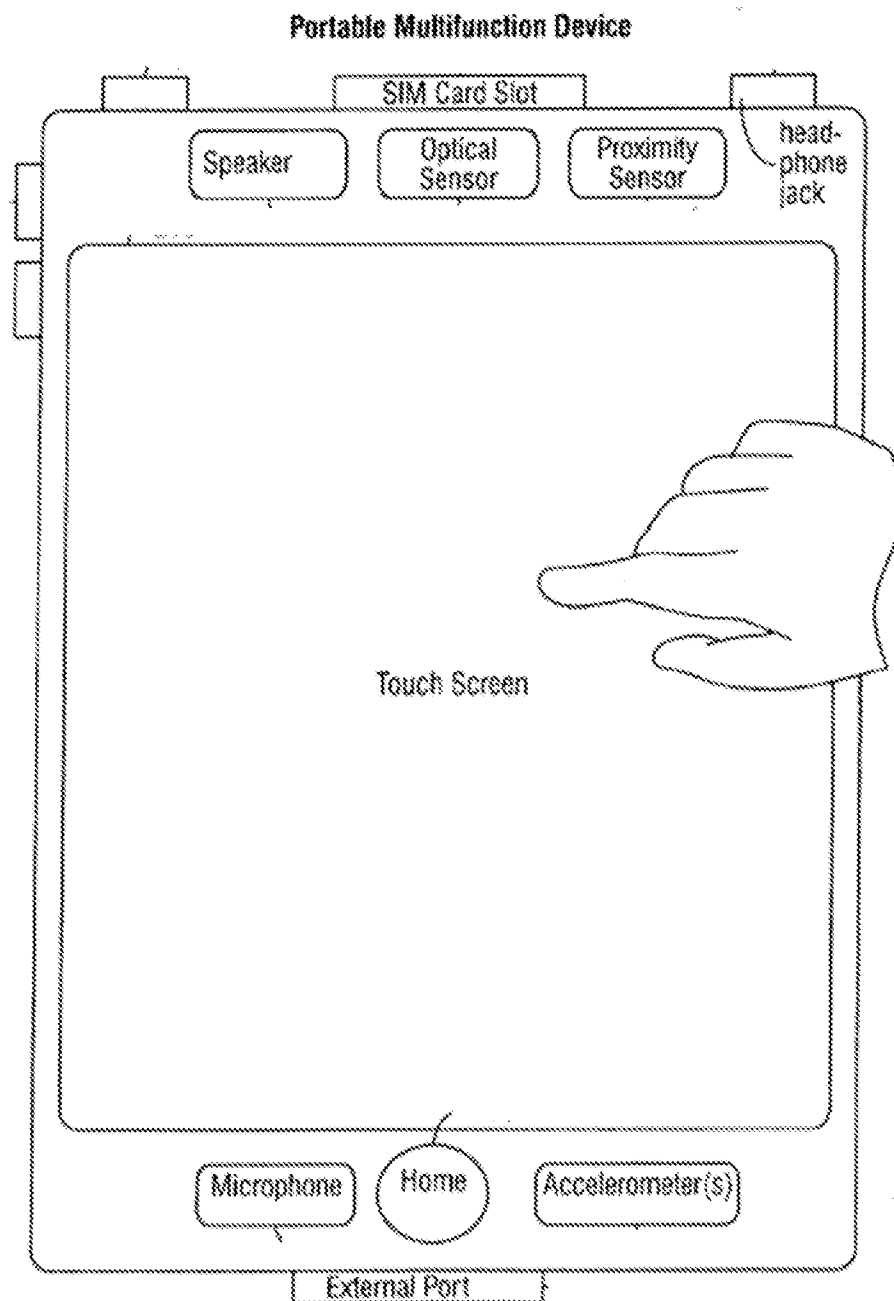
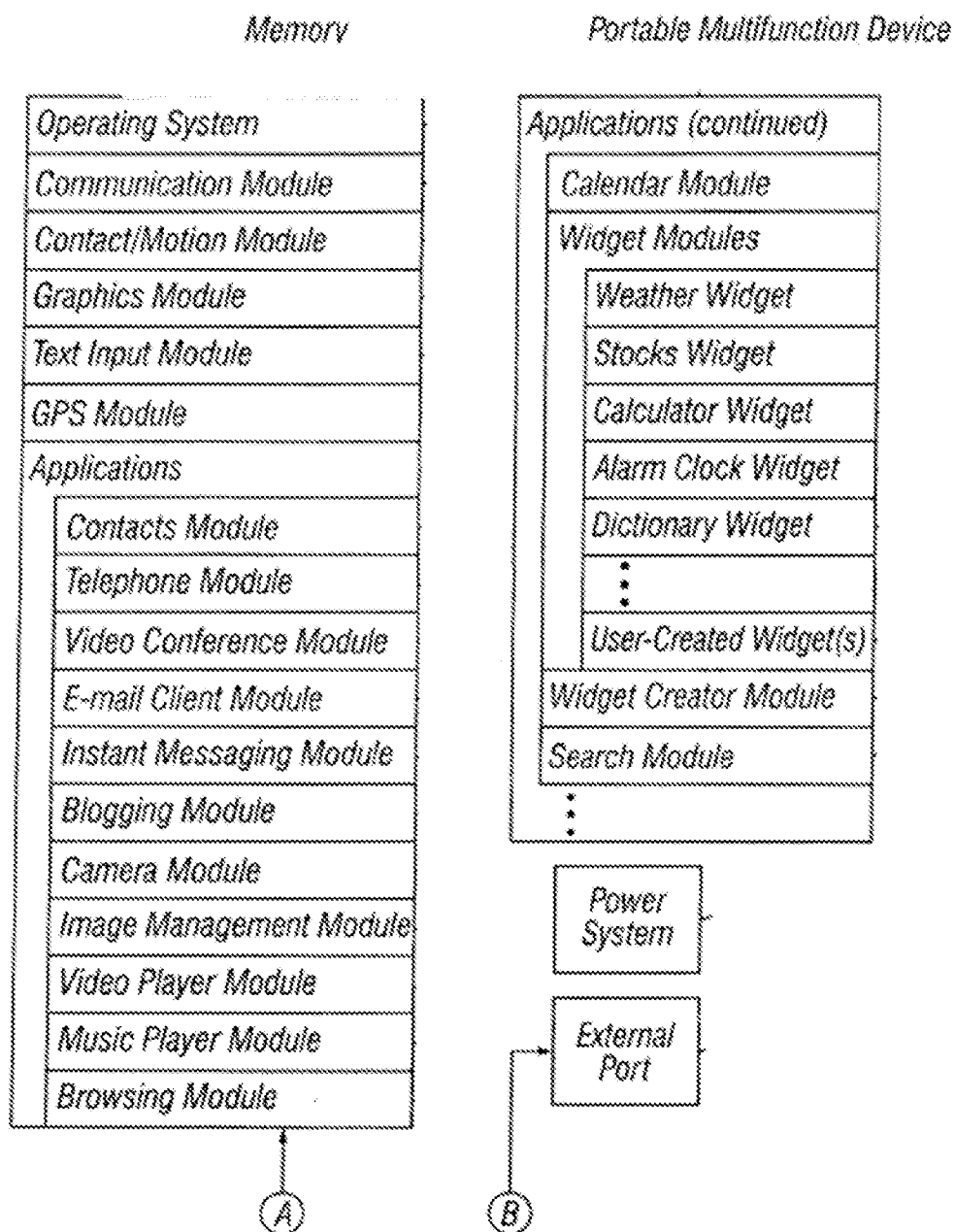
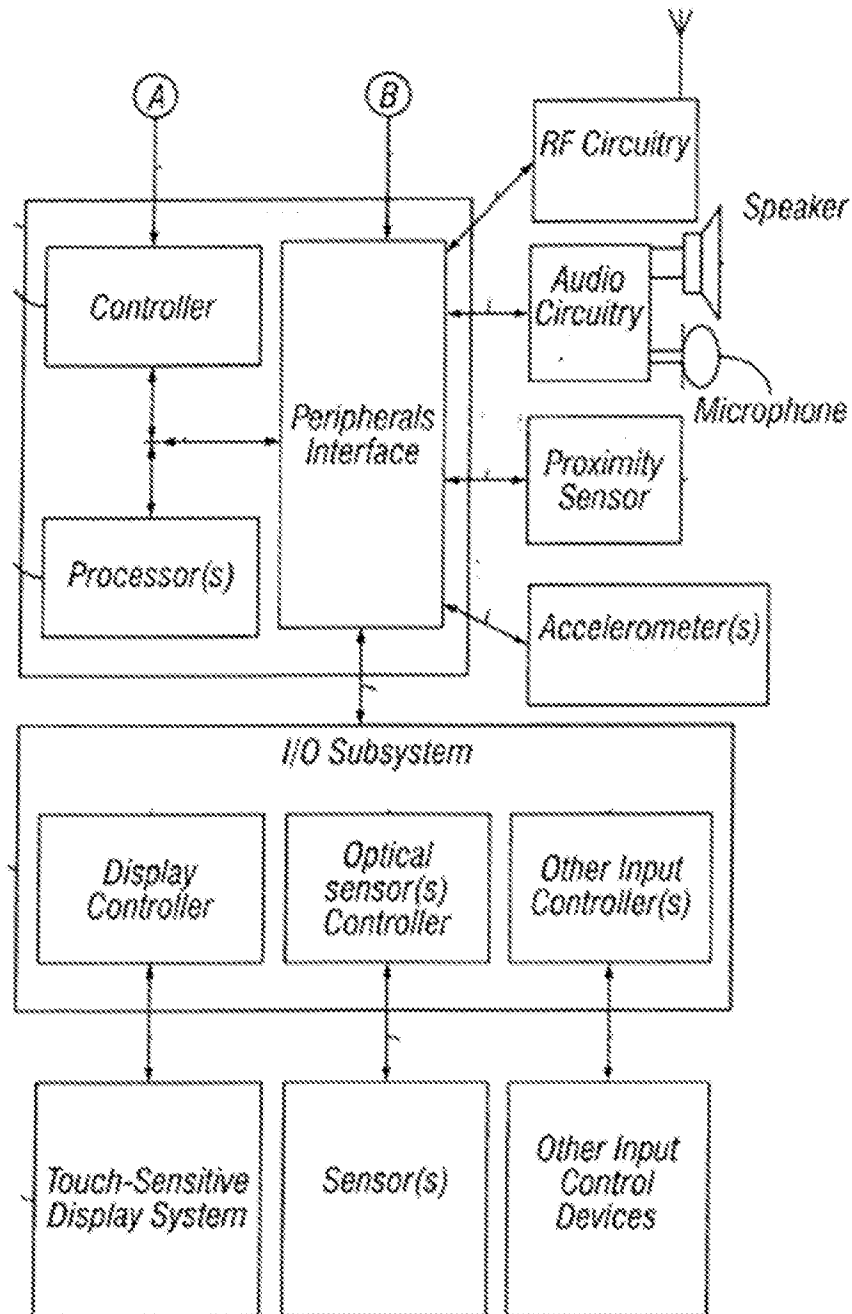


FIG. 12

**FIG. 13**

**FIG. 14**

Modular Band – multi use / adjustable

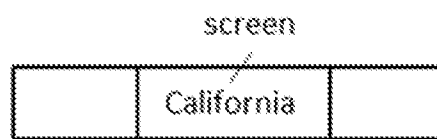


FIG. 15A

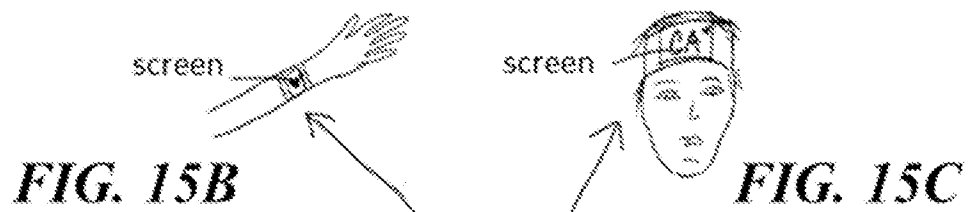


FIG. 15B

FIG. 15C

Modular Hat

removable
screen band



FIG. 16A

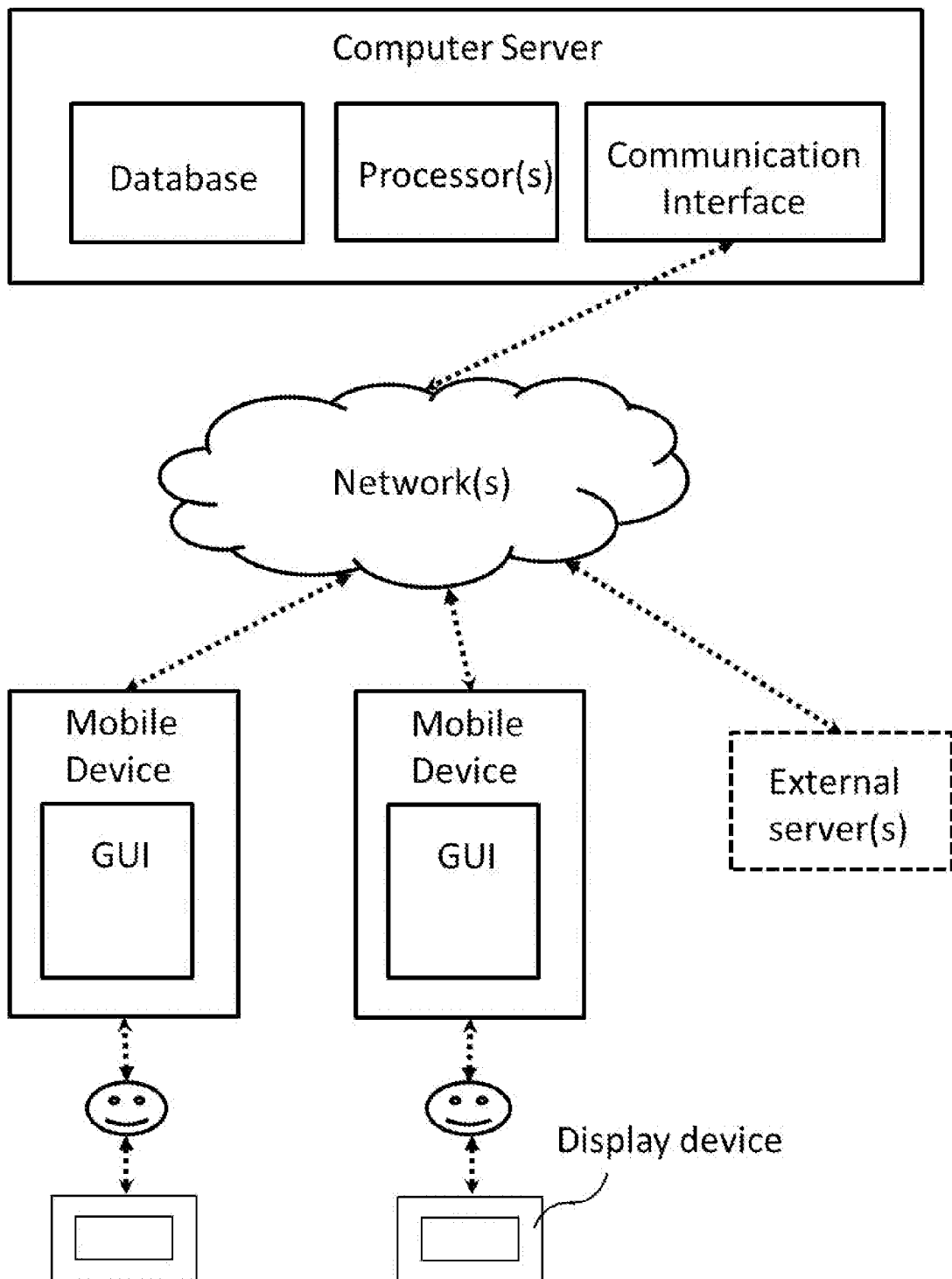
band



separate
removable
parts

FIG. 16B

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**FIG. 17**

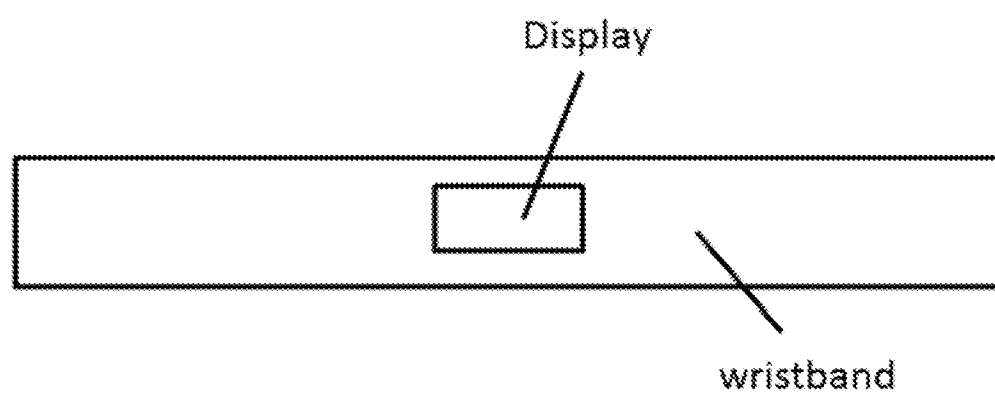


FIG. 18

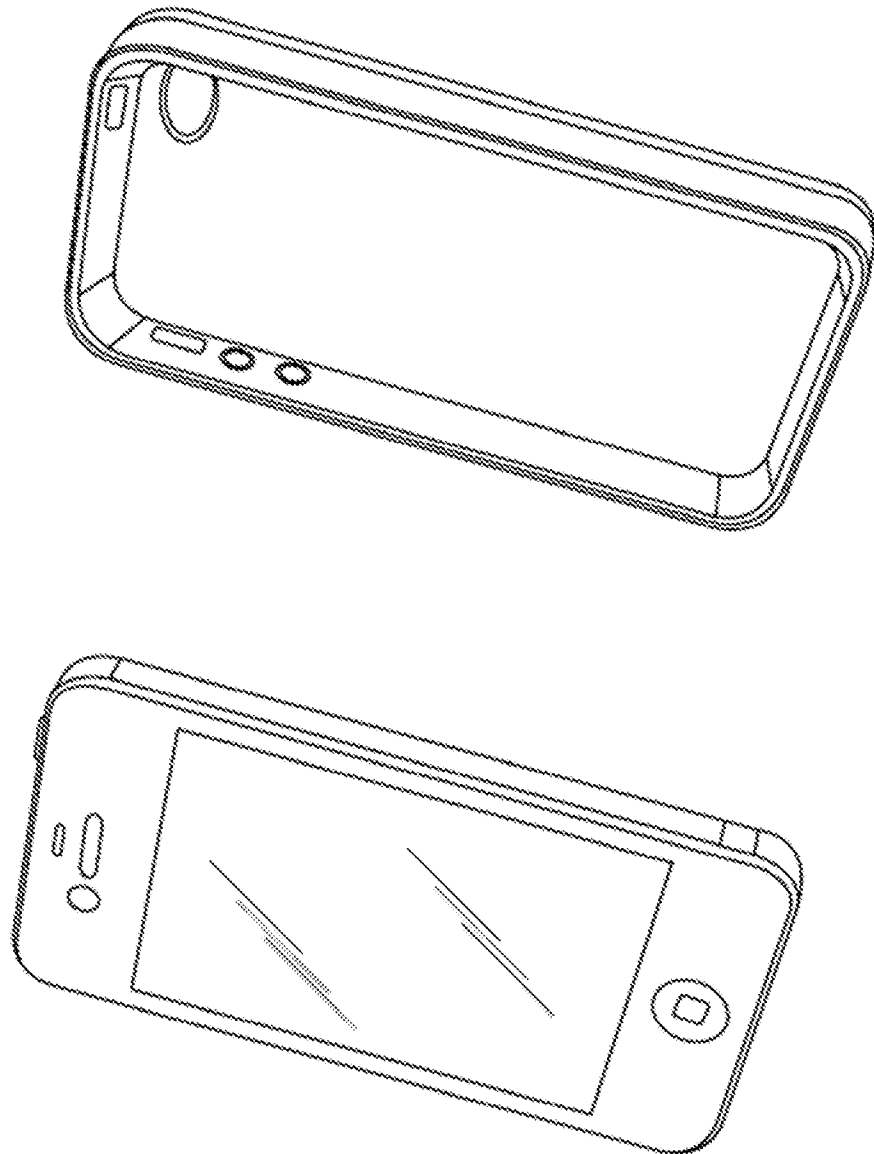


FIG. 19A

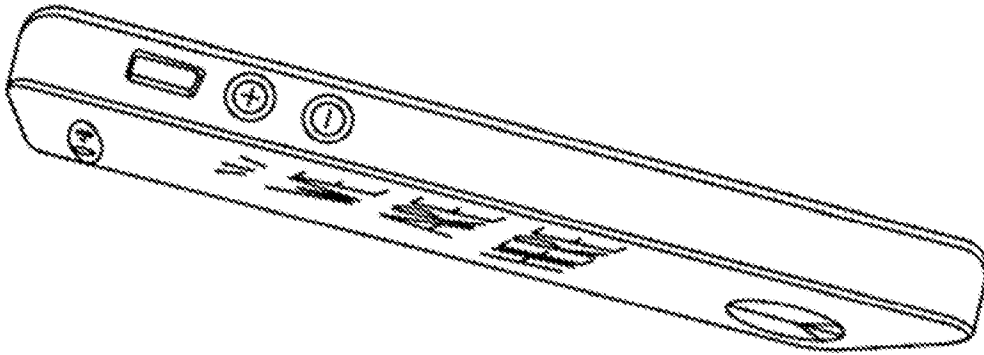


FIG. 19C

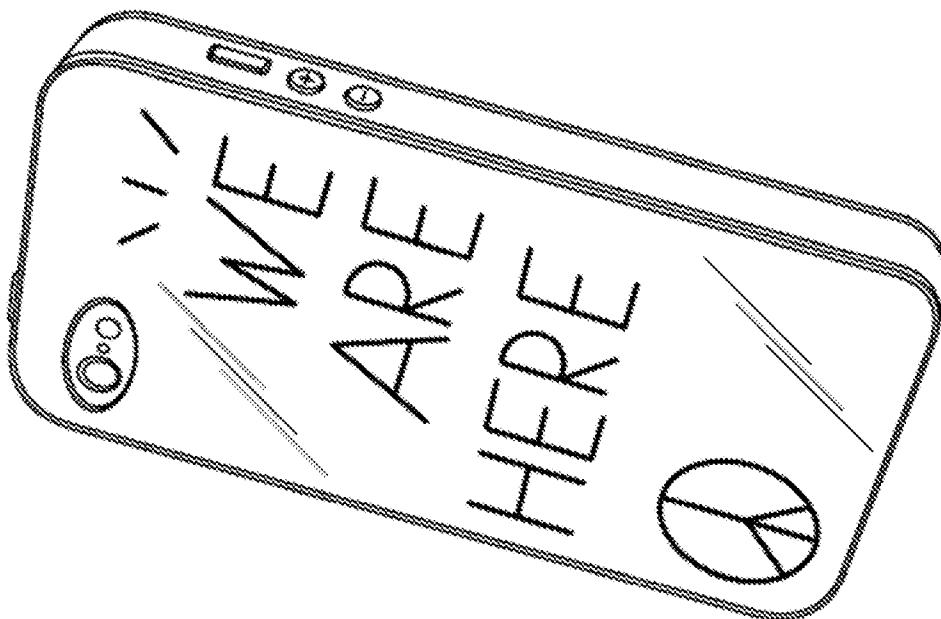


FIG. 19B

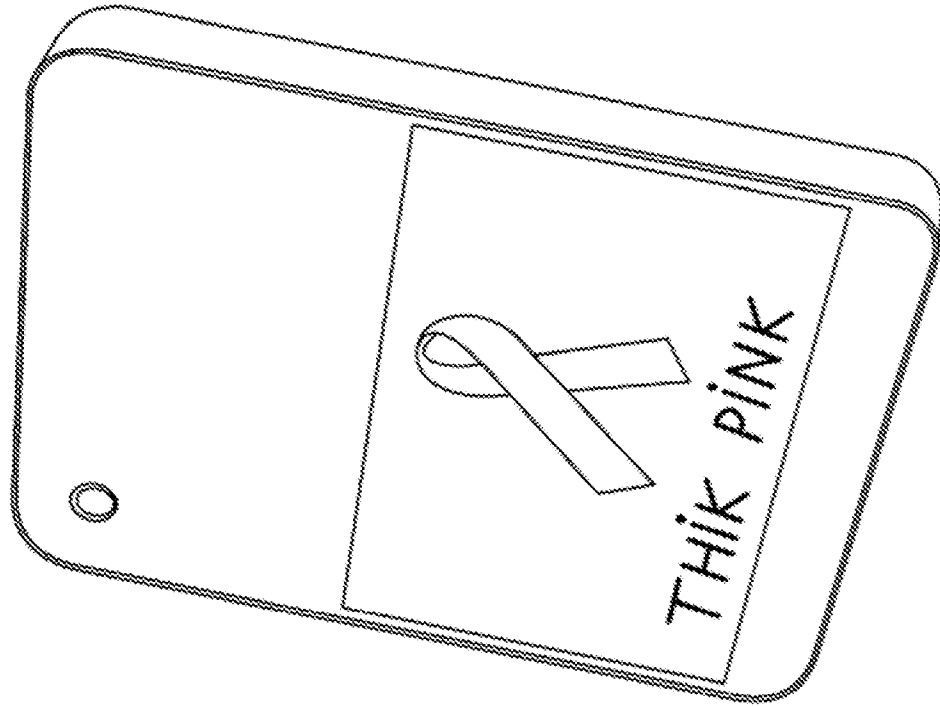


FIG. 19E

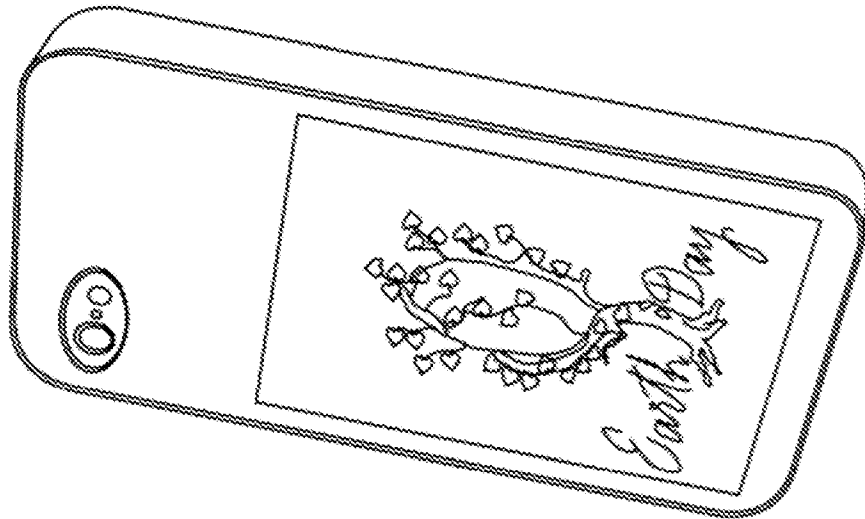


FIG. 19D

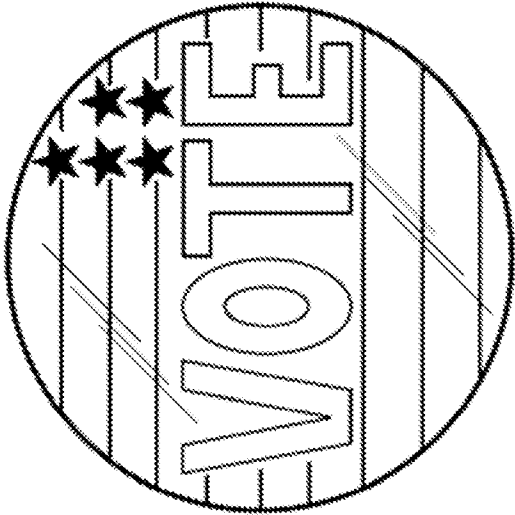


FIG. 19G



FIG. 19F

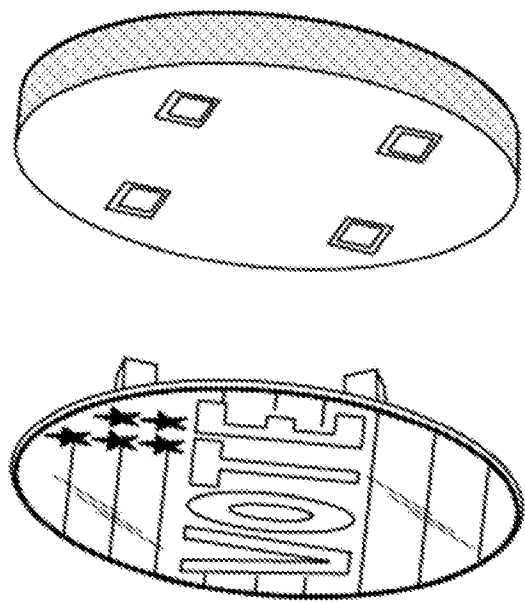


FIG. 19H

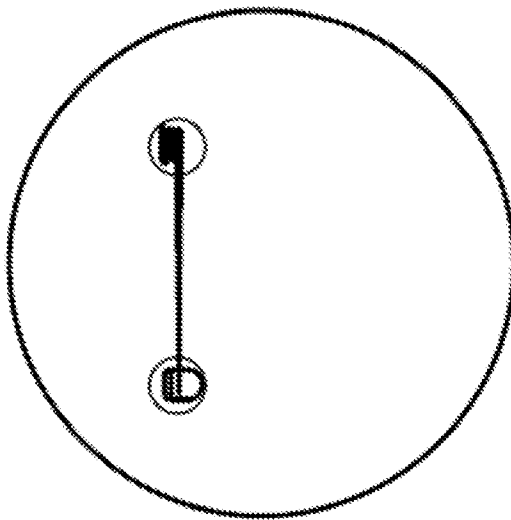


FIG. 19J

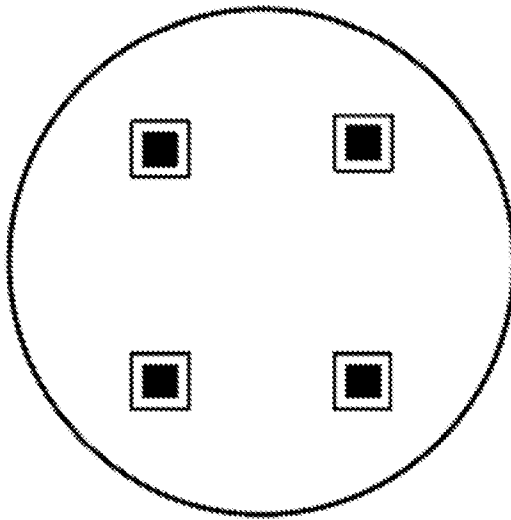


FIG. 19I

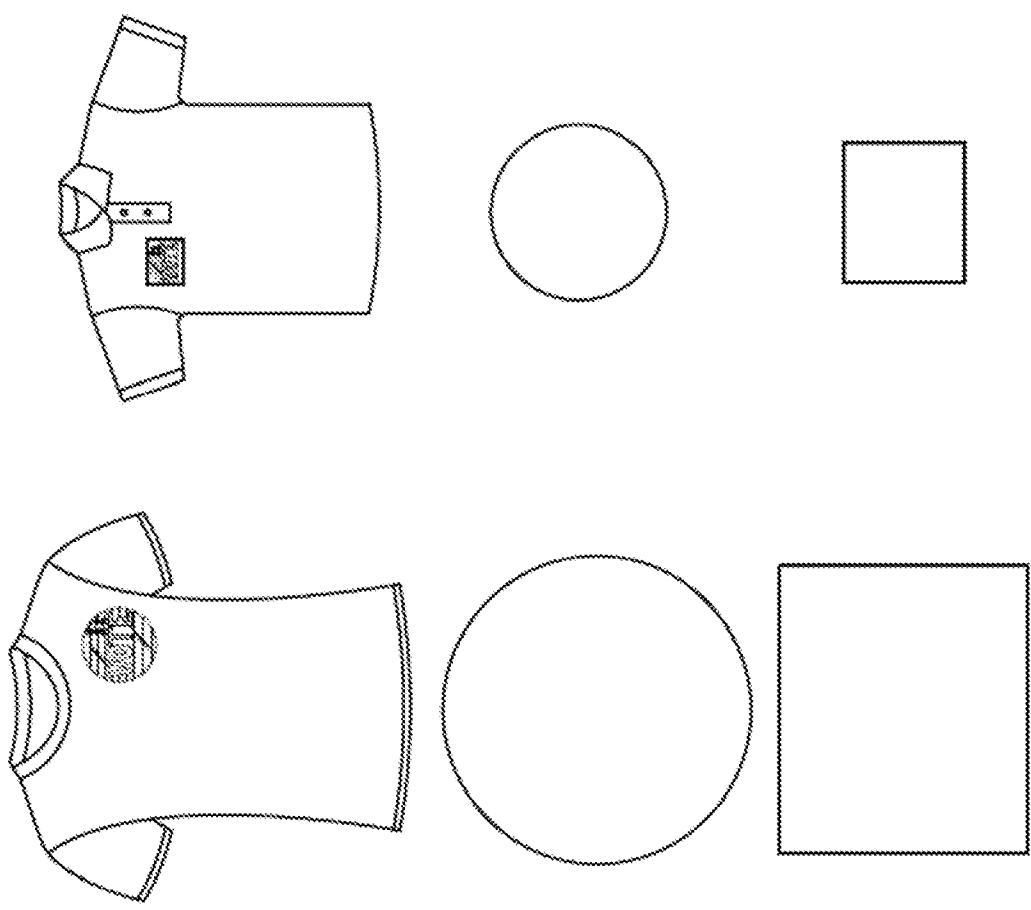
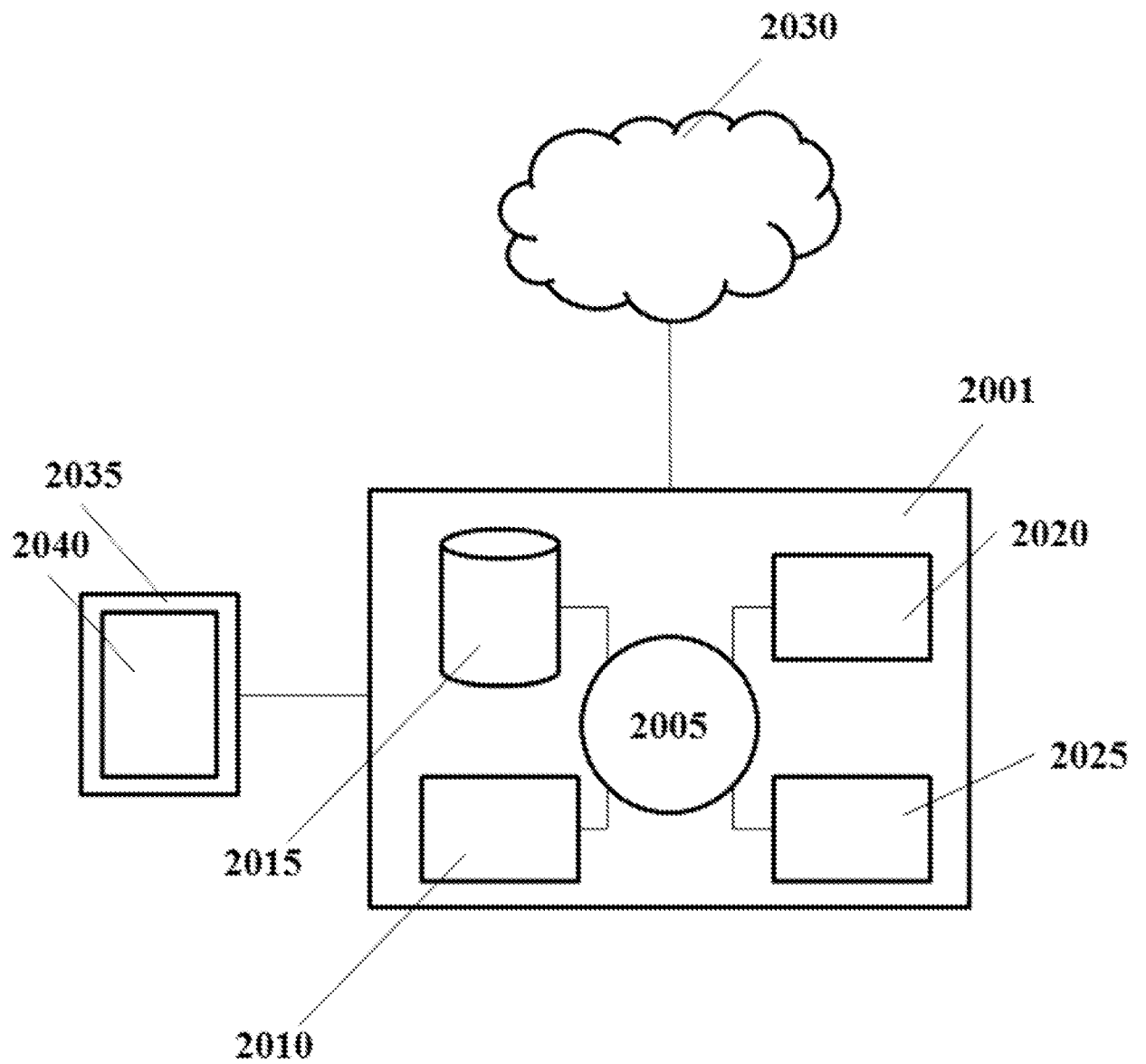
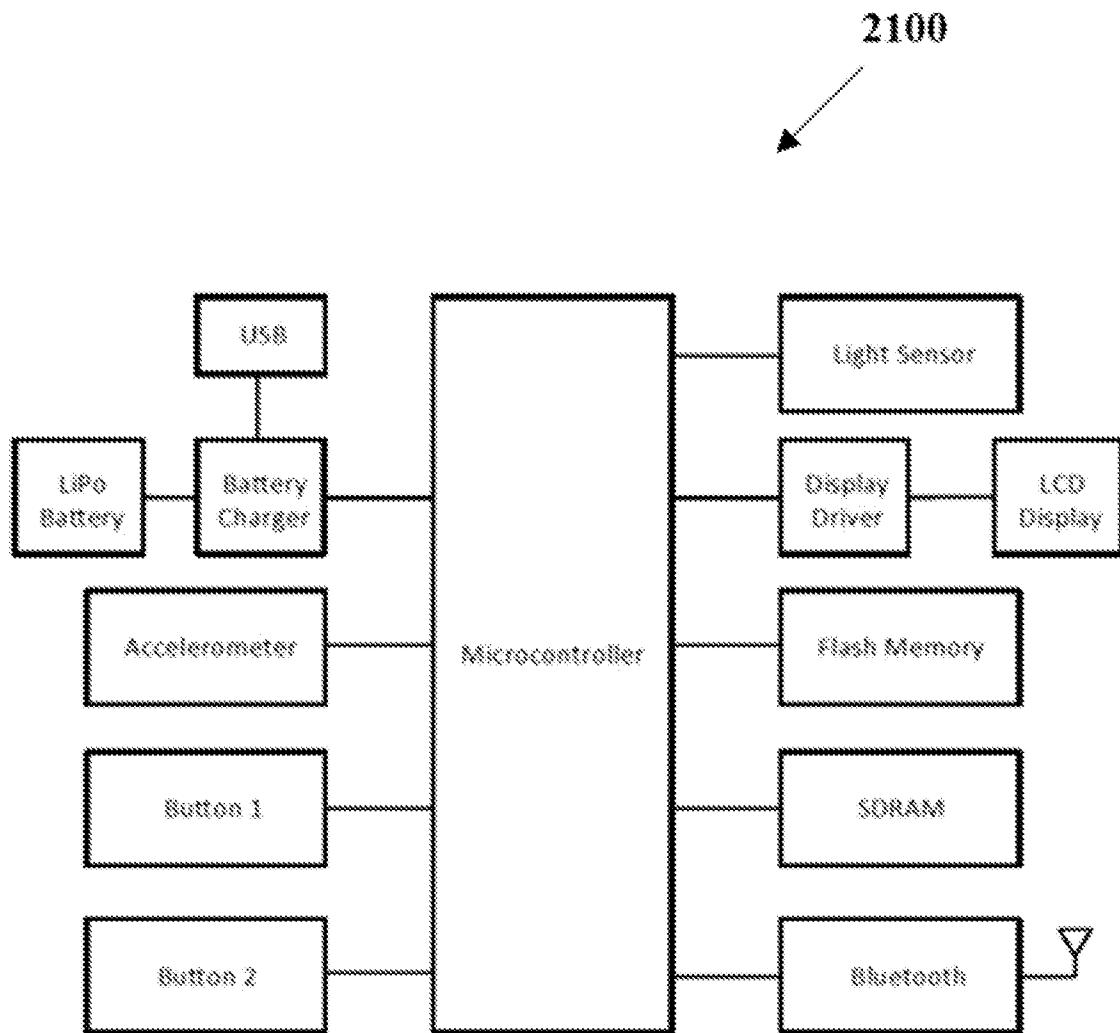


FIG. 19K

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*Fig. 20*

*Fig. 21*

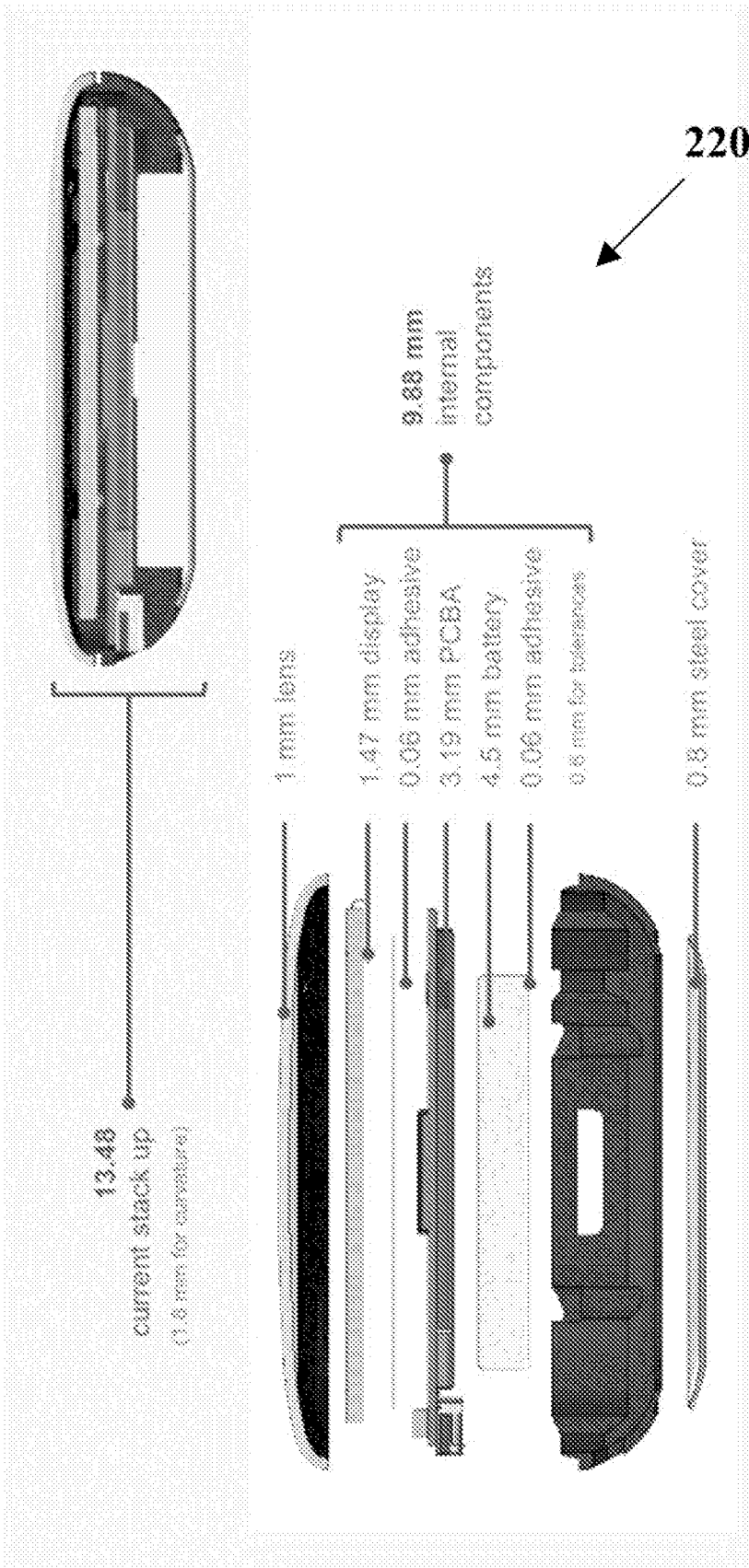
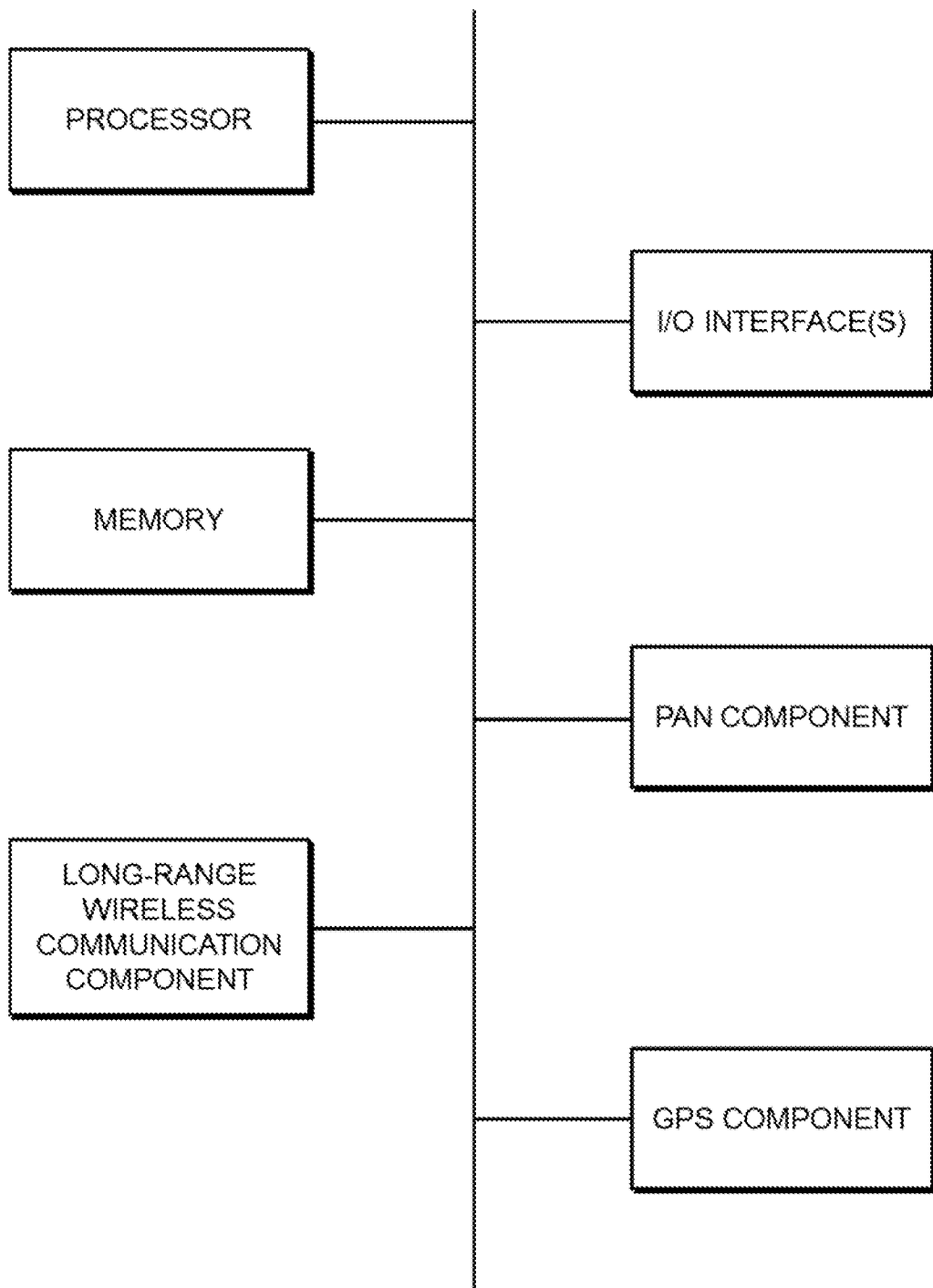


FIG. 22

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**FIG. 23**

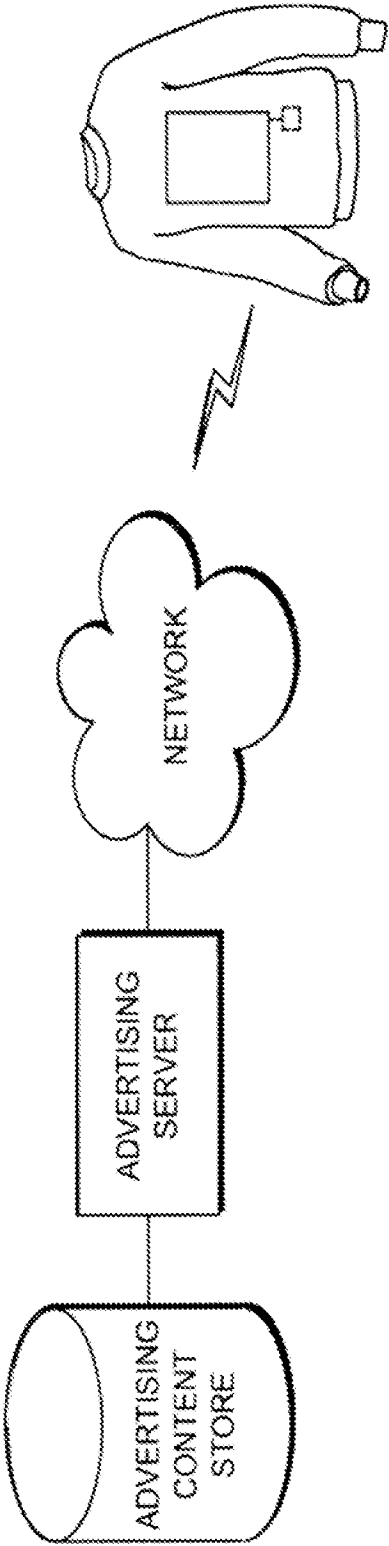


FIG. 24

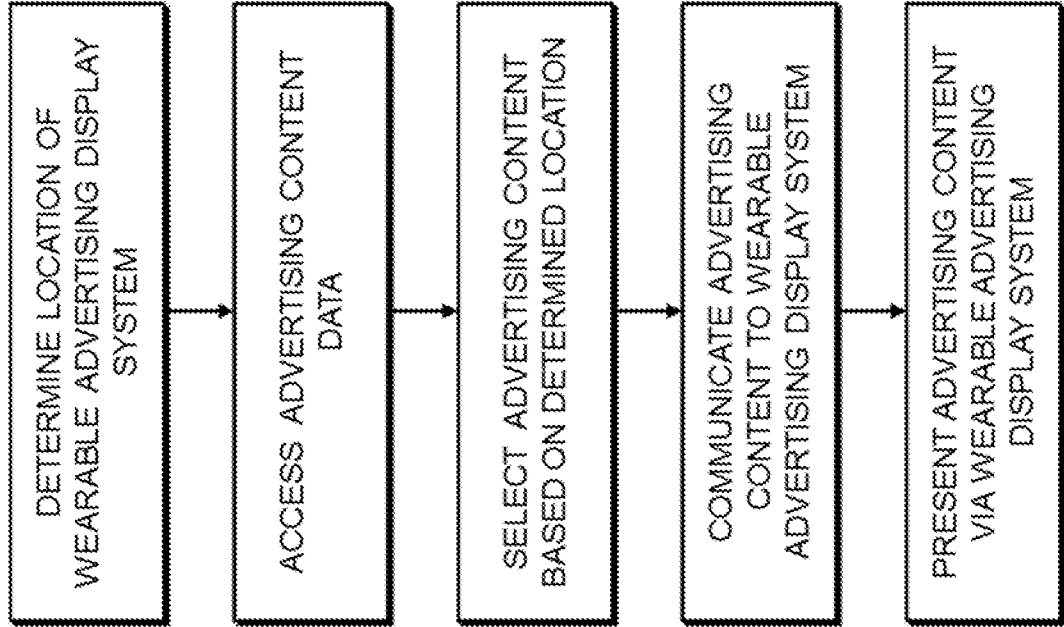


FIG. 25

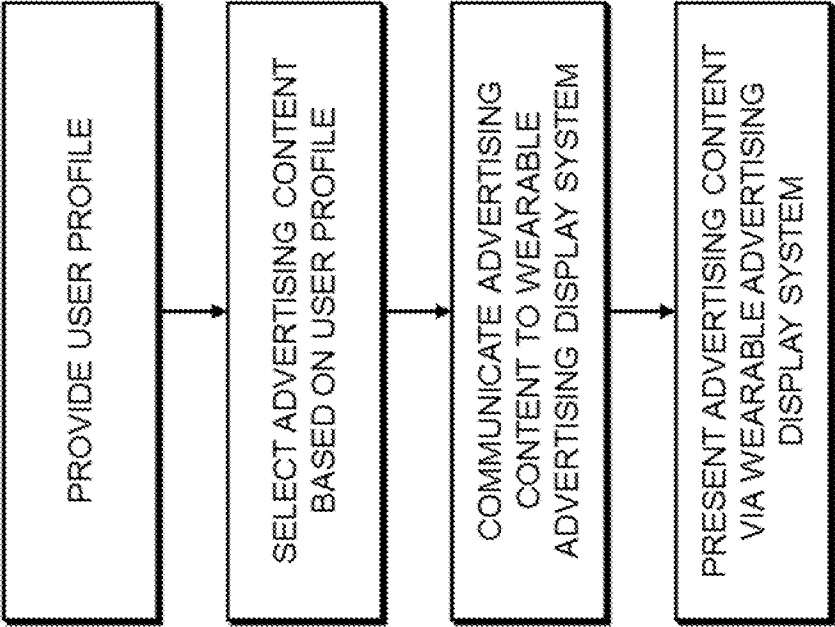


FIG. 26

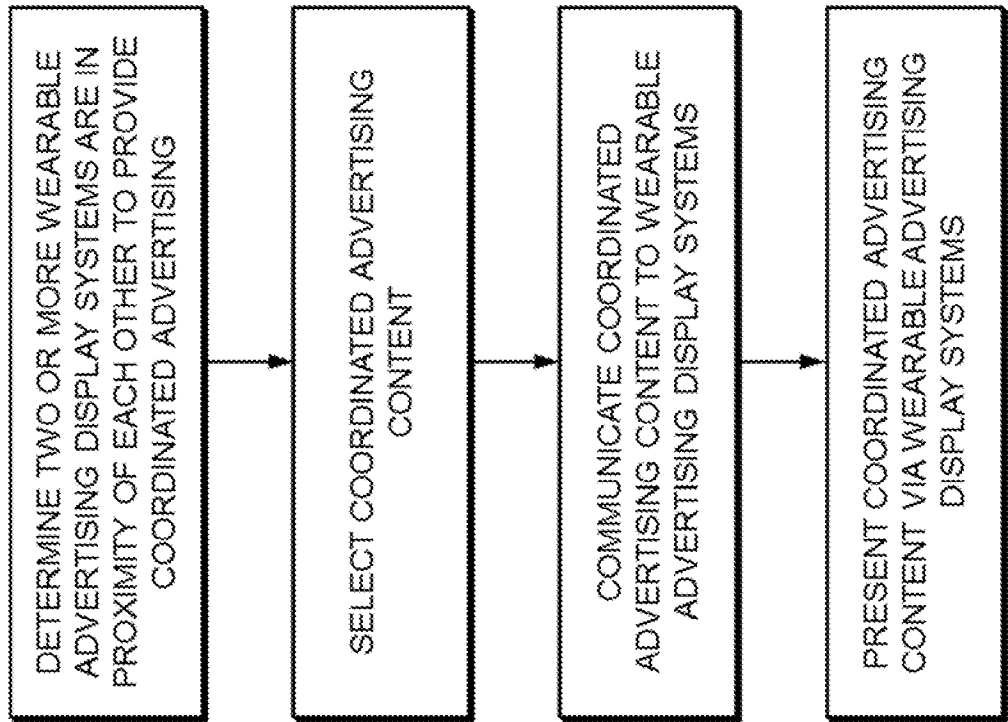


FIG. 28

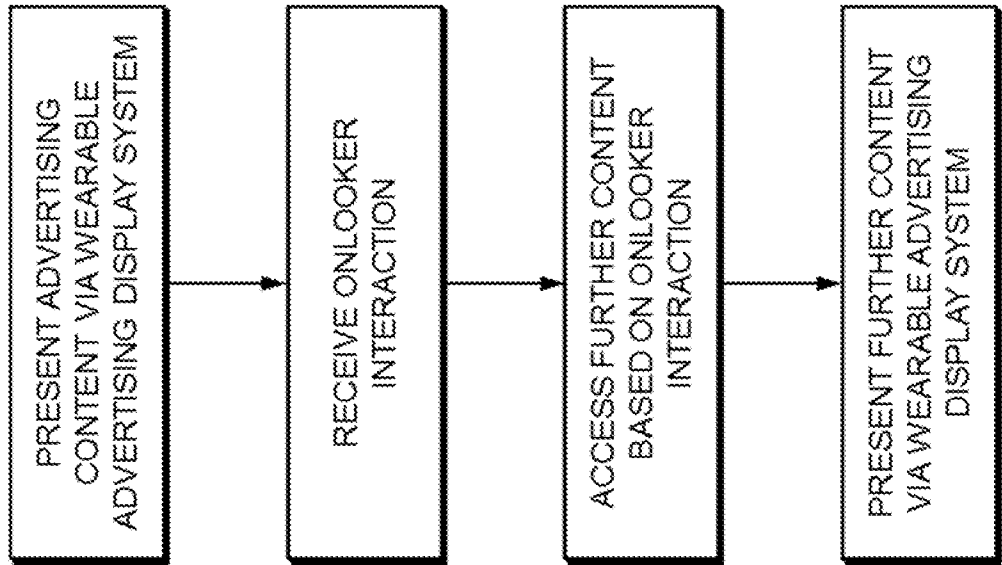


FIG. 27

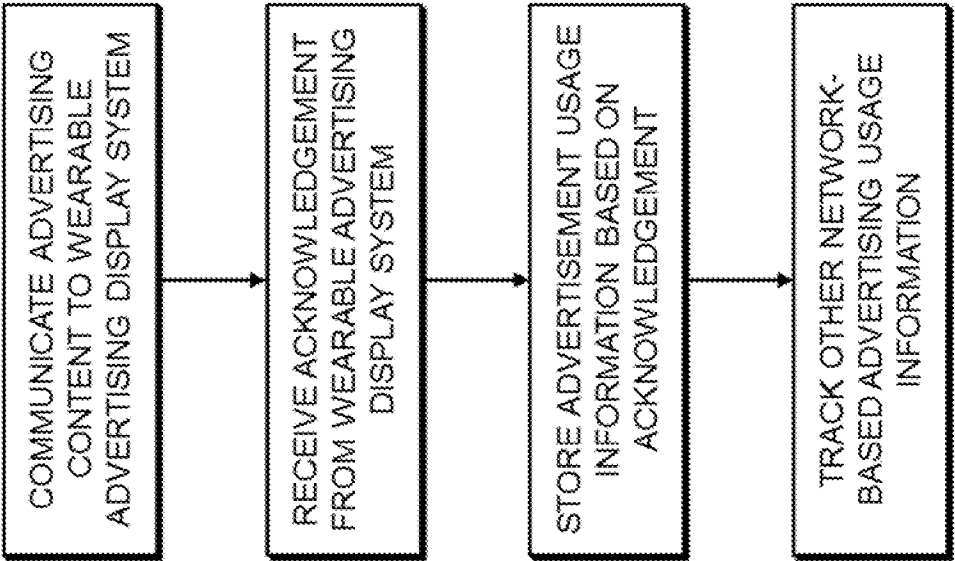


FIG. 30

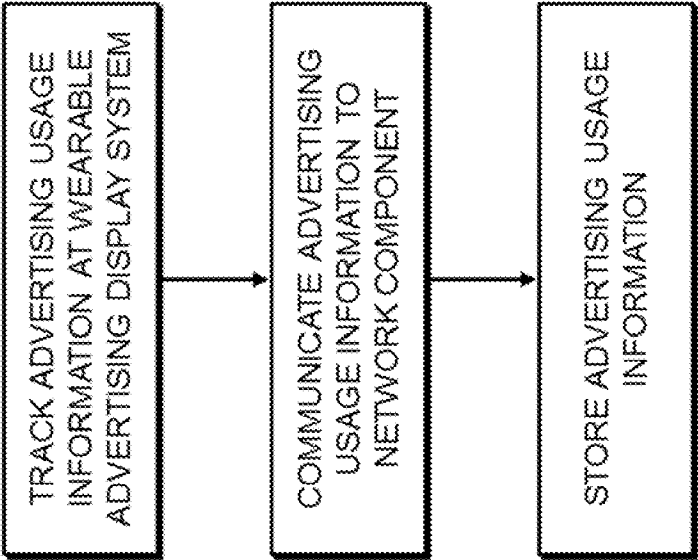


FIG. 29

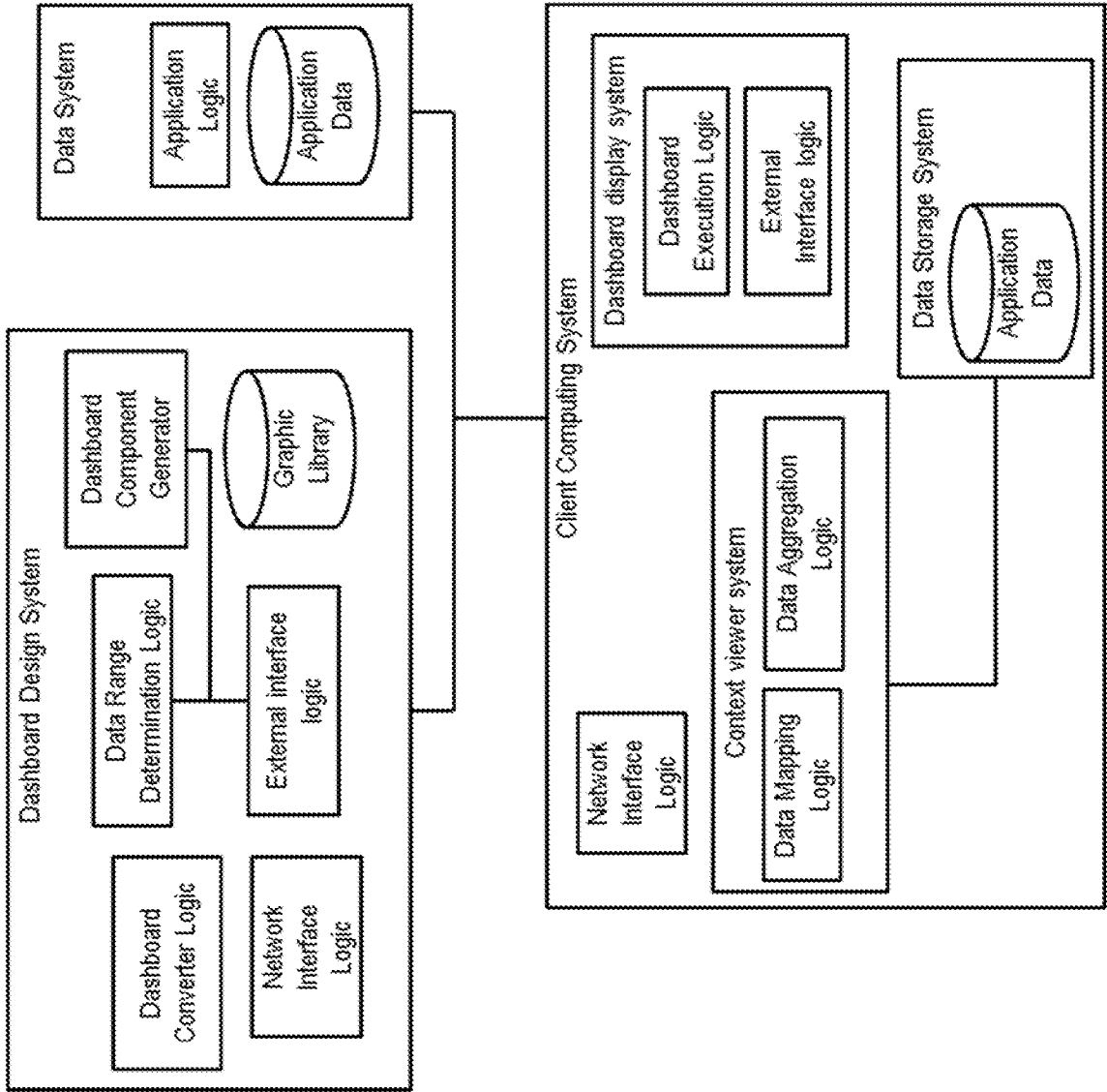


FIG. 31

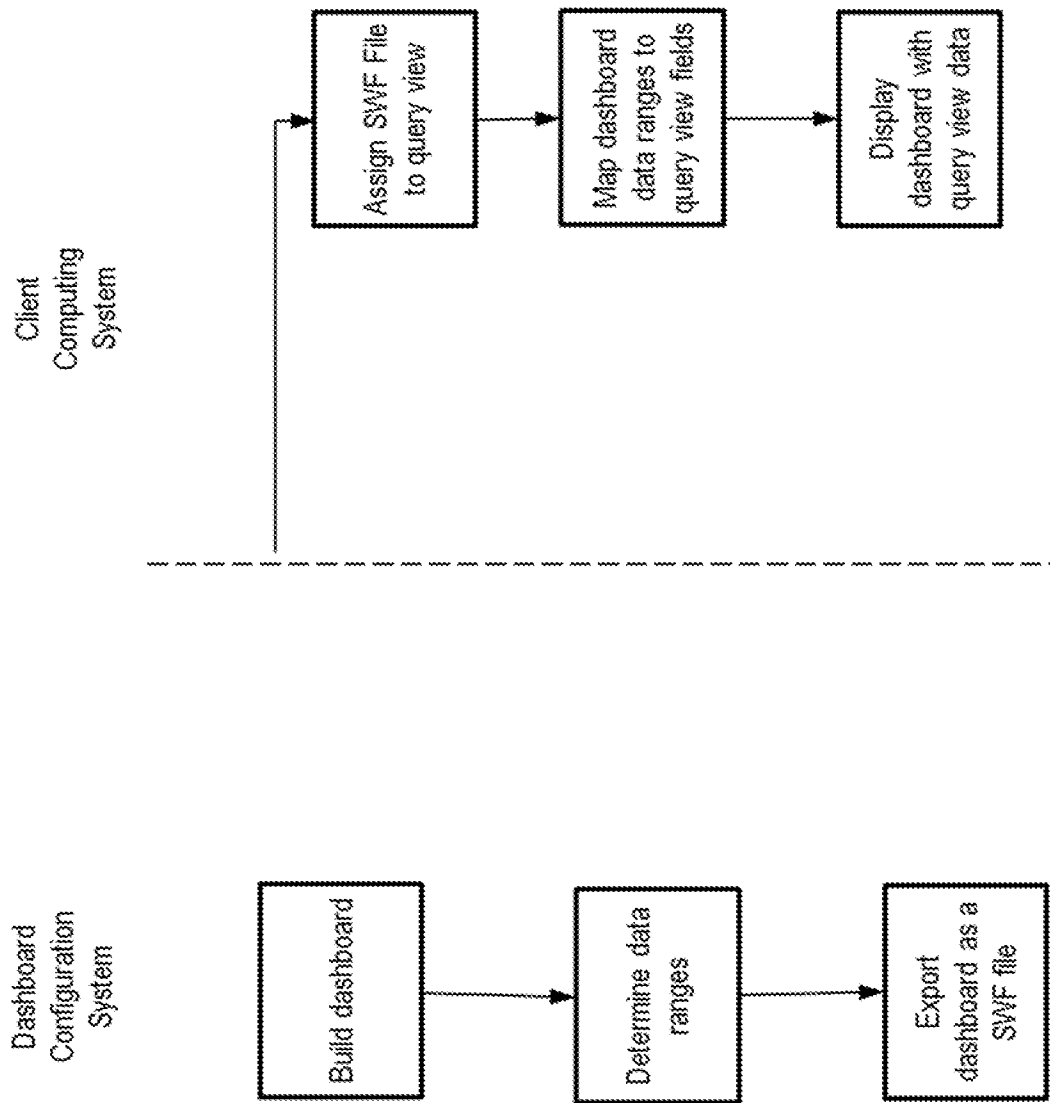
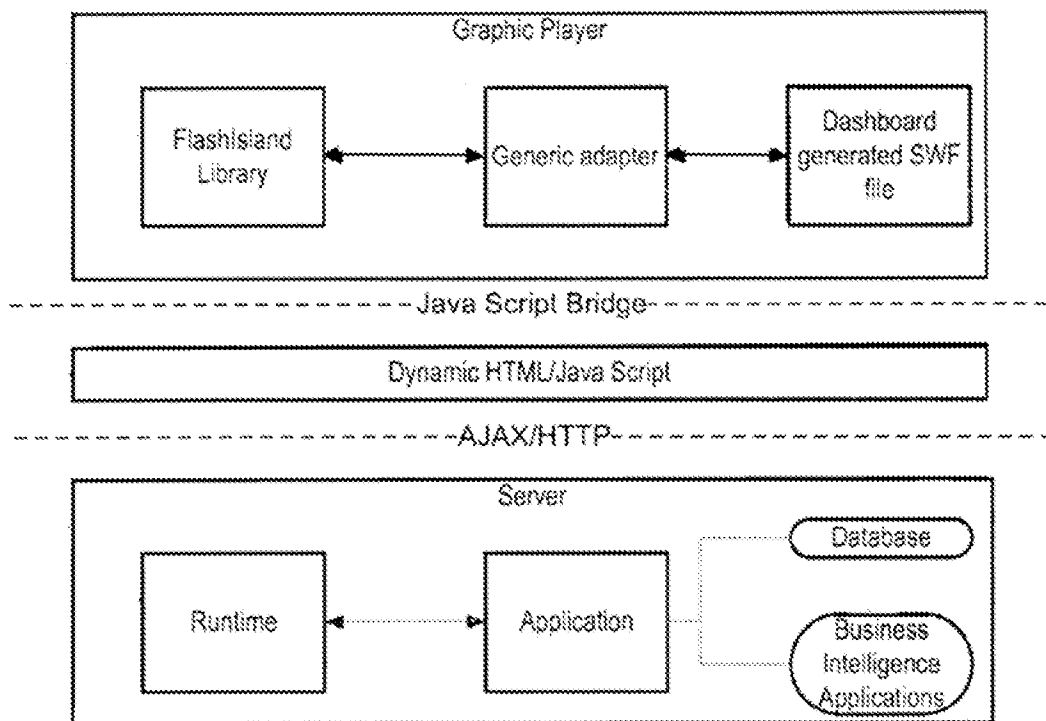


FIG. 32A

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**FIG. 32B**

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FIG. 33

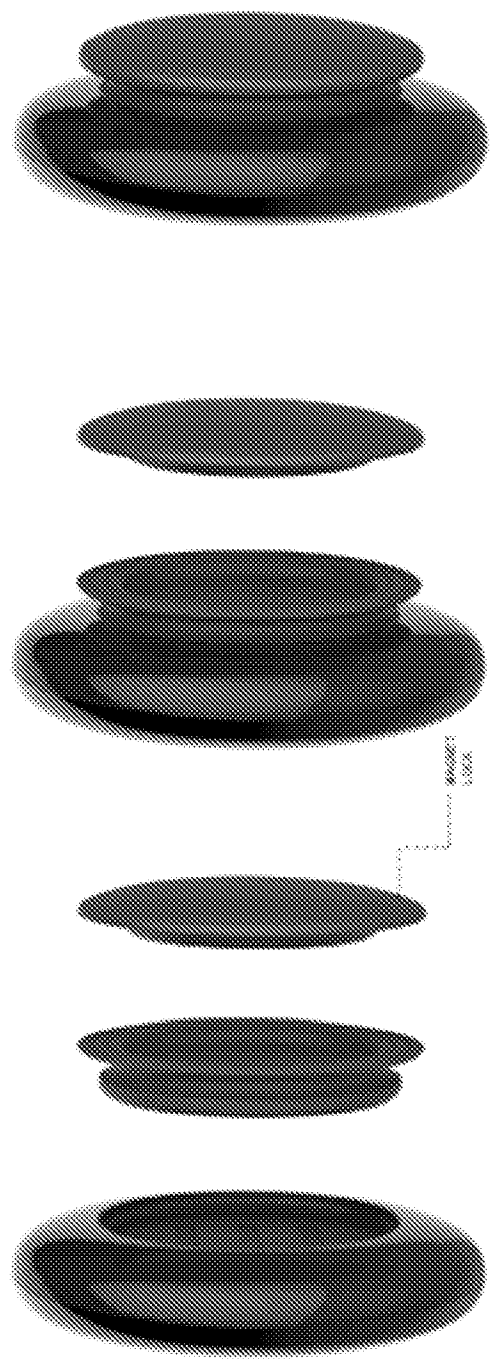


FIG. 34



FIG. 35

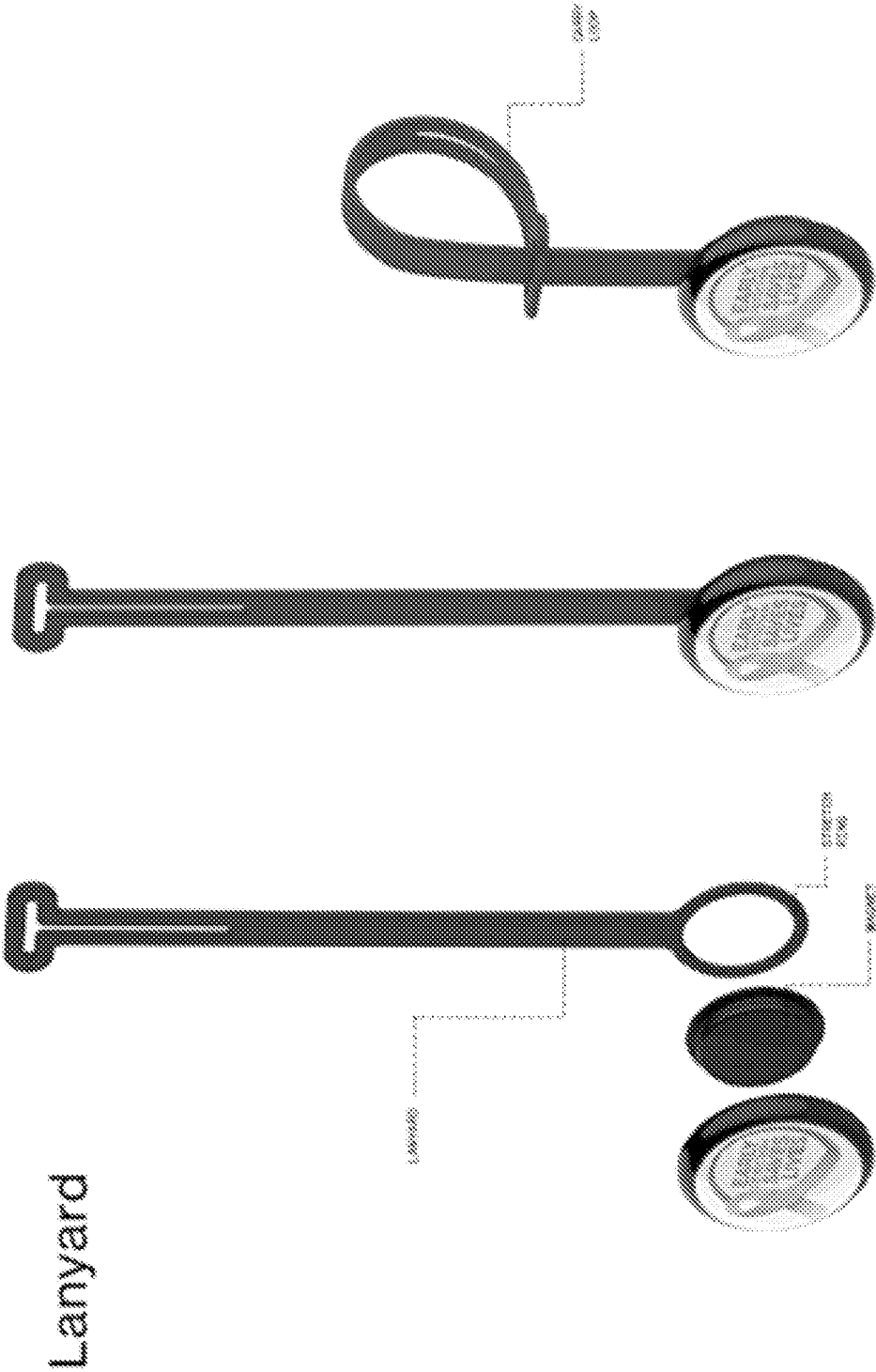




FIG. 37

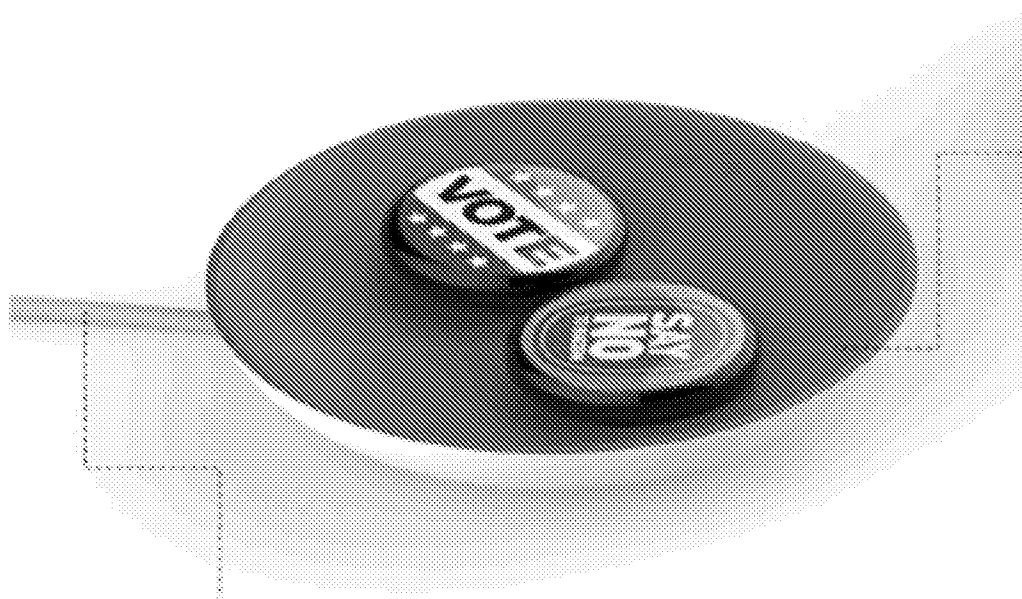
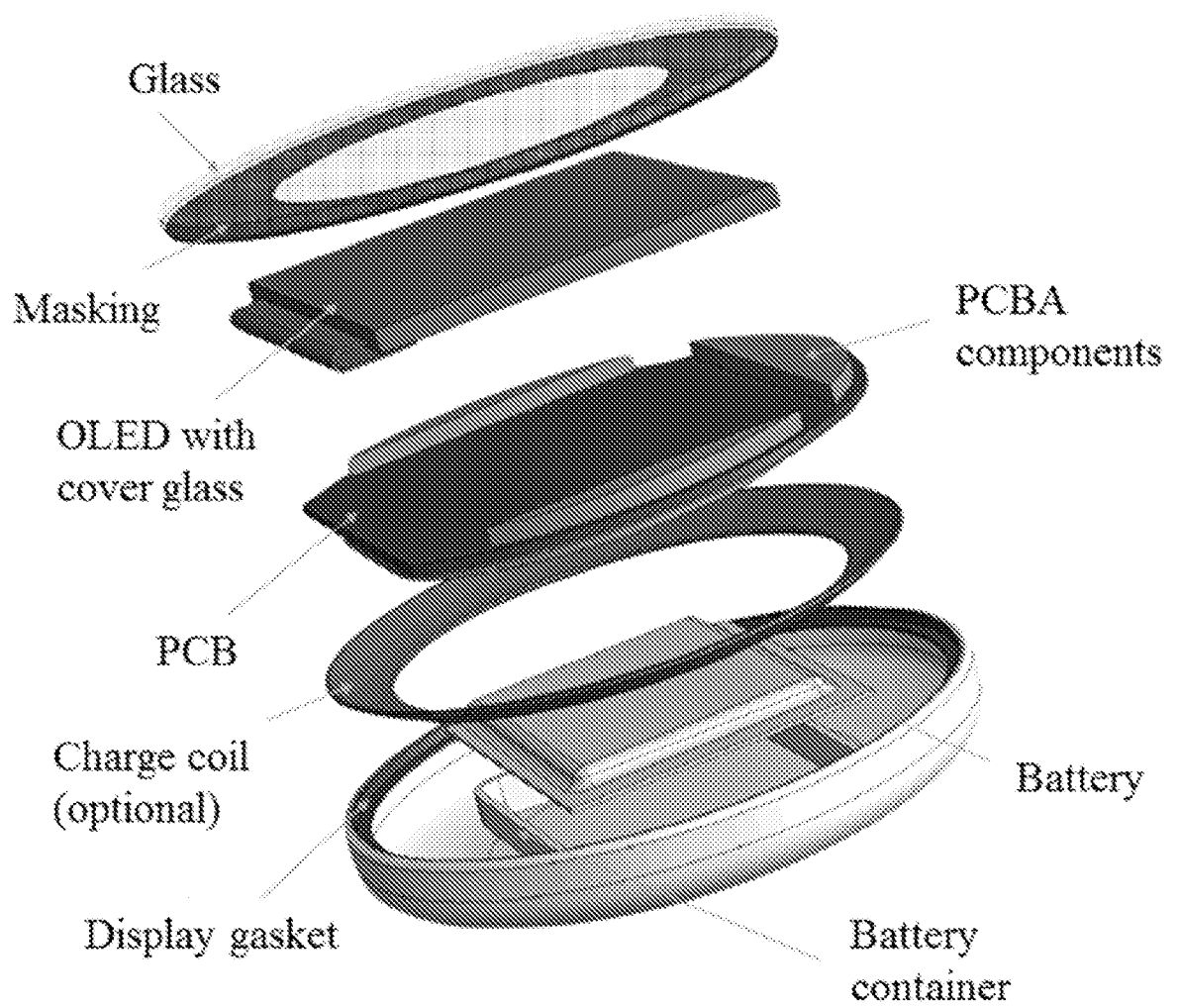


FIG. 38

**FIG. 39A**

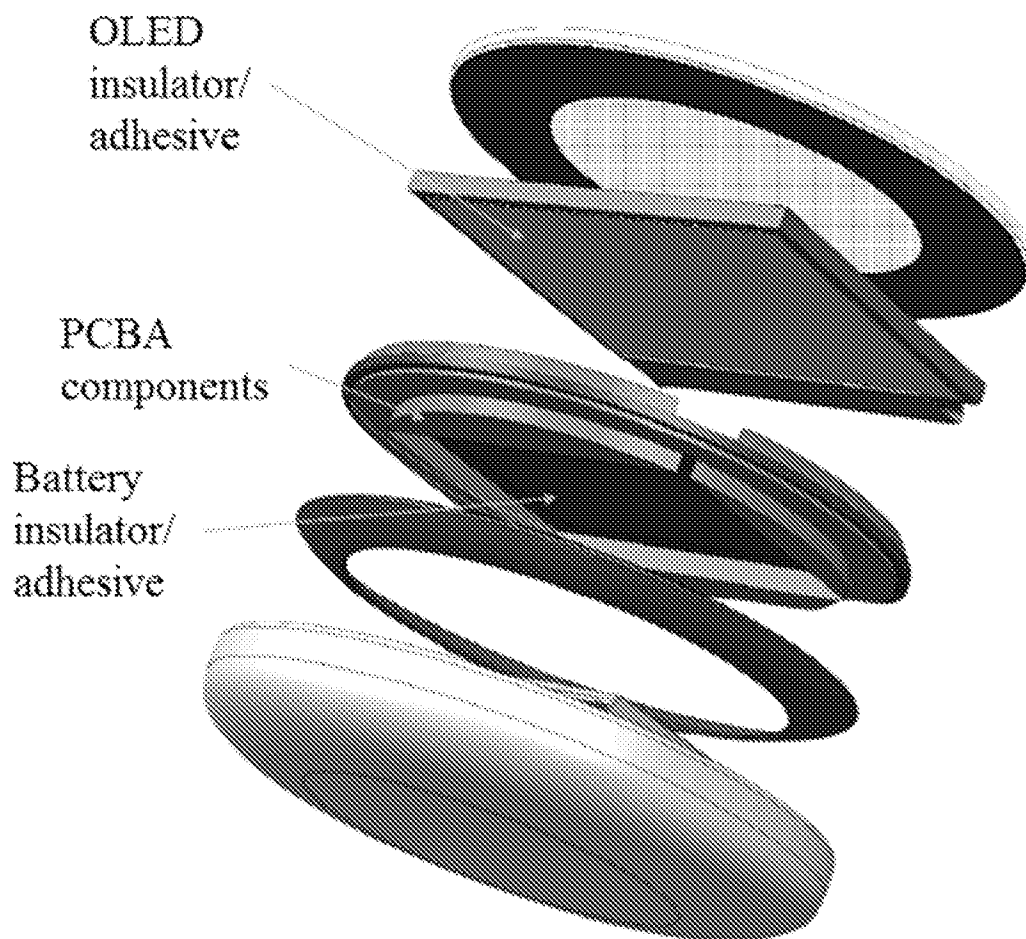


FIG. 39B

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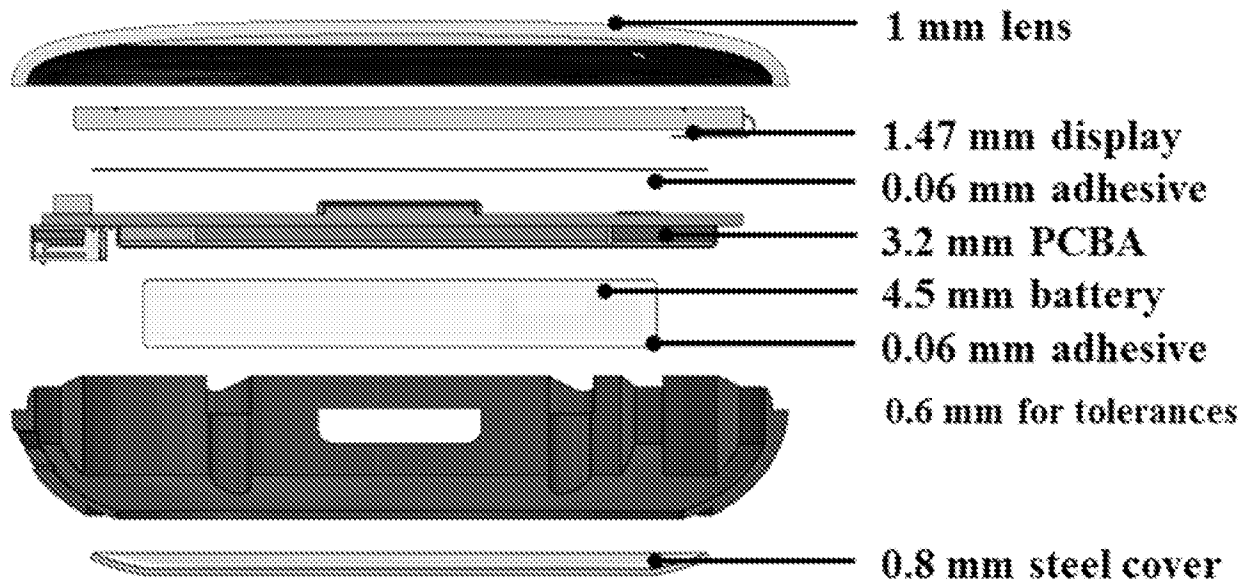


FIG. 40A

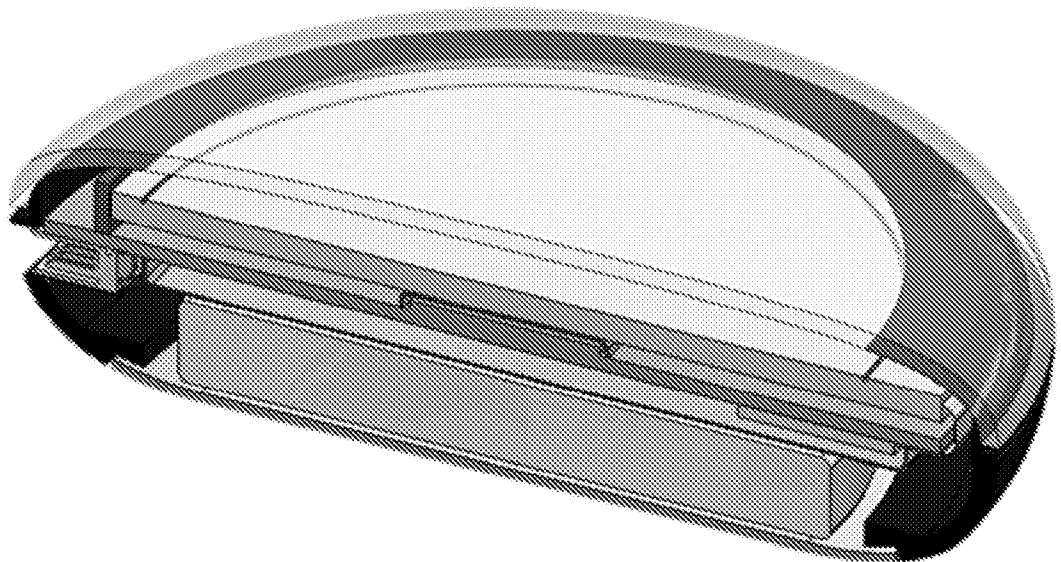


FIG. 40B

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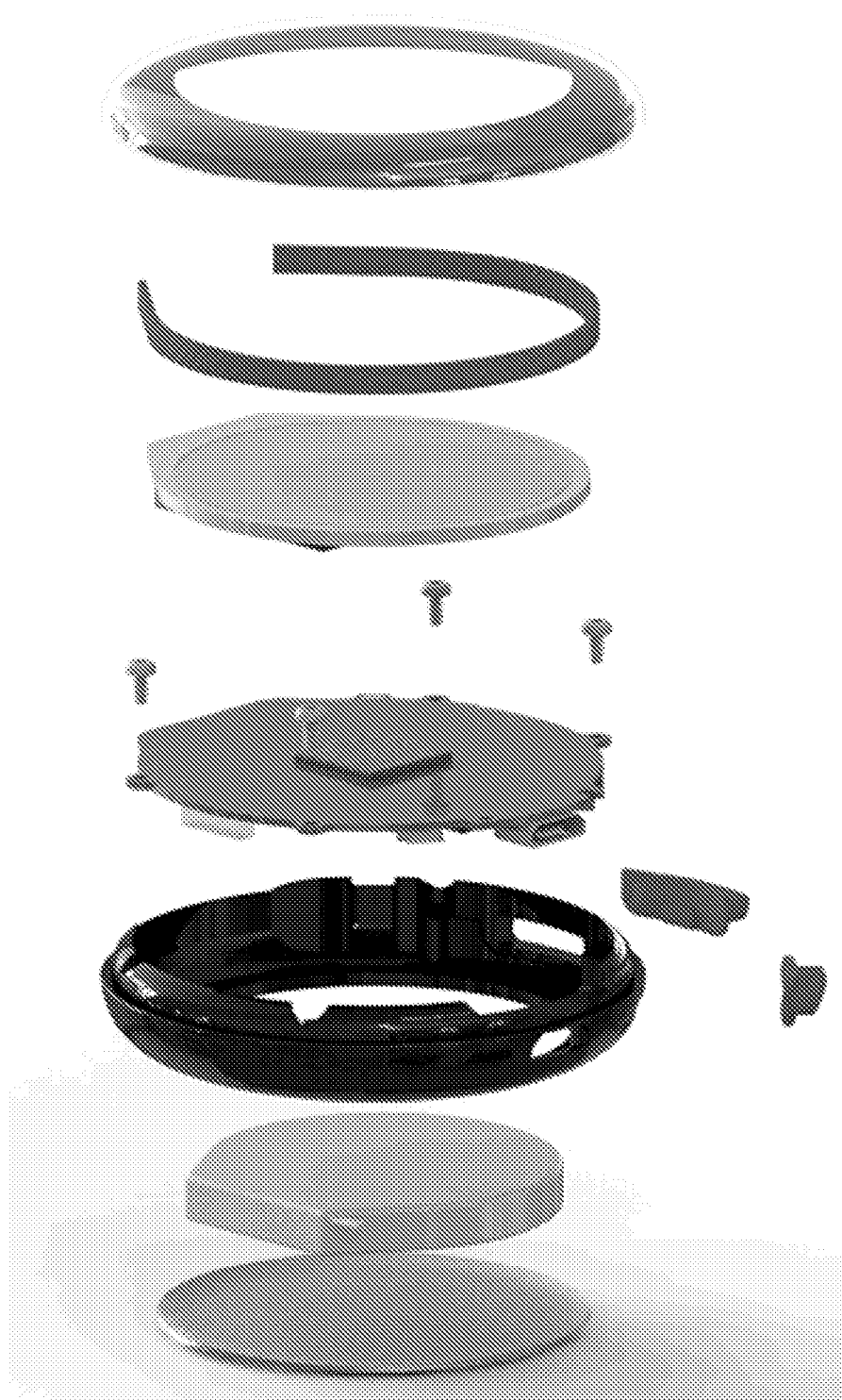


FIG. 41A

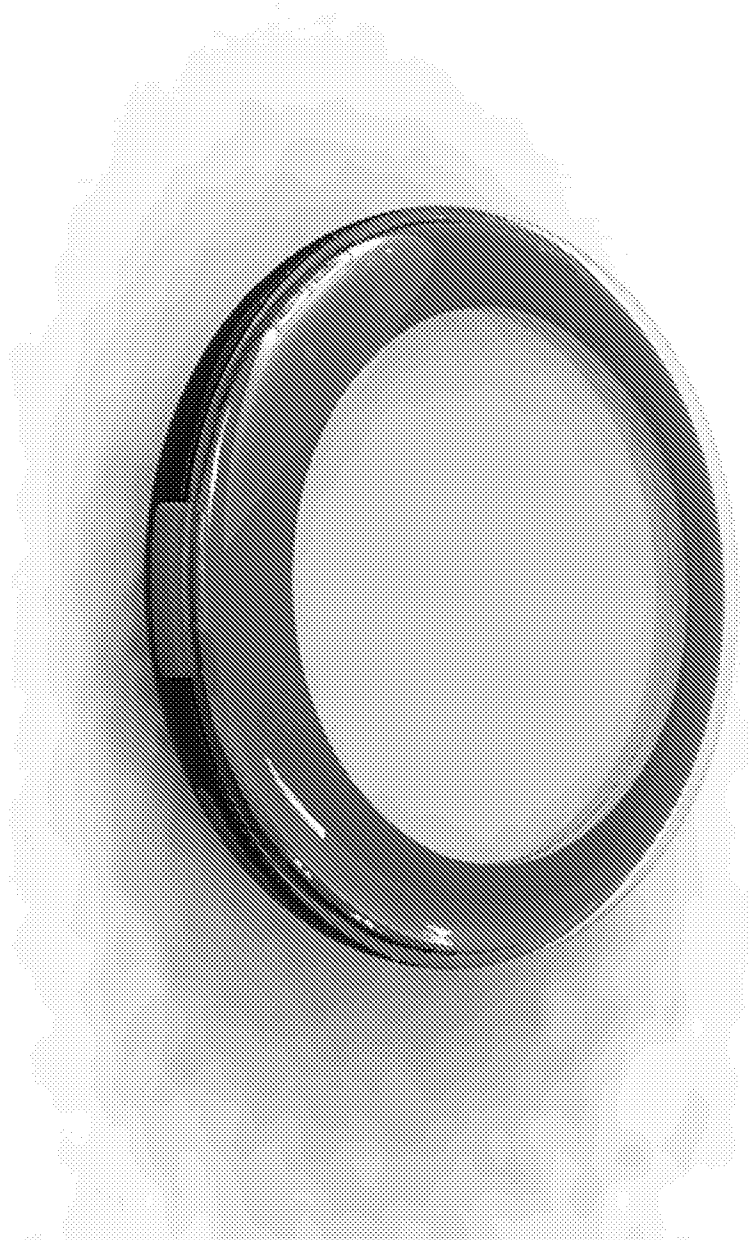
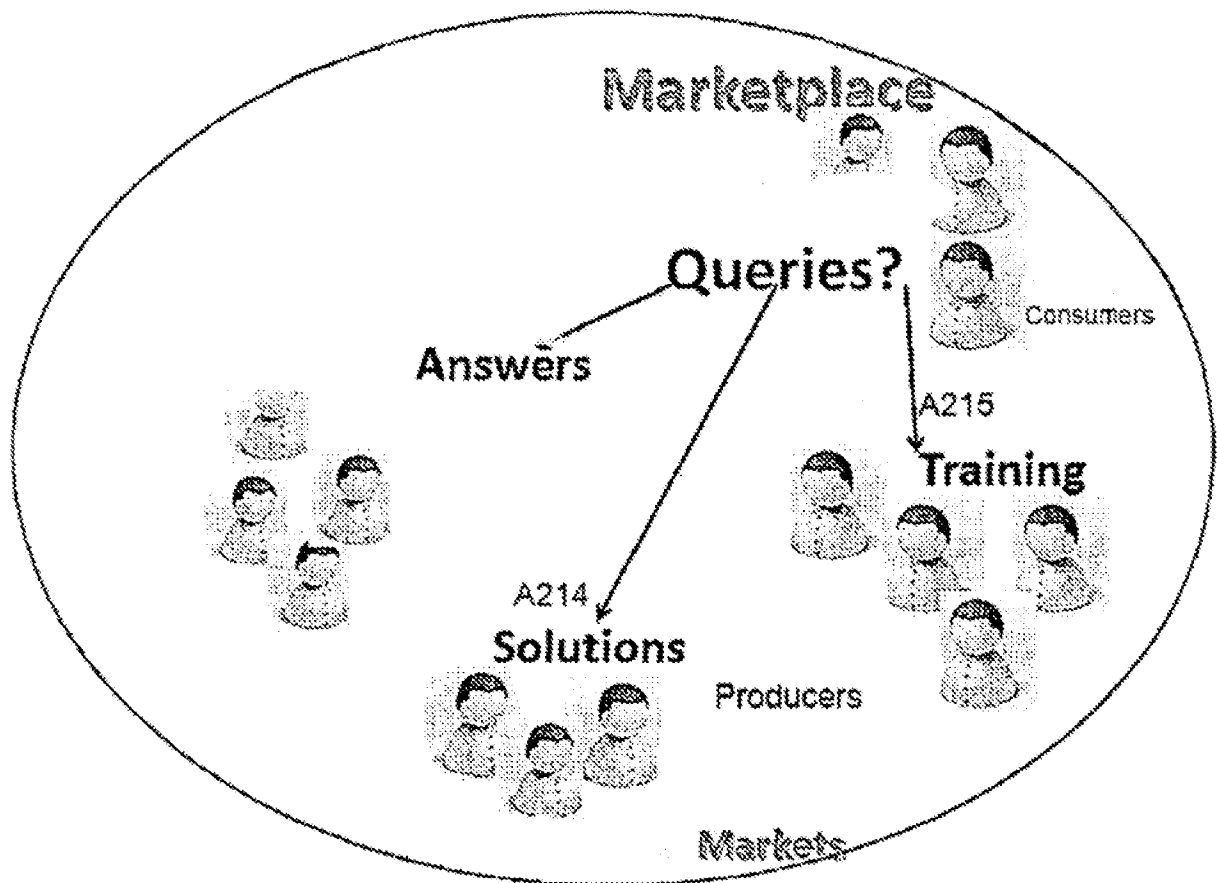


FIG. 41B



FIG. 42

**FIG. 43**

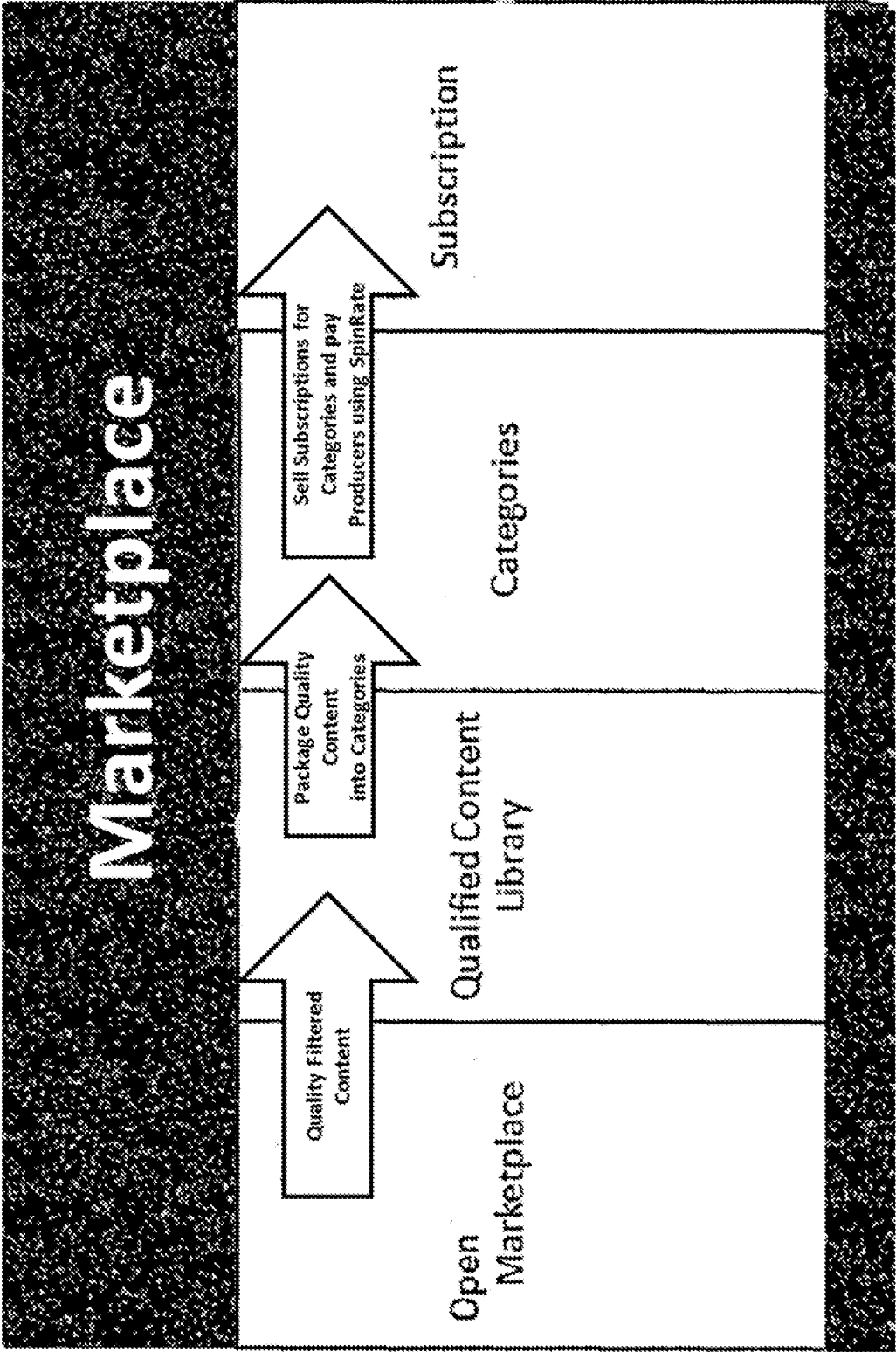


FIG. 44

SYSTEM WEB-PORTALS ARCHITECTURE

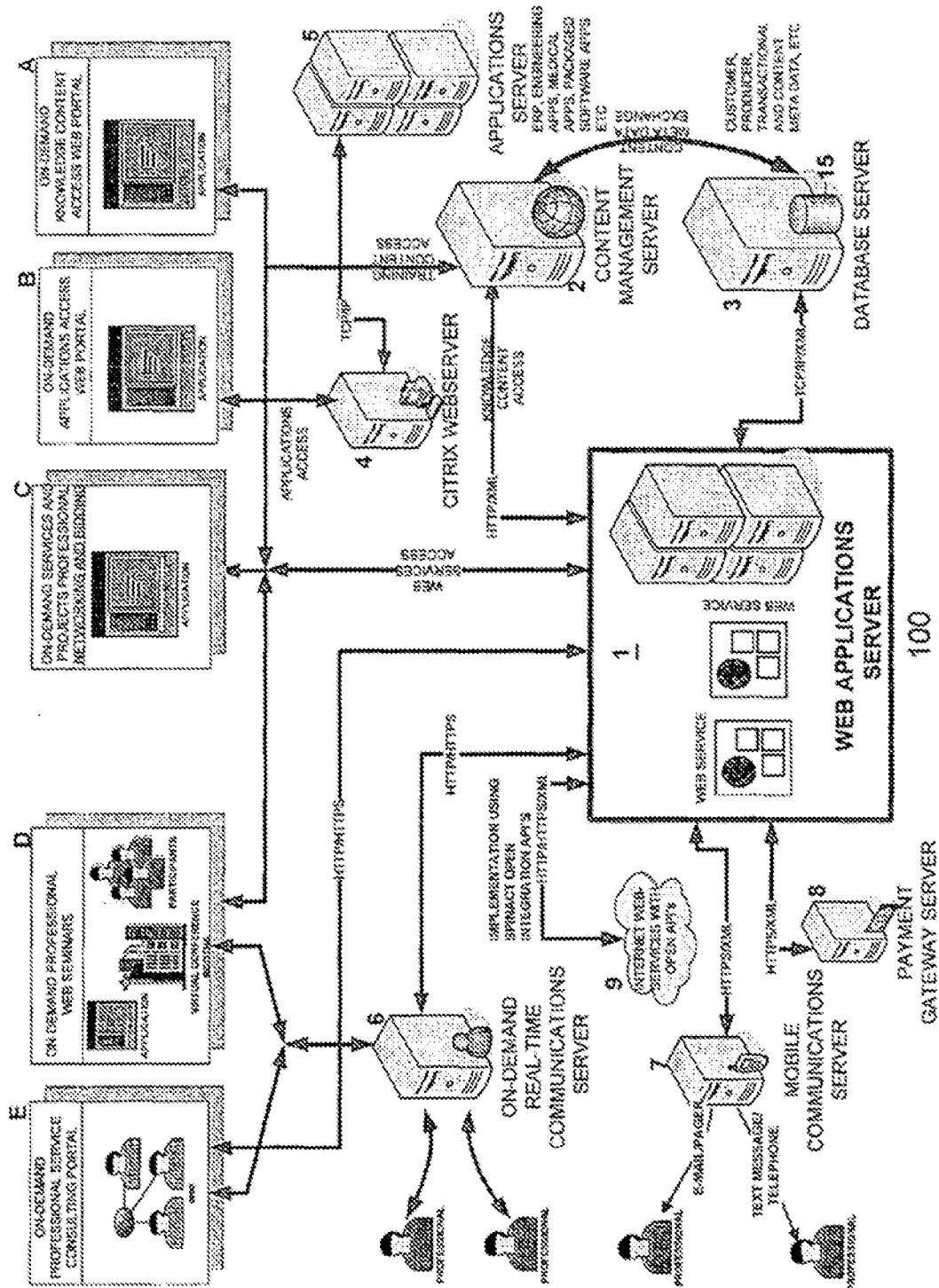


FIG. 45

Functional Components

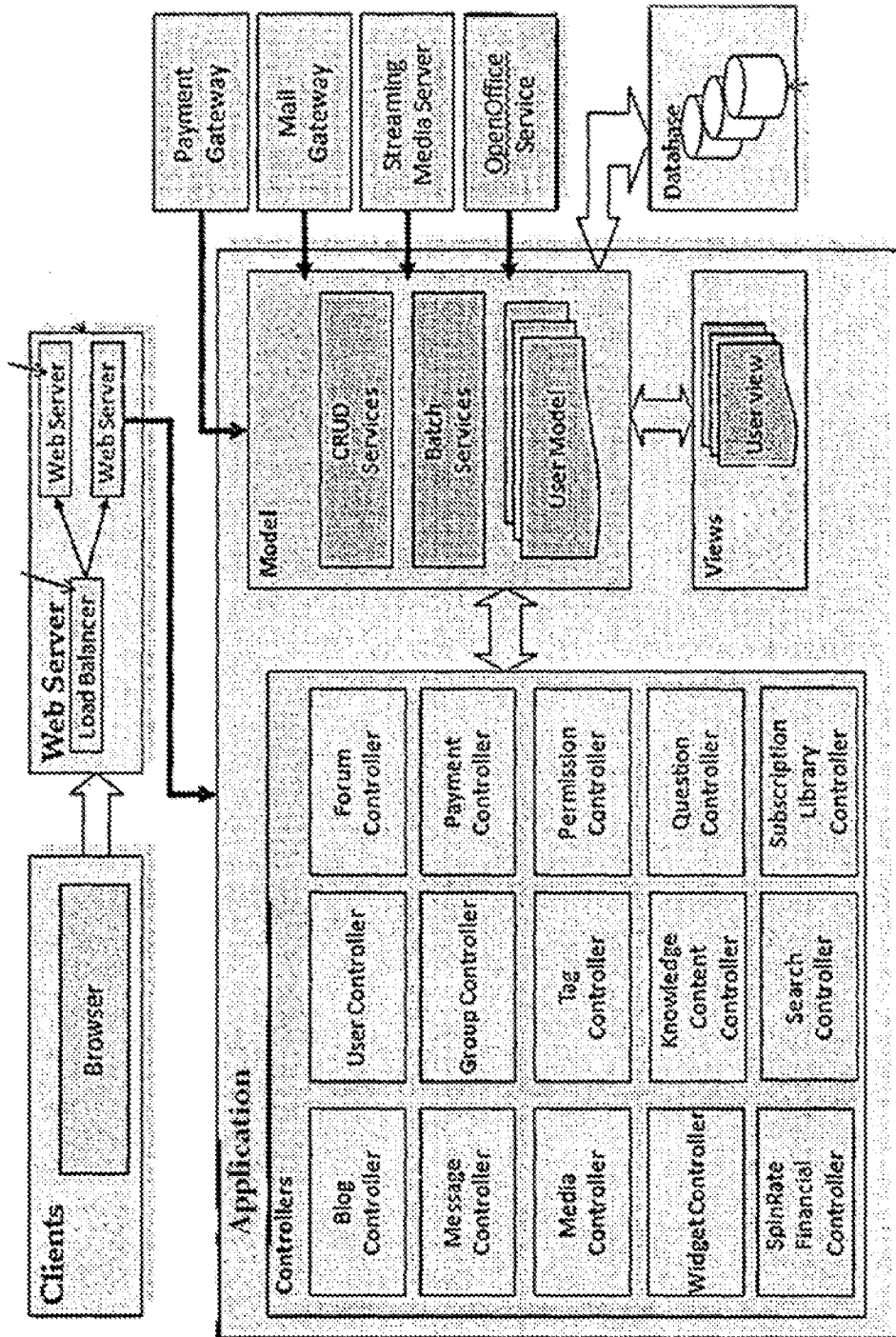
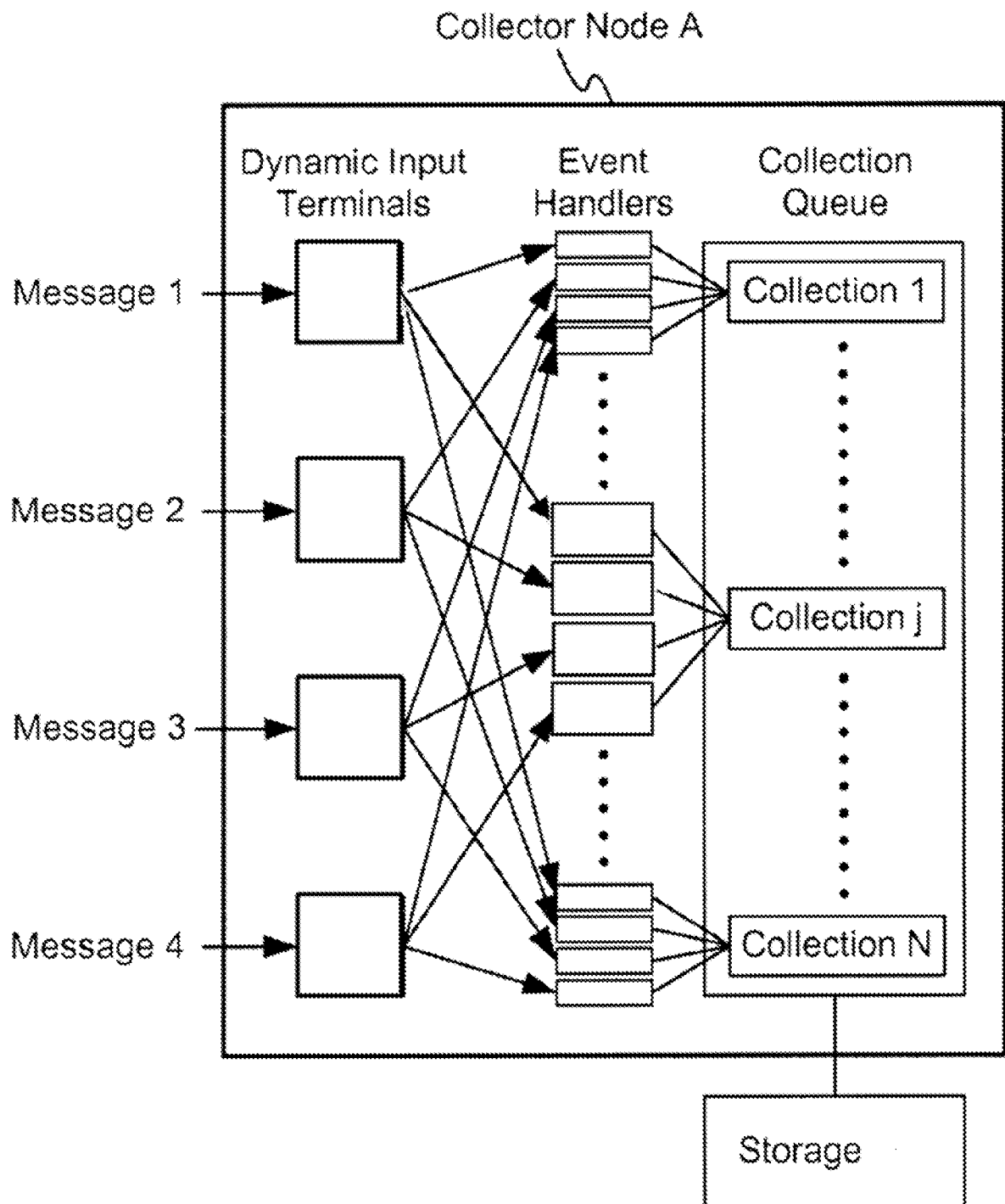
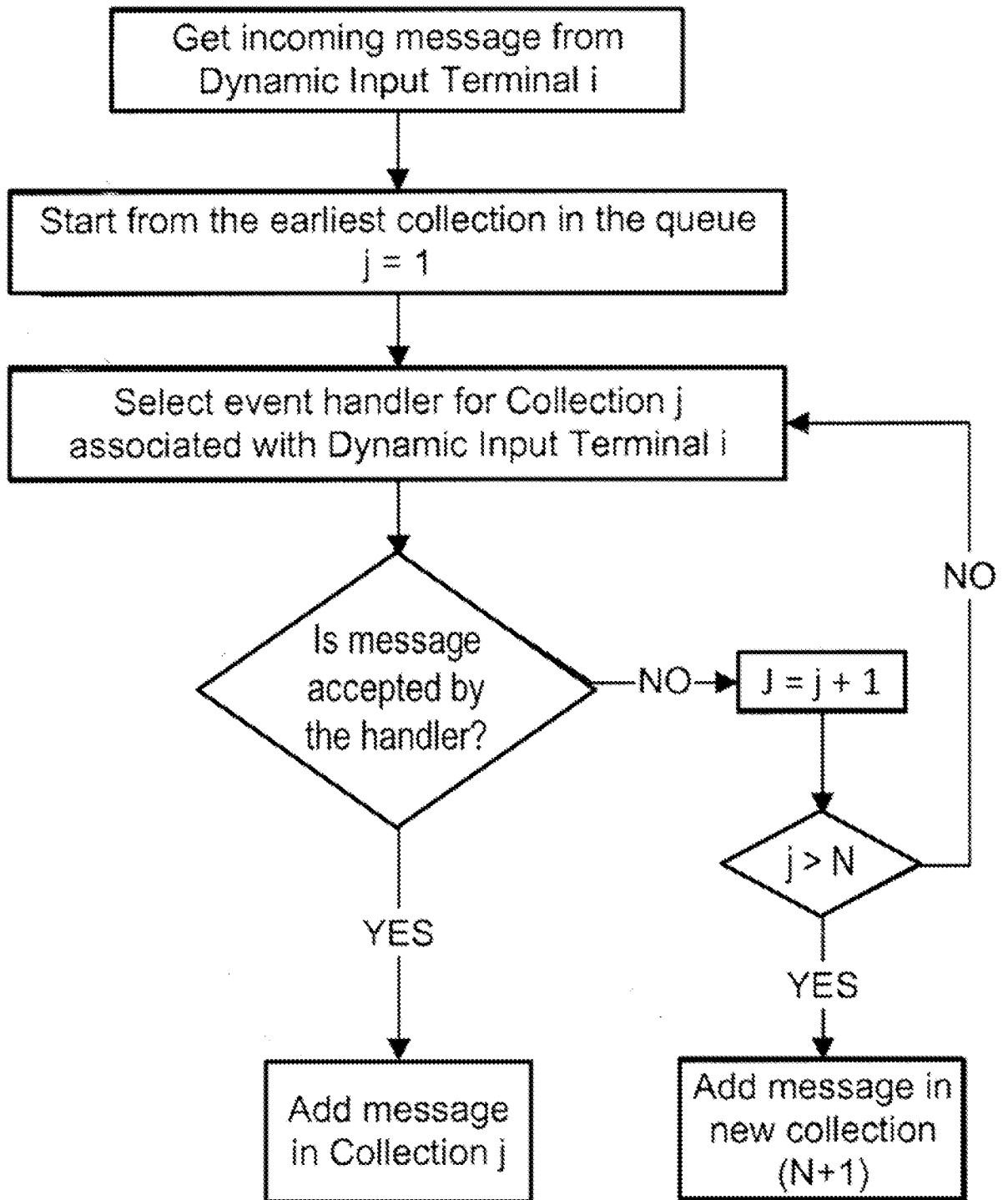


FIG. 46

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**FIG. 47**

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**FIG. 48**

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2015/045308

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G06Q 30/00 (2015.01)

CPC - G06Q 30/02 (2015.04)

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(8) - G06Q 30/00 (2015.01)

USPC - see extra sheet

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

CPC - G06Q 30/02, 30/0217, 30/0236, 30/0239, 30/0277 (2015.04) (keyword delimited)

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

Orbit, Google Patents, Google Scholar, Google.

Search terms used: remote, distant, faraway, wireless, transmit, communicate, talk, sign, display, token, post, indicator, screen, monitor, vdt, crt, flexible, elastic, stretch, resilient, network, server, client, user, computer, pda, cellphone, mobile, advertisement, content, graphic

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 8,626,586 B1 (BIERE et al.) 07 January 2014 (07.01.2014) entire document	1-54
Y	US 2005/0071418 A1 (KJELLBERG et al.) 31 March 2005 (31.03.2005) entire document	1-54
Y	US 2009/0310290 A1 (TENNET) 17 December 2009 (17.11.2009) entire document	2
Y	US 2010/0095573 A1 (LIFSHITZ) 22 April 2010 (22.04.2010) entire document	7, 8
Y	US 8,762,201 1 (NOONAN) 24 June 2014 (24.06.2014) entire document	11, 33
A	US 7,519,703 B1 (STUART et al.) 14 April 2009 (14.04.2009) entire document	1-54
A	US 2013/0188322 A1 (LOWE) 25 June 2013 (25.06.2013) entire document	1-54

☐ Further documents are listed in the continuation of Box C.☐ See patent family 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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Date of the actual completion of the international search

01 October 2015

Date of mailing of the international search report

03 NOV 2015

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PCT OSP: 571-272-7774

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2015/045308

B Fields Searched:

USPC - 705/14.11, 14.13, 14.15, 14.19, 14.25, 14.4, 14.41, 14.42, 14.49, 14.52, 14.53, 14.58, 14.63, 14.66, 14.72; 709/214, 218, 219, 226, 245, 250; 72/ 68, 71