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(54) **Title:** CALCULATING RELEVANCE SETTINGS

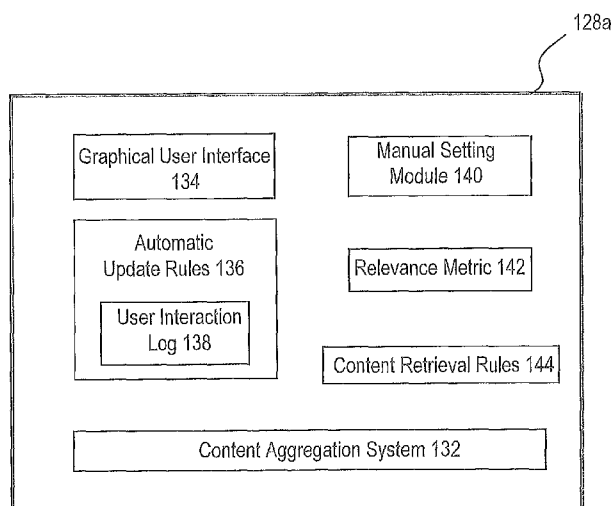


FIG 4.

(57) **Abstract:** This discloses apparatus comprising a communications system configured to allow a user to communicate with a remote content provider and to receive content therefrom, content being associated at the content provider with at least one of plural entities or categories; a user settings system configured to enable a user manually to set a relevance setting for each of the plural entities or categories, and to store the relevance settings; a user interaction system configured to receive user activity data, the user activity data relating to interaction of a user with the plural entities or categories or content relating to the plural entities or categories; and a relevance calculating system configured to use the user activity data and the manually set relevance setting automatically to calculate a system-calculated relevance setting for each of the entities or categories.



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Calculating Relevance Settings

Field of the Invention

This invention relates generally to calculating relevance setting and particularly,
5 although not exclusively, to relevance-based processing of social network content.

Background to the Invention

As social networking has grown more popular, the information available to
members has become voluminous. Users are often registered members of multiple
10 social networking services, such as Facebook, Twitter and MySpace, and it is usual
for them to be inundated with information that does not interest them.

For example, a member will typically have a defined relationship with entities within
the social network, for example a set of friends, user groups and/or applications.
15 Each entity may post data messages including status updates, blogs, photographs
and videos. Some entities post messages more frequently than others. There exists
the possibility of members being presented with information of little or no interest
to them from these entities.

20 In view of this, many social network applications operate, within their own
platforms, recommendation-based algorithms for the purpose of presenting
members with a subset, or ranked list, of information considered relevant to them.
Although these relevance-based algorithms vary, a member's recent interaction
history within the social network application is usually a key factor. For example, if
25 a member frequently accesses a friend's profile page, then updates from that friend
are more likely to appear in the user's 'recent updates' or 'top news' section of their
landing page.

Nevertheless, members have little understanding or control over what information
30 is deemed relevant by their social network applications. In some applications, a
member is able to 'turn off' updates from selected entities. However, they may still

want to see the occasional message from those entities if the message has some relevance to their own activities.

In the context of mobile communications devices, particularly smartphones and PDAs, the issue of controlling what information is initially presented to members is important in terms of bandwidth and data usage. Currently, mobile users are reliant on what remote social network applications deem is important or relevant to them and hence use valuable bandwidth to download content which may be of little interest, and thereafter have to browse for content of actual interest to the user. Mobile devices also have a limited display size and hence there is a further need for users to be able to control what information is actually relevant.

Further, it is now possible for mobile device users to use so-called social network aggregators (hereafter “aggregators”). Aggregators are applications capable of accessing multiple social network applications and presenting, within a dedicated graphical user interface (GUI), updates from each of multiple social networks of which the user is a member. Users are able to access and interact with the social networks in the usual manner by clicking or, in the case of touch screen devices, tapping on the relevant updates or links therein. Thus, the problem of users being presented with irrelevant updates from entities is much greater and a particular issue in view of the restricted bandwidth capabilities of mobile channels and the limited display size.

Summary of the Invention

A first aspect of the invention provides apparatus comprising:

a communications system configured to allow a user to communicate with a remote content provider and to receive content therefrom, content being associated at the content provider with at least one of plural entities or categories;

a user settings system configured to enable a user manually to set a relevance setting for each of the plural entities or categories, and to store the relevance settings;

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a user interaction system configured to receive user activity data, the user activity data relating to interaction of a user with the plural entities or categories or content relating to the plural entities or categories; and

a relevance calculating system configured to use the user activity data and the manually set relevance setting automatically to calculate a system-calculated relevance setting for each of the entities or categories.

The relevance calculating system may use a predetermined algorithm for determining the updated relevance value using locally-stored user activity data representing the user's interaction history over a period of time.

The relevance calculating system may be responsive to a change in the relevance setting made manually using the user settings system to constrain the amount of change made subsequently to the relevance value in the opposite direction by the relevance update system. The relevance calculating system may be configured to constrain the amount of change to be less than the amount of change in the opposite direction made manually using the user settings system.

The user settings system may be configured to enable manual setting and local storage of minimum and maximum relevance values for the or each entity or category, and the relevance calculating system may be configured to constrain the system-calculated relevance setting to reside between the minimum and maximum values.

The user interface may be configured to generate and present on the screen a visual indication of at least one entity or category and the associated system-calculated relevance setting. This may further comprise a touch-sensitive display through which the user interface system enables the manual setting means to be operated through touch commands or gestures. The user interface system may be configured to display a graph indicative of at least three selectable relevance values for an entity or category, and an indicator representing the current relevance value, the indicator being movable on the graph by user-interaction with the touch-sensitive display, and

the user interface system may be configured to display on a common graph a respective indicator for each of plurality of entities or categories. Alternatively, the user interface may be configured to display a graph indicative of at least three selectable relevance values, first and second indicators representing respective
5 minimum and maximum values, and a third indicator representing the current relevance value within the minimum and maximum values for an entity or category, the first and second indicators being movable along the graph by user-interaction with the touch-sensitive display to operate the manual setting system.

10 The apparatus may comprise:

a data retrieval system configured to request from the content provider a subset of content provided, by, or related to, the associated entities or categories, the requested subset for each entity or category being determined in accordance with the system-calculated relevance setting for the corresponding entity; and

15 a user interface system configured to cause display of the requested subset of content received by the communications module from the social network.

Alternatively, the apparatus may comprise:

a data ordering system configured to order content received from the content
20 provider relating related to the associated entities or categories, the ordering being determined in accordance with the system-calculated relevance settings for the entities or categories; and

a user interface system configured to cause display of the ordered content.

25 The content provider may be a social network and the content may be associated at the content provider with at least one of plural entities by having been posted by an entity. The apparatus may be configured to communicate with and receive content from plural social networks and the user interaction system may be configured to receive user activity data relating to interaction of the user with the plural entities in
30 the plural social networks. Alternatively, the content provider may be a news service and the content may be associated at the content provider with at least one of plural categories by being categorised at the news service. Here, the apparatus is

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configured to receive content from plural news services and the user interaction system may be configured to receive user activity data relating to interaction of the user with the categories in each of the plural news services.

5 A second aspect of the invention provides a method comprising:

allowing a user to communicate with a remote content provider and to receive content therefrom, content being associated at the content provider with at least one of plural entities or categories;

10 enabling a user manually to set a relevance setting for each of at least one of the plural entities or categories, and storing the relevance settings;

receiving user activity data, the user activity data relating to interaction of a user with the plural entities or categories or content relating to the plural entities or categories; and

15 using the user activity data and the manually set relevance setting automatically to calculate a system-calculated relevance setting for each of the entities or categories.

According to another aspect of the invention, there is provided apparatus comprising:

20 a communications system configured to allow a user to communicate with a remote social network and receive therefrom content posted by entities associated with the user in the social network;

a user settings system configured to enable a user manually to set a relevance setting for each of the plural entities, and to store the relevance settings;

25 a user interaction system configured to receive user activity data in relation to an entity's profile or activity data at the social network;

a relevance calculating system configured to use the user activity data and the manually set relevance setting automatically to calculate a system-calculated relevance setting for each of the entities;

30 a data retrieval system configured to request from the social network a subset of content provided, by, or related to, the associated entities, the requested subset for each entity being determined in accordance with the system-calculated relevance setting for the corresponding entity; and

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a user interface system configured to cause display of the requested subset of content received by the communications module from the social network.

According to a further aspect of the invention, there is provided apparatus

5 comprising:

a communications system configured to allow a user to communicate with a remote social network and receive therefrom content posted by entities associated with the user in the social network;

a user settings system configured to enable a user manually to set a relevance
10 setting for each of the plural entities, and to store the relevance settings;

a user interaction system configured to receive user activity data in relation to an entity's profile or activity data at the social network;

a relevance calculating system configured to use the user activity data and the manually set relevance setting automatically to calculate a system-calculated
15 relevance setting for each of the entities;

a data ordering system configured to order content received from the social network relating related to the associated entities, the ordering being determined in accordance with the system-calculated relevance settings for the entities; and

a user interface system configured to cause display of the ordered content.
20

In either of these two aspects, the relevance calculating system may use a predetermined algorithm for determining the updated relevance value using locally-stored user activity data representing the user's interaction history over a period of time.

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The relevance calculating system may be responsive to a change in the relevance setting made manually using the user settings system to constrain the amount of change made subsequently to the relevance value in the opposite direction by the relevance update system. Here, the relevance calculating system is configured to
30 constrain the amount of change to be less than the amount of change in the opposite direction made manually using the user settings system.

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Alternatively, the user settings system may be configured to enable manual setting and local storage of minimum and maximum relevance values for the or each entity, and wherein the relevance calculating system may be configured to constrain the system-calculated relevance setting to reside between the minimum and maximum values.

The user interface may be configured to generate and present on the screen a visual indication of at least one entity and their system-calculated relevance setting. Here, the apparatus may further comprise a touch-sensitive display through which the user interface system enables the manual setting means to be operated through touch commands or gestures. Here, the user interface system may be configured to display a graph indicative of at least three selectable relevance values for an entity, and an indicator representing the current relevance value, the indicator being movable on the graph by user-interaction with the touch-sensitive display. The user interface system may be configured to display on a common graph a respective indicator for each one of a plurality of entities.

The user interface may be configured to generate and present on the screen a visual indication of at least one entity and their system-calculated relevance setting, the user interface may be configured to display a graph indicative of at least three selectable relevance values, first and second indicators representing respective minimum and maximum values, and a third indicator representing the current relevance value within the minimum and maximum values for an entity, the first and second indicators being movable along the graph by user-interaction with the touch-sensitive display to operate the manual setting system.

Brief Description of the Drawings

Embodiments of the present invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of a mobile terminal embodying aspects of the invention;

Figure 2 is a schematic diagram illustrating components of the Figure 1 mobile terminal and their interconnection;

Figure 3 is a schematic diagram of communications network in which the mobile terminal of Figures 1 and 2 is shown connected to first and second social network
5 platforms;

Figure 4 is a schematic diagram of software components provided in a dedicated social networking application according to a first embodiment which can be executed on the mobile terminal of Figures 1 and 2;

10 Figures 5 to 8 are flow diagrams indicating steps in different operating phases of the social networking application represented in Figure 4;

Figures 9 to 12 show screenshots taken from the mobile terminal of Figures 1 and 2 during operation of a manual setting system provided within the social networking application according to the first embodiment; and;

Figure 13 is a schematic diagram of software components provided in a dedicated
15 social networking application according to a second embodiment which can be executed on the mobile terminal of Figures 1 and 2.

Detailed Description of Preferred Embodiments

Embodiments of the invention relate to methods and systems for interaction with
20 online social networks, particularly, though not exclusively, interaction made using software stored on and executed by mobile communications terminals such as mobile telephones and PDAs.

Social network platforms (hereafter “social networks”) allow registered members of
25 the platform to exchange information with other members with whom they have a defined relationship. Commonly, this involves a member creating a personal network defined by connections with friends, business contacts, user groups with a common theme and/or applications. A member’s personal network may include friends of friends. Collectively, they may be termed ‘connected entities’.

30

When accessing a social network from a computer or mobile terminal through a browser or a dedicated application, a member is first presented with a home or

landing page which presents within a dedicated user interface a list or selection of recent updates, or activities, posted by connected entities. Given the potential for members to be inundated with large amounts of updates of little or no interest to them, some social networks operate automated relevancy algorithms for the purpose
5 of predicting what is most relevant or interesting to members, for presenting a restricted or filtered set of posts on their landing page. However, members have little understanding of how these remotely operated algorithms work from network to network, let alone any ability to control locally what is currently of interest to them.

10

For this purpose, embodiments described herein provide a dedicated client application configured to allow access to social networks and to control local relevance settings associated with entities, for the purpose of filtering, or alternatively, ranking content. The embodiments describe client applications that
15 incorporate so-called aggregation systems which facilitate the presentation of information from multiple social networks, often as a consolidated list, and interaction with the appropriate social network in the reverse direction. However, locally-stored relevancy features are not limited to aggregation-type applications and client applications for communicating with just one social network are able to
20 incorporate this functionality.

A social network here is defined as an online service in which a user can have defined associations with other users and in which users can upload content such that it can be accessed by other users. Such content may be restricted to access only
25 by associated users or it may be available to all users registered with the service or to all users able to access the service.

Referring firstly to Figure 1, a terminal 100 is shown. The exterior of the terminal 100 has a touch sensitive display 102, hardware keys 104, a speaker 118 and a
30 headphone port 120.

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Figure 2 shows a schematic diagram of the components of terminal 100. The terminal 100 has a controller 106, a touch sensitive display 102 comprised of a display part 108 and a tactile interface part 110, the hardware keys 104, a memory 112, RAM 114, a speaker 118, the headphone port 120, a wireless communication
5 module 122, an antenna 124 and a battery 116. The controller 106 is connected to each of the other components (except the battery 116) in order to control operation thereof.

The memory 112 may be a non-volatile memory such as read only memory (ROM) a
10 hard disk drive (HDD) or a solid state drive (SSD). The memory 112 stores, amongst other things, an operating system 126 and may store software applications 128. The RAM 114 is used by the controller 106 for the temporary storage of data. The operating system 126 may contain code which, when executed by the controller 106 in conjunction with RAM 114, controls operation of each of the hardware
15 components of the terminal.

The controller 106 may take any suitable form. For instance, it may be a microcontroller, plural microcontrollers, a processor, or plural processors.

20 The terminal 100 may be a mobile telephone or smartphone, a personal digital assistant (PDA), a portable media player (PMP), a portable computer or any other device capable of running software applications, accessing social networks through a communications interface and providing outputs on a display. In some embodiments, the terminal 100 may engage in cellular communications using the
25 wireless communications module 122 and the antenna 124. The wireless communications module 122 may be configured to communicate via several protocols such as GSM, CDMA, UMTS, Bluetooth and IEEE 802.11 (Wi-Fi).

The display part 108 of the touch sensitive display 102 is for displaying images and
30 text to users of the terminal and the tactile interface part 110 is for receiving touch inputs from users.

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As well as storing the operating system 126 and software applications 128, the memory 112 may also store multimedia files such as music and video files. A wide variety of software applications 128 may be installed on the terminal including web browsers, radio and music players, games and utility applications. Some or all of the software applications stored on the terminal may provide audio outputs. The audio provided by the applications may be converted into sound by the speaker(s) 118 of the terminal or, if headphones or speakers have been connected to the headphone port 120, by the headphones or speakers connected to the headphone port 120.

In some embodiments, the hardware keys 104 are a keypad or a keyboard. The hardware keys 104 include dedicated volume control keys or switches. The hardware keys 104 may for example comprise two adjacent keys, a single rocker switch or a rotary dial. In some embodiments, the hardware keys 104 are located on the side of the terminal 100.

Referring to Figure 3, the terminal 100 is shown connected to a communications network 130 over which data can be transmitted and received with one or more online social networks 205a, 205b. Other terminals 100n are similarly connected.

A client application (hereafter “social networking (SN) application”) 128a is stored on the memory 112 of the terminal 100 for execution by the controller 106.

Referring to Figure 4, which represents a first embodiment, the SN application 128a comprises a number of functional components including a content aggregation system 132, a graphical user interface (GUI) 134, a set of automatic update rules 136, a user interaction log 138, a manual setting module 140, a relevance metric 142 and content retrieval rules 144.

The content aggregation system, 132 is a software system that takes content from one or more sources, in this case social networks, and displays the content in an aggregated format on a dedicated user interface, for example as a consolidated list. Interaction with content takes place with the aggregation system 132 effectively

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multiplexing data back over the network 130 to ensure it reaches the correct social network 205a, 205b. The GUI 134 here provides a dedicated user interface for presenting aggregated content, and subsequent interactions, in an intuitive manner. The GUI 134 also allows users of the terminal 100 to access and modify certain user
5 settings associated with the SN application 128a, including making manual relevancy settings, as is described below.

The relevance metric 142 comprises a value, or set of values, respectively stored against some or all of the user's connected entities. The value stored against an
10 entity represents the current relevancy of the entity to the user. The value can be a label (low, medium, high) but in this case is a number, where a low number represents a low relevancy and a high number a high relevancy. In its simplest form, the value can be set at one of at least three discrete levels, namely 0 for no relevancy or interest, 1 for some relevancy or interest and 2 for high relevancy or
15 interest. Preferably, a larger range of discrete levels is available, for example ranging from 0 to 100 on a linear scale, with 0 indicating zero relevancy and 100 indicating maximum relevancy. Whatever its form, the relevance metric 142 is a key parameter used by the SN application 128s in determining what content is retrieved from remote social networks 205a, 205b for each of the user's connected entities.

20 The value of the relevance metric 142 is set and updated both by the automatic update rules 136 and the manual setting module 140.

The manual setting module 140 allows the user manually to set the relevance metric
25 142 to a particular value or to constrain it within a range of values. This is performed through the GUI 134, and various interface and visualisations options are available, as is described below. The basic interface provides a linear slider showing the full range of values for the relevance metric (0 = no interest, 100 = high interest) with all intermediate values being selectable by the user.

30 Upon manually setting the relevance metric 142 for a particular entity, subsequent communications with the social networks 205a, 205b use this relevance metric 142

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when determining how many of the entity's posts or content are fetched from the social networks. The amount of data used to upload content for the entity therefore reflects the current interest or relevance level applied to the entity by the user.

However, the relevance metric 142 can change from the manually-set value in response to user-interaction with the social networks 205a, 205b. This change is
5 determined by the automatic update rules 136.

The automatic update rules 136 comprise a set of predetermined instructions which determine how the relevance metric 142 for an entity is updated from the current
10 value. The rules take into account the user's interactions with that entity made through the SN application 128a. For this purpose, a user interaction log 138 is maintained, which stores a history of interactions between the user and individual entities. Such interactions can include the user accessing an entity's profile on a social network, commenting on their status or content posted by the entity and so
15 on. The user interaction log 138 may also receive interaction data from the social networks 205a, 205b for example to record interactions made remotely by entities in relation to the user's profile or posts and even interactions made by friends-of-friends to a friend's profile.

As to the specific update rules 136, these can use known algorithms currently
20 employed by social networks. For example, if the user has accessed an entity's profile in the past seven days, or has posted a comment in relation to their status or a photograph, then the rules may determine that the relevance metric 142 against that entity should be increased automatically. Conversely, if the user has not
25 accessed an entity's profile in the past seven days, nor communicated any information with them, then the rules may determine that the metric 142 should be decreased automatically.

It will therefore be appreciated that the automatic update rules 136 may override a
30 previously-made manual setting based on historical interactions, reflecting a change in the user's current interest level in relation to a connected entity.

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In addition, the update rules 136 can constrain how an entity's relevance metric 142 is updated based on previously-made settings or changes made by the user locally using the manual setting module 140.

5 One example of a constraining rule is a so-called 'traction rule'. The traction rule identifies the amount and direction that a manual setting changes the relevance metric 142. It then limits a subsequent change made by the automatic update rules 136 in the opposite direction to one which is less than the amount made manually. Thus, a manual change that shifts the relevance metric 142 positively from 0 (no
10 interest) to 50 (some interest) will constrain a subsequent negative change. An automatic change of -40 may in actual fact be constrained to -20 in order to reflect the user's recent increase in interest. This limiting effect may diminish over time, with a subsequent lack of interaction with the entity causing the traction rule to be switched off.

15 Another constraining rule applies where the manual setting module 140 permits the user to define a range of values for the relevance metric 142. In this 'window' mode, the user defines a window of minimum and maximum values within the GUI 134 which can be widened or narrowed, and moved across the linear range between
20 0 and 100. The automatic update rules 136 constrain the subsequently determined value to a value which is within the window. If the value is determined to be below the minimum threshold, then the rules dictate that the relevance metric 142 is set to the minimum value, and dictate that the relevance metric 142 is set to the maximum value if the value is determined to be above the maximum threshold.

25 The content retrieval rules 144 determine which content is retrieved based on the current relevance value 142 for each of the user's connected entities. The aim is to communicate data efficiently, and particularly to upload content that is of most interest or relevancy to a user based on the relevance metric 142. In this
30 embodiment, the relevance metric 142 dictates a subset of content to be downloaded from the social networks 205a, 205b for particular entities.

The content retrieval rules 144 may, for example, state that the landing page is populated with the most recent content posted by the ten entities having the highest relevance metric values. This is particularly useful given the limited display size of mobile terminals and limits the amount of data that is initially downloaded to show the most relevant content.

The content retrieval rules 144 may additionally state that a search results page is populated with the most recent content posted by the ten entities having the highest relevance metric values and meeting the search criteria.

10

During interaction with particular entities, the content retrieval rules 144 may dictate that a limited number of posts made by, or involving, that entity are retrieved for display. For example, the content retrieval rules 144 may only upload content that is new and has recently received a lot of feedback, comments or 'likes', especially where the feedback, comments or likes are from other entities that are also connected to the user or, further, where those other entities have a high relevance metric with respect to the user. In another example, the content retrieval rules 144 may only upload content that meets these two criteria and additionally is connected to recent keywords that the user has entered (using text analysis) or interacted with.

20

Within the GUI 134, the retrieved subsets of content for respective entities can also be ranked based on display rules which use the relevance metric 142 as basis for the ranking.

25

Referring to Figure 5, the steps performed by a user in acquiring and initiating the SN application 128a are now described. In a first step 5.1, the SN application 128a is downloaded from a remote application store. Next, in step 5.2, the user registers the SN application 128 by inputting a username and password. This step may be omitted. In step 5.3, the user is prompted to select a social network 205a, 205b from a menu, following which, in step 5.4, they enter their username and password for that social network. If the user wishes to add further social networks 205a,

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205b, then in step 5.5 they may return to the menu and repeat steps 5.3 and 5.4.

When details for all social networks 205a, 205b are registered, the user may proceed to run the SN application 128a, for which see Figure 6.

5 Referring to Figure 6, the SN application 128a is run in step 6.1 and initially attempts to retrieve a consolidated set of content from the social networks 205a, 205b with which to populate the application's landing page. For this purpose, in step 6.2, the current relevance metric 142 is accessed. In step 6.3, the content retrieval rules 144 are applied. In step 6.4, the content subset to be retrieved is
10 determined using the content retrieval rules 144. In step 6.5, the identified subset is requested from the relevant social networks 205a, 205b. In step 6.6, the received content subset is used to populate the GUI 134. The user may then access user settings to operate the manual setting module, in step 6.7, for which see Figure 7. Alternatively, the user may interact with the social networks through the GUI 134,
15 in step 6.8, for which see Figure 8.

Referring to Figure 7, in step 7.1 the user is presented with a manual setting interface for a selected entity, for example a friend on Facebook™. In step 7.2 the SN application 128a receives the user's inputs to change the current value of the
20 relevance metric 142 for that entity. In step 7.3, the relevance metric 142 is updated. In step 7.4, the content retrieval rules 144 are applied and in step 7.5 the content subset to be downloaded is identified. In step 7.6 the identified subset of content is requested from the relevant social networks 205a, 205b. In step 7.7, the received content subset is used to populate the GUI 134. The user may then again
25 access user settings to operate the manual setting module, in step 7.8, perhaps for a different entity. Alternatively, the user may interact with the social networks 205a, 205b through the GUI 134, in step 7.9, for which see Figure 8.

Referring to Figure 8, in step 8.1, in response to interaction with the social networks
30 205a, 205b, which may be user initiated or in response to interactions made remotely by connected entities, the user interaction log 138 is updated. In step 8.2, the automatic update rules 136 are applied and in step 8.3, the relevance metric 142

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is updated accordingly. In step 8.4, the content retrieval rules 144 are applied and in step 8.5 the new content subset to be downloaded is identified. In step 8.6 the newly-identified subset of content is requested from the relevant social networks 205a, 205b. In step 8.7, the received content subset is used to populate the GUI 134. The user may then again access user settings to operate the manual setting module, in step 8.8, perhaps for a different entity. Alternatively, the user may interact with the social networks 205a, 205b through the GUI 134, in step 8.9.

Referring now to Figure 9a, there is shown one form of manual setting interface (hereafter “manual interface”) 200 for the manual setting module 140. In this case, the manual interface 200 is associated with one of the user’s contacts “Carol”. The manual interface 200 in this case takes the form of a slider bar 202 representing the overall range of selectable values for the relevance metric 142. The value is set by moving an avatar 204 in the left or right direction across the bar 202. Movement can be achieved using the hardware keys 104 or, preferably, through the touch-sensitive display 102. Moving the avatar 204 to the extreme left of the bar 202 represents a relevance value of 0 (no interest = hide content) whereas moving the avatar 204 to the opposite end represents a relevance value of 100 (high interest = show always). The avatar 204 can be moved to any one of the 99 intermediate values.

Also shown within the bar are a number of indicators 203 which show to the user the distribution of relevance values for other connected entities.

Referring to Figure 9b, the avatar 204 is shown when moved from the previous value to a new, lower value, indicating that the user considers Carol’s content to be less important or less relevant. Initially, with no or limited interaction with Carol or entities related to her on a social network, this selected value will be used by the SN application 128a when determining the subsets of content to download. Following a period of interaction with Carol, or entities related to Carol on the social network, the automatic update rules 136 apply. In this case, the rules determine that her

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relevance value should be increased. As shown in Figure 9c, the avatar 204 is moved in the right hand direction to indicate this automatic update.

As mentioned previously, the automatic update rules 136 may constrain the amount of change that can be made automatically to the relevance metric 142. Referring to
5 Figures 10a and 10b, there is again shown a manual decrease in Carol's relevance value. In this case, however, the automatic update rules 136 apply a traction algorithm to limit the amount of change that can be made automatically in the opposite direction. Referring to Figure 10c, therefore, a relatively large increase in
10 the relevance value 204 is constrained to a smaller increase 204' reflecting the previously-made manual decrease.

Referring to Figure 11a, there is shown another form of manual setting interface 200 for the manual setting module 140. In this case, the user is able to define a
15 window 208 of relevance values bounded by minimum and maximum values 210, 212. The window 208 itself provides an adjustable avatar which the GUI 134 allows to be moved left and right along the slider bar 202, and also to be narrowed and widened by appropriate gestures (pinching and stretching) made on the touch-sensitive display 102. Alternatively, the size and location of the window 208 can be
20 made by a user placing or moving the upper and lower bounds separately by separate inputs on the touch-sensitive display 102.

The automatic update rules 136 in this case constrain the updated relevance value to one which is within the window 208. Hence if it is determined that the updated
25 relevance value should be below the minimum value, its updated value, represented by circle 215, is set at the minimum value defined manually by the user. Referring to Figure 11b, if the user considers that Carol's relevance value is not sufficiently high, they may slide the window to the right hand side in order to retrieve more content. In this case, the automatic update rules 136 tracks the movement and
30 hence the updated value 215 stays at the new minimum value. Future interactions will not permit the updated value 215 to fall below this minimum value but it can of course increase within the window 208.

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A further example is now described with reference to Figure 12, which represents the manual settings in relation to a different entity, Bob. Figure 12a shows the current position of the window 208 with the automatically-determined relevance value 215 shown. If the user knows that Bob does not post content too often, but still wishes to see some of his rare updates, then the window 208 is moved in the right-hand direction (Figure 12b). In Figure 12c, the window 208 is shown widened in order to allow the system considerable flexibility in calculating a relevancy setting.

10.

Thus, this embodiment enables subsets of content, or a filtered selection of overall content, to be retrieved over the relatively limited bandwidth available to the mobile terminal 100. Bandwidth is used primarily to retrieve content that is most relevant to the user, according to manual settings made at the terminal 100, and which can be adjusted at any time. Put another way, less bandwidth is used by the user subsequently browsing for data which might be of greater interest to them. Given the limited display size of the terminal's display, the overall user experience is improved.

20 The social networking application 128 is configured to cause display content posted by friends etc. when so commanded by a user. When content is displayed, it is accompanied by an avatar associated with the entity that posted the content. The social networking application 128 also is configured to display comments made against content, and to display against the comments the avatars of the associated entities. Comments may be displayed indented with respect to the posted content.

The social networking application 128 is configured to modify the displayed avatars in such a way as to indicate the relevance metric 142 associated with that entity. This provides the user of the device 100 with an indication of the proximity of a entity that has posted content or a comment to themselves. The relevance metric or proximity may be indicated in any suitable way. For instance, the relevance metric 30 142 may be indicated as a number or a colour. The relevance metric 142 may be

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overlaid on the avatar. For instance, an indicator overlaying part of the avatar may be coloured depending on the relevance metric 142 for the corresponding entity. Red may indicate the highest metric, indicating the closest proximity, with a scale progressing through orange and yellow to green indicating the lowest relevance
5 metric 142.

The social networking application 128 may provide the user of the device 100 with the ability to change the relevance metric for a user from a displayed avatar for that user in any of the manners described above. The slider bars of any of Figures 9 to
10 12 may be accessed in any suitable way. For instance, the slider bar may be produced in response to the detection of a long press on the avatar.

Alternatively or in addition, the social networking application 128 may be configured to display the avatar for the user selected by the user of the device 100,
15 wherein a location of the avatar is dependent on the relevance metric for the corresponding user. This may be achieved by displaying an actual or virtual line or slider bar that relates at one end to the highest relevance metric 142 and at the other end to the lowest metric, with the location of the avatar for a user being dependent on the relevance metric for the corresponding user. The social networking
20 application 128 may be caused to display avatars for multiple entities, the avatars being located according to the relevance metric 142 for the corresponding entity, so that the user of the terminal 100 may easily be able to see how the relevance metric 142 for an entity compares to the relevance metrics 142 for other entities. A user of the terminal 100 may change the relevance metric 142 for an entity by dragging the
25 avatar for that entity to a different location. In this case, the social networking application 128 is configured to respond to a user input starting at a location corresponding to an avatar and ending at a different location to change the relevance metric 142 for the corresponding entity according to any of the manners described above with reference to Figures 8 to 11.

30

A second embodiment will now be described briefly with reference to Figure 13 which relates to a modified form of SN application 128b. This SN application 128b

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has functional modules identical to those of the first embodiment except for the content retrieval rules 144 which are replaced by content ranking rules 145. The content ranking rules 145 comprise a set of rules which determine, based on the relevance metric 142, the order in which retrieved content is displayed in the GUI
5 134. The SN application 128b retrieves content from the social networks in the conventional manner, relying on the relevancy algorithms employed by said social networks, and then applies the content ranking rules 145 in determining which of the content ranks higher than other content. Typically, a lower relevance metric will result in updates for that person being further down the list on the landing page
10 than those posted by entities with a higher relevance metric. Within individual entity pages, the content ranking rules 145 determine which types of update appear higher than others, e.g. recent posts are higher than older posts, but older posts with relevance to the user's recent activity log appear higher than newer posts with no interaction history.

15 In a third embodiment, not shown, a further modified form of SN application employs both content retrieval rules 144 and content ranking rules 145 to respectively filter the amount of content that is downloaded from social networks 205a, 205b (as in the first embodiment) and then rank the filtered content for
20 display on the GUI 134 (as in the second embodiment).

Other embodiments of the invention are concerned with web services other than social networking.

25 In some embodiments, the software application 128 is a news feed reader and the remote service provider is one or more news services. The news reader 128 here may be an RSS reader, for instance. At each of plural news services, news stories are categorised into one or more categories. For instance, a first story may be categorised into categories 'politics' and 'world news'. A second story may be
30 categorised into 'film' and 'celebrity gossip'.

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When a user has configured the news reader 128 to aggregate news stories from plural news providers, the news reader 128 is configured to retrieve content from each of those plural providers. Interaction by the user with news items, i.e. opening and reading of news items, is logged and stored in the user interaction log 138. The
5 log includes information about the categories of the news items that are viewed and also about the provider of the news items.

The manual setting module 140 is configured to allow a user to set a preference setting for categories of news stories. The manual setting module 140 may also be
10 configured to allow the user to set preference settings for different news providers. The value of a relevance metric 142 is set and updated both by the automatic update rules 136 and the manual setting module 140 in any suitable way, for instance using any of the techniques described above.

15 The relevance metric 142 is used by the news feed application 128 in determining what news items are retrieved from remote news providers, similarly to the use of the relevance metric in determining what posts to retrieve from the social networking provider, as described above.

20 Alternatively, the relevance metric 142 is used by the news feed application 128 in determining an order in which to display news items to a user, for instance on a landing page, similarly to the use of the relevance metric in determining what social network posts to display, as described above.

25 In other embodiments, the same principles are applied to a service for recommending books, music, films etc. Here, books, films etc. are categorised, e.g. into 'horror', 'comedy', 'history' etc. User interaction is logged and a user is able manually to set a preference setting for each category. The value of a relevance metric 142 is set and updated both by the automatic update rules 136 and the
30 manual setting module 140 in any suitable way, for instance using any of the techniques described above. Information about books, music, films etc. is downloaded to the terminal by the application 128. Either the information is

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selected for download based in the relevance metric 142 or the information is ordered for presentation based on the metric.

5 In other embodiments, advertising is provided through the application 128 in any of the manners described above.

10 It will be appreciated that the above described embodiments are purely illustrative and are not limiting on the scope of the invention. Other variations and modifications will be apparent to persons skilled in the art upon reading the present application.

Moreover, the disclosure of the present application should be understood to include any novel features or any novel combination of features either explicitly or implicitly disclosed herein or any generalization thereof and during the prosecution
15 of the present application or of any application derived therefrom, new claims may be formulated to cover any such features and/or combination of such features.

Claims

1. Apparatus comprising:

a communications system configured to allow a user to communicate with a remote content provider and to receive content therefrom, content being associated
5 at the content provider with at least one of plural entities or categories;

a user settings system configured to enable a user manually to set a relevance setting for each of the plural entities or categories, and to store the relevance settings;

a user interaction system configured to receive user activity data, the user
10 activity data relating to interaction of a user with the plural entities or categories or content relating to the plural entities or categories; and

a relevance calculating system configured to use the user activity data and the manually set relevance setting automatically to calculate a system-calculated relevance setting for each of the entities or categories.

15

2. Apparatus according to claim 1, wherein the relevance calculating system uses a predetermined algorithm for determining the updated relevance value using locally-stored user activity data representing the user's interaction history over a period of time.

20

3. Apparatus according to either preceding claim, wherein the relevance calculating system is responsive to a change in the relevance setting made manually using the user settings system to constrain the amount of change made subsequently to the relevance value in the opposite direction by the relevance update system.

25

4. Apparatus according to claim 3, wherein the relevance calculating system is configured to constrain the amount of change to be less than the amount of change in the opposite direction made manually using the user settings system.

30

5. Apparatus according to claim 1, wherein the user settings system is configured to enable manual setting and local storage of minimum and maximum relevance values for the or each entity or category, and wherein the relevance

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calculating system is configured to constrain the system-calculated relevance setting to reside between the minimum and maximum values.

6. Apparatus according to any preceding claim, wherein the user interface is
5 configured to generate and present on the screen a visual indication of at least one entity or category and the associated system-calculated relevance setting.

7. Apparatus according to claim 6, further comprising a touch-sensitive display through which the user interface system enables the manual setting means to be
10 operated through touch commands or gestures.

8. Apparatus according to claim 7, wherein the user interface system is configured to display a graph indicative of at least three selectable relevance values for an entity or category, and an indicator representing the current relevance value,
15 the indicator being movable on the graph by user-interaction with the touch-sensitive display.

9. Apparatus according to claim 8, wherein the user interface system is configured to display on a common graph a respective indicator for each of
20 plurality of entities or categories.

10. Apparatus according to claim 6 or claim 7, wherein the user interface is configured to display a graph indicative of at least three selectable relevance values, first and second indicators representing respective minimum and maximum values,
25 and a third indicator representing the current relevance value within the minimum and maximum values for an entity or category, the first and second indicators being movable along the graph by user-interaction with the touch-sensitive display to operate the manual setting system.

30 11. Apparatus as claimed in any preceding claim, comprising:
a data retrieval system configured to request from the content provider a subset of content provided, by, or related to, the associated entities or categories,

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the requested subset for each entity or category being determined in accordance with the system-calculated relevance setting for the corresponding entity; and

a user interface system configured to cause display of the requested subset of content received by the communications module from the social network.

5

12. Apparatus as claimed in any of claims 1 to 10, comprising:

a data ordering system configured to order content received from the content provider relating related to the associated entities or categories, the ordering being determined in accordance with the system-calculated relevance settings for the entities or categories; and

10

a user interface system configured to cause display of the ordered content.

13. Apparatus as claimed in any preceding claim, wherein the content provider is a social network and the content is associated at the content provider with at least one of plural entities by having been posted by an entity.

15

14. Apparatus as claimed in claim 13, configured to communicate with and receive content from plural social networks and wherein the user interaction system is configured to receive user activity data relating to interaction of the user with the plural entities in the plural social networks.

20

15. Apparatus as claimed in any of claims 1 to 12, wherein the content provider is a news service and the content is associated at the content provider with at least one of plural categories by being categorised at the news service.

25

16. Apparatus as claimed in claim 15, wherein the apparatus is configured to receive content from plural news services and wherein the user interaction system is configured to receive user activity data relating to interaction of the user with the categories in each of the plural news services.

30

17. A method comprising:

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allowing a user to communicate with a remote content provider and to receive content therefrom, content being associated at the content provider with at least one of plural entities or categories;

enabling a user manually to set a relevance setting for each of at least one of
5 the plural entities or categories, and storing the relevance settings;

receiving user activity data, the user activity data relating to interaction of a user with the plural entities or categories or content relating to the plural entities or categories; and

using the user activity data and the manually set relevance setting
10 automatically to calculate a system-calculated relevance setting for each of the entities or categories.

18. A method according to claim 17, comprising responding to a change in the relevance setting made manually using the user settings system by constraining the
15 amount of change made subsequently to the relevance value in the opposite direction by the relevance update system.

19. A method according to claim 18, comprising constraining the amount of change to be less than the amount of change in the opposite direction made
20 manually using the user settings system.

20. A method according to claim 17, comprising enabling manual setting and local storage of minimum and maximum relevance values for the or each entity or category, and constraining the system-calculated relevance setting to reside between
25 the minimum and maximum values.

21. A method according to any of claims 17 to 20, wherein the user interface is configured to generate and present on the screen a visual indication of at least one entity or category and the associated system-calculated relevance setting.

30

22. A method according to claim 21, comprising displaying a graph indicative of at least three selectable relevance values for an entity or category, and an indicator

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representing the current relevance value, the indicator being movable on the graph by user-interaction with the touch-sensitive display.

23. A method according to claim 22, wherein the user interface system is
5 configured to display on a common graph a respective indicator for each of plurality of entities or categories.

24. A method according to claim 21, comprising displaying a graph indicative of
at least three selectable relevance values, first and second indicators representing
10 respective minimum and maximum values, and a third indicator representing the current relevance value within the minimum and maximum values for an entity or category, the first and second indicators being movable along the graph by user-interaction with the touch-sensitive display to operate the manual setting system.

15 25. A method according to any of claims 17 to 24, wherein the content provider is a social network and the content is associated at the content provider with at least one of plural entities by having been posted by an entity.

26. A computer program comprising instructions that when executed by
20 computer apparatus control it to perform the method of any of claims 17 to 24.

27. A non-transitory computer-readable storage medium having stored thereon computer-readable code, which, when executed by computing apparatus, causes the computing apparatus to perform a method comprising:

25 allowing a user to communicate with a remote content provider and to receive content therefrom, content being associated at the content provider with at least one of plural entities or categories;

enabling a user manually to set a relevance setting for each of at least one of the plural entities or categories, and storing the relevance settings;

30 receiving user activity data, the user activity data relating to interaction of a user with the plural entities or categories or content relating to the plural entities or categories; and

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using the user activity data and the manually set relevance setting automatically to calculate a system-calculated relevance setting for each of the at least one of the entities or categories.

5 28. Apparatus, the apparatus having at least one processor and at least one memory having computer-readable code stored thereon which when executed controls the at least one processor:

to allow a user to communicate with a remote content provider and to receive content therefrom, content being associated at the content provider with at
10 least one of plural entities or categories;

to enable a user manually to set a relevance setting for each of at least one of the plural entities or categories, and to store the relevance settings;

to receive user activity data, the user activity data relating to interaction of a user with the plural entities or categories or content relating to the plural entities or
15 categories; and

to use the user activity data and the manually set relevance setting automatically to calculate a system-calculated relevance setting for each of the at least one of the entities or categories.

20 29. Apparatus comprising:

means for allowing a user to communicate with a remote content provider and to receive content therefrom, content being associated at the content provider with at least one of plural entities or categories;

means for enabling a user manually to set a relevance setting for each of at
25 least one of the plural entities or categories, and storing the relevance settings;

means for receiving user activity data, the user activity data relating to interaction of a user with the plural entities or categories or content relating to the plural entities or categories; and

means for using the user activity data and the manually set relevance setting
30 automatically to calculate a system-calculated relevance setting for each of the at least one of the entities or categories.

- 30 -

30. Apparatus comprising:

a communications system configured to allow a user to communicate with a remote social network and receive therefrom content posted by entities associated with the user in the social network;

5 a user settings system configured to enable a user manually to set a relevance setting for each of at least one of the plural entities, and to store the relevance settings;

a user interaction system configured to receive user activity data in relation to an entity's profile or activity data at the social network;

10 a relevance calculating system configured to use the user activity data and the manually set relevance setting automatically to calculate a system-calculated relevance setting for each of the at least one of the entities;

a data retrieval system configured to request from the social network a subset of content provided, by, or related to, the associated entities, the requested
15 subset for each of the at least one of the entities being determined in accordance with the system-calculated relevance setting for the corresponding entity; and

a user interface system configured to cause display of the requested subset of content received by the communications module from the social network.

20 31. Apparatus comprising:

a communications system configured to allow a user to communicate with a remote social network and receive therefrom content posted by entities associated with the user in the social network;

25 a user settings system configured to enable a user manually to set a relevance setting for each of at least one of the plural entities, and to store the relevance settings;

a user interaction system configured to receive user activity data in relation to an entity's profile or activity data at the social network;

30 a relevance calculating system configured to use the user activity data and the manually set relevance setting automatically to calculate a system-calculated relevance setting for each of the at least one of the entities;

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a data ordering system configured to order content received from the social network relating related to the associated entities, the ordering being determined in accordance with the system-calculated relevance settings for the entities; and

a user interface system configured to cause display of the ordered content.

5

32. Apparatus according to claim 30 or claim 31, wherein the relevance calculating system uses a predetermined algorithm for determining the updated relevance value using locally-stored user activity data representing the user's interaction history over a period of time.

10

33. Apparatus according to of claims 30 to 32, wherein the relevance calculating system is responsive to a change in the relevance setting made manually using the user settings system to constrain the amount of change made subsequently to the relevance value in the opposite direction by the relevance update system.

15

34. Apparatus according to claim 33, wherein the relevance calculating system is configured to constrain the amount of change to be less than the amount of change in the opposite direction made manually using the user settings system.

20

35. Apparatus according to claim 30 or claim 31, wherein the user settings system is configured to enable manual setting and local storage of minimum and maximum relevance values for each of the at least one of the entities, and wherein the relevance calculating system is configured to constrain the system-calculated relevance setting to reside between the minimum and maximum values.

25

36. Apparatus according to any of claims 31 to 35, wherein the user interface is configured to generate and present on the screen a visual indication of at least one entity and their system-calculated relevance setting.

30

37. Apparatus according to claim 36, further comprising a touch-sensitive display through which the user interface system enables the manual setting means to be operated through touch commands or gestures.

38. Apparatus according to claim 37, wherein the user interface system is configured to display a graph indicative of at least three selectable relevance values for an entity, and an indicator representing the current relevance value, the indicator
5 being movable on the graph by user-interaction with the touch-sensitive display.

39. Apparatus according to claim 38, wherein the user interface system is configured to display on a common graph a respective indicator for each one of a plurality of entities.

10

40. Apparatus according to claim 36 or claim 37, wherein the user interface is configured to display a graph indicative of at least three selectable relevance values, first and second indicators representing respective minimum and maximum values, and a third indicator representing the current relevance value within the minimum
15 and maximum values for an entity, the first and second indicators being movable along the graph by user-interaction with the touch-sensitive display to operate the manual setting system.

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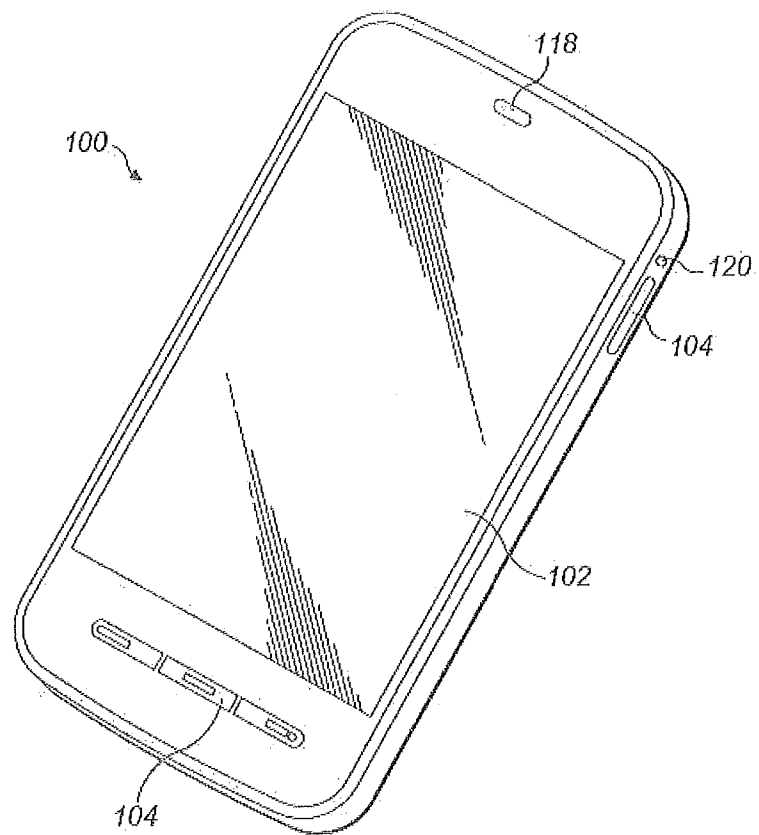
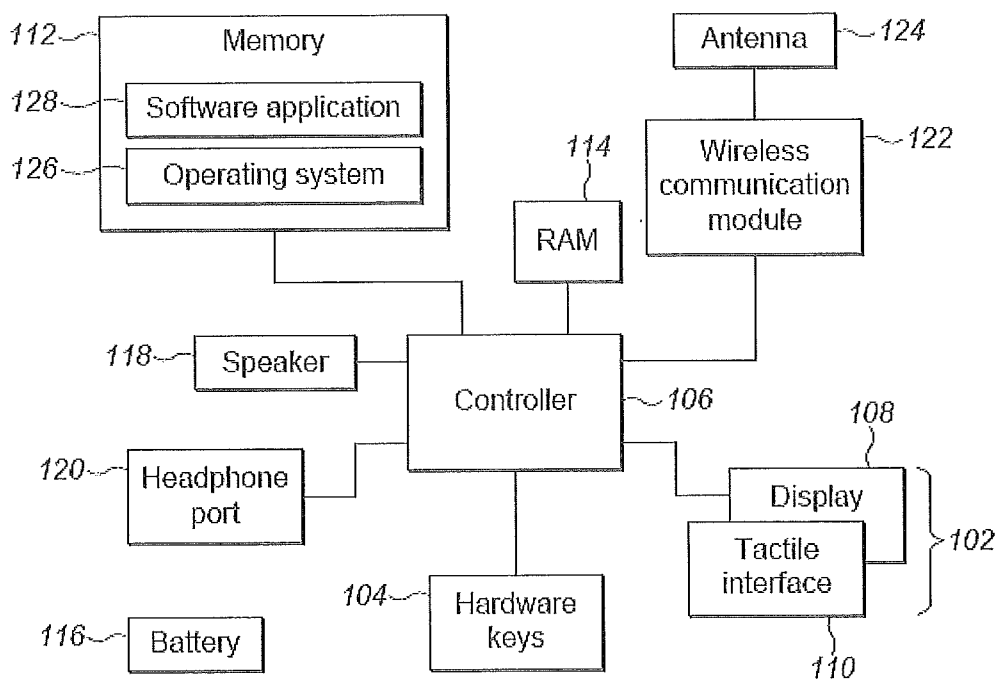


FIG 1.

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**FIG. 2**

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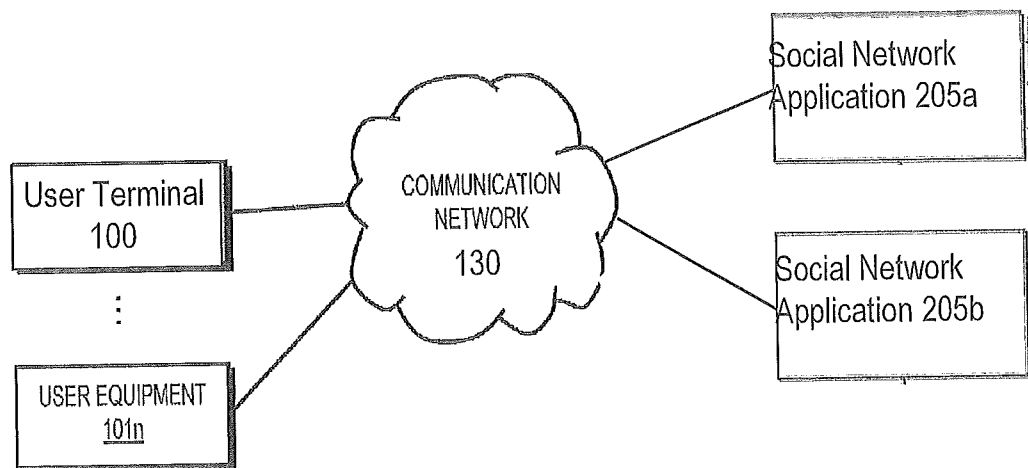


FIG 3.

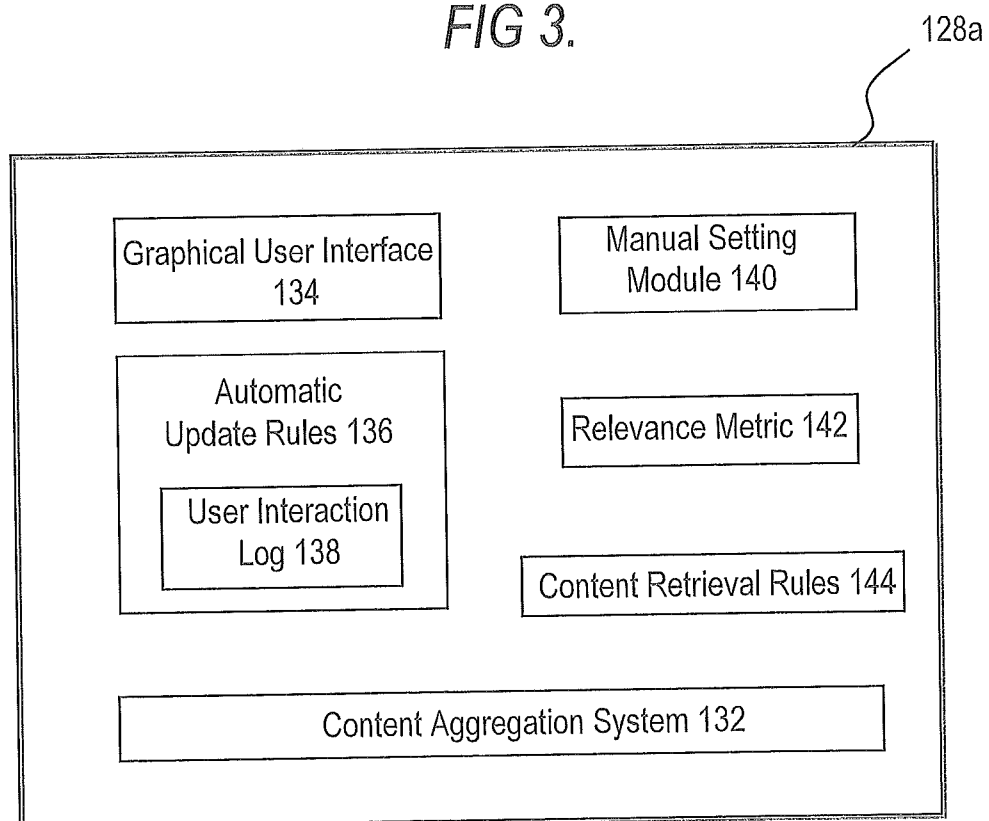


FIG 4.

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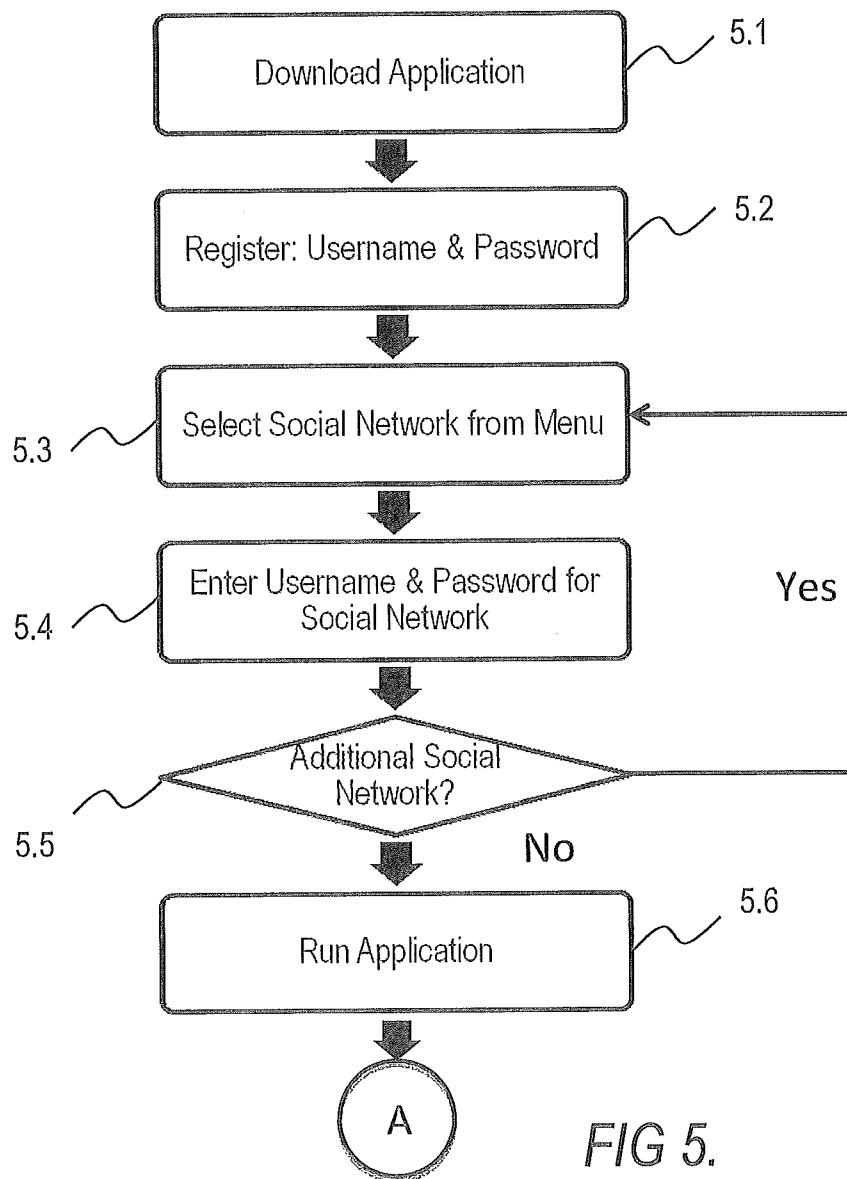


FIG 5.

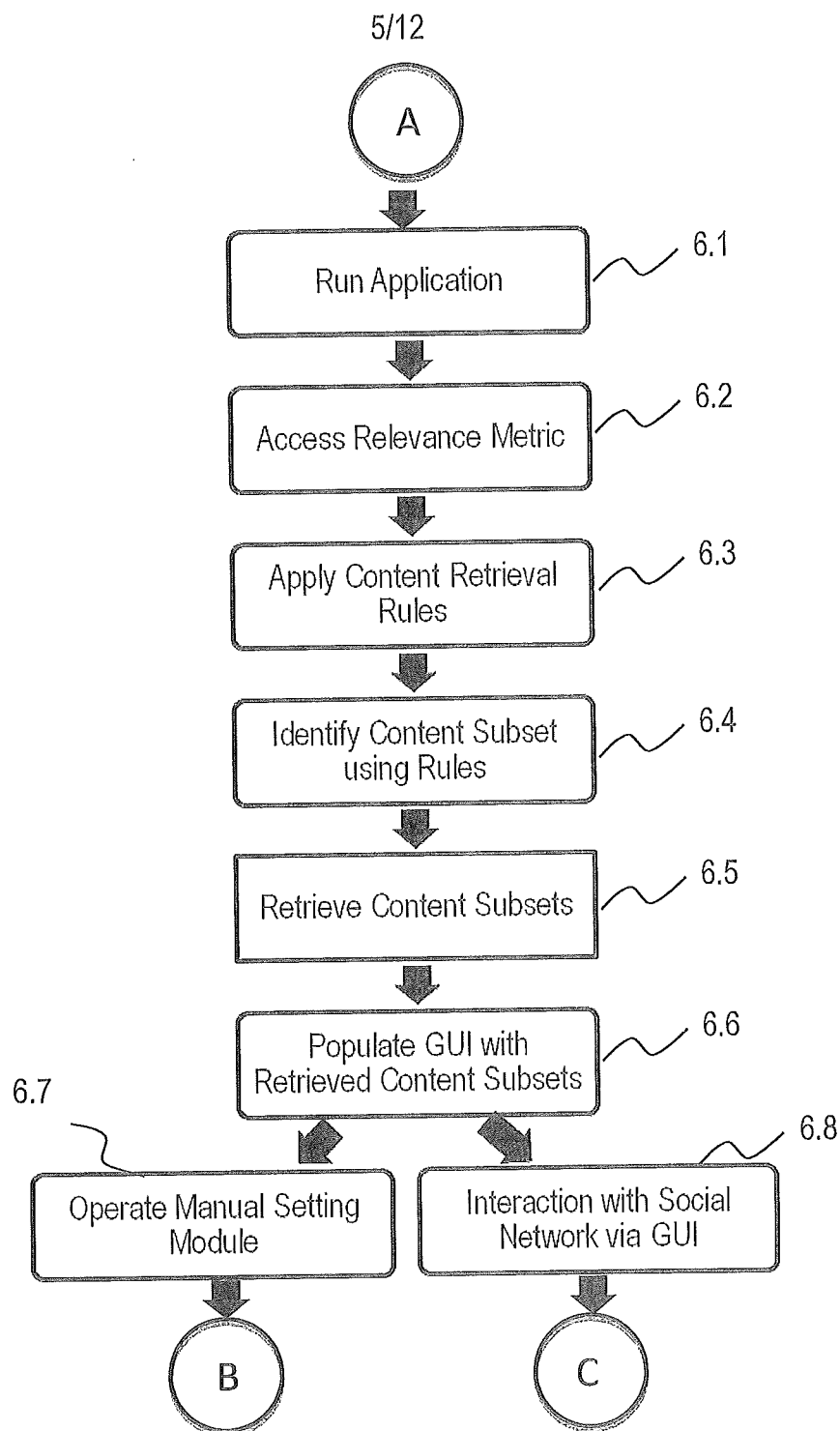
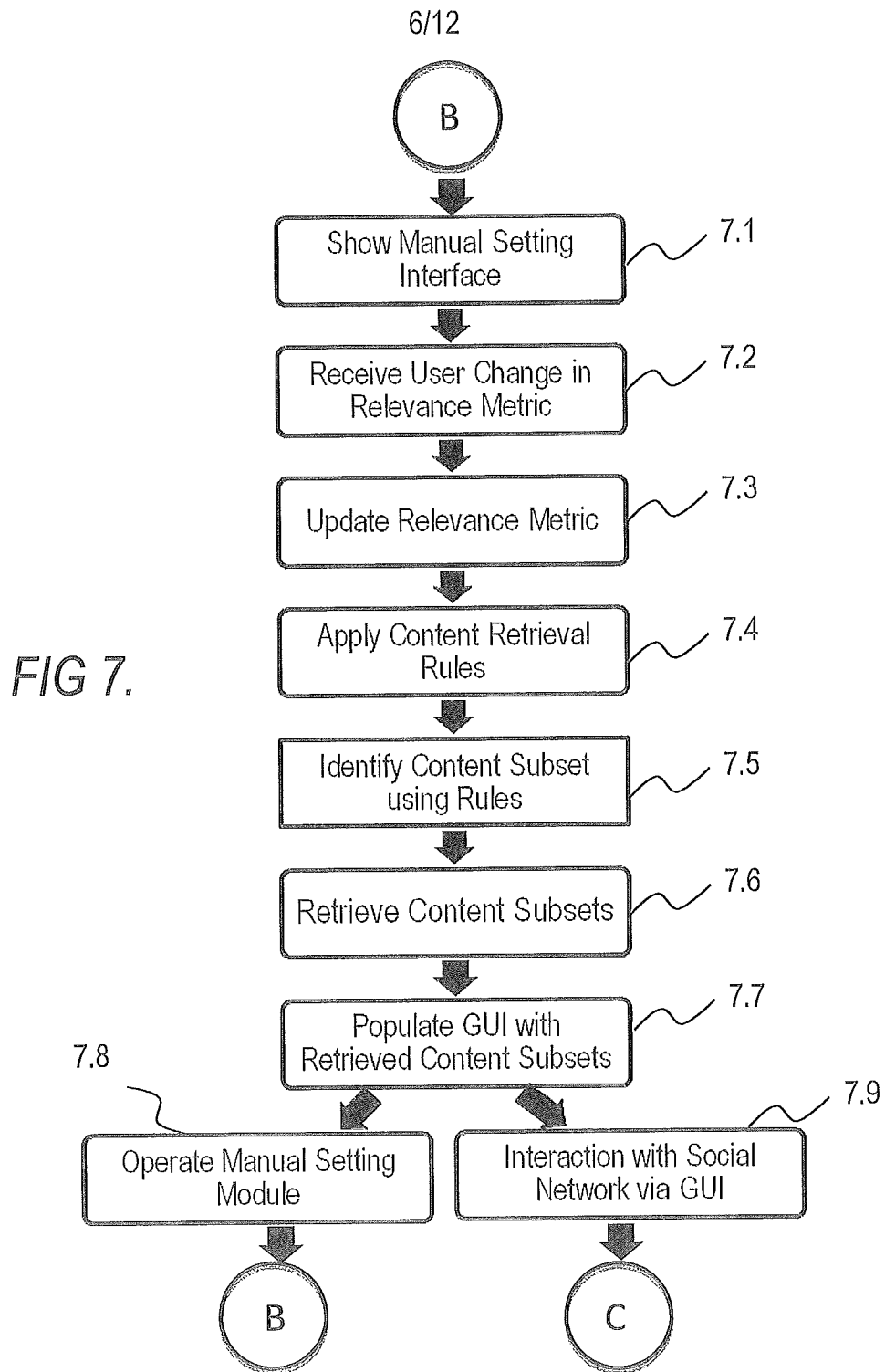
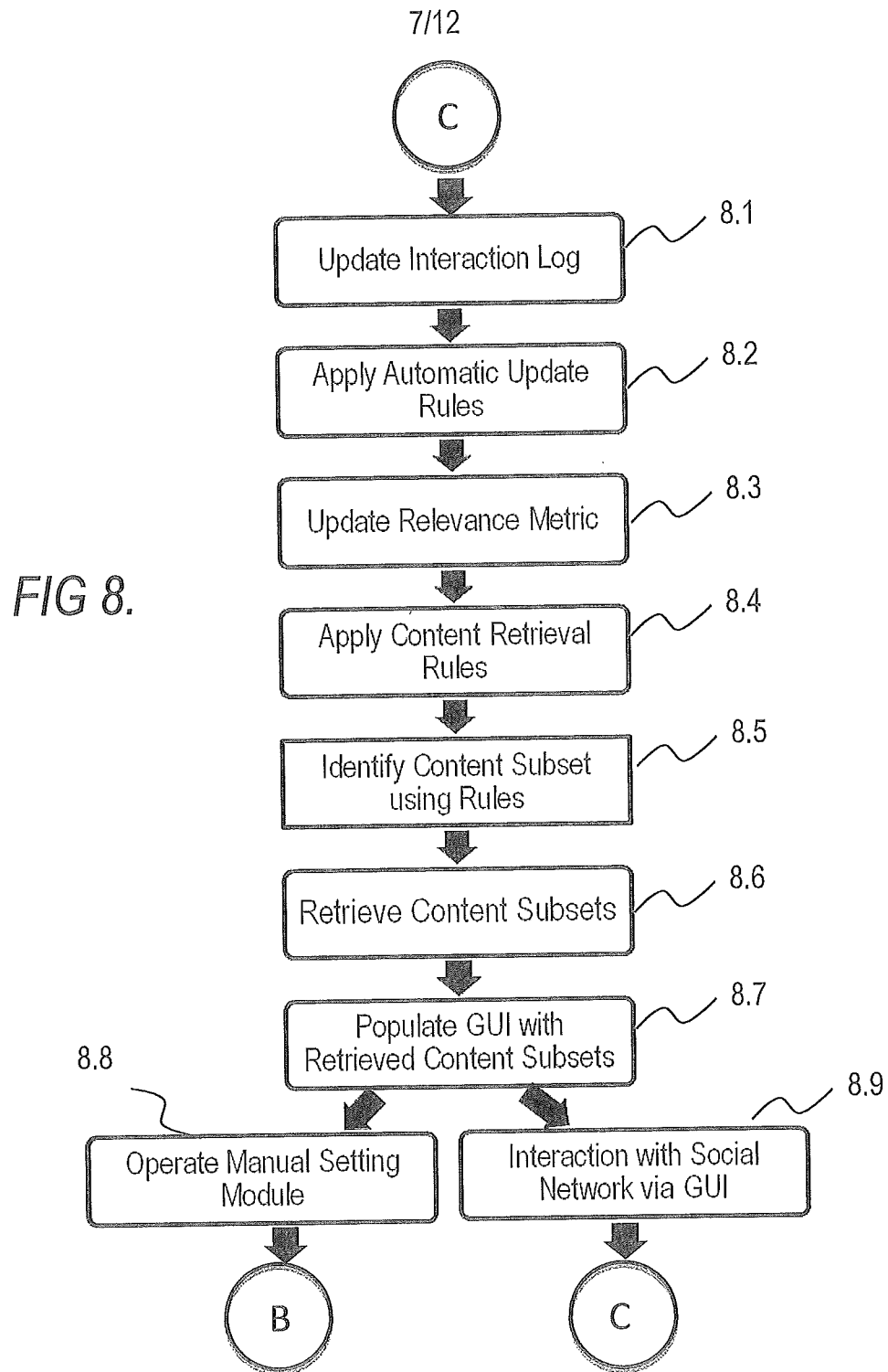
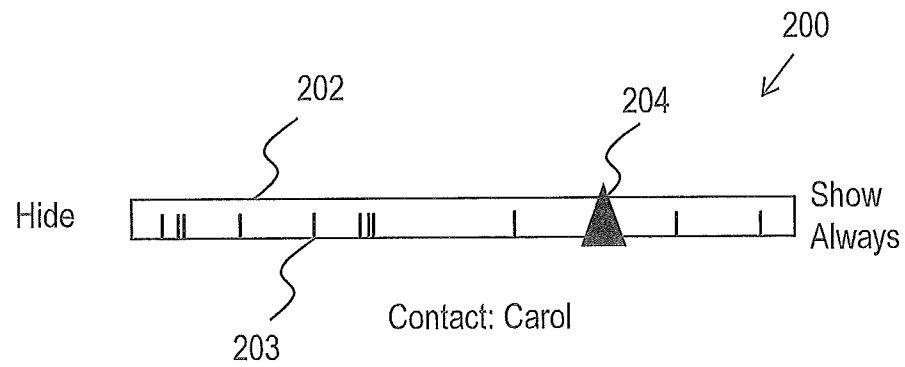


FIG 6.

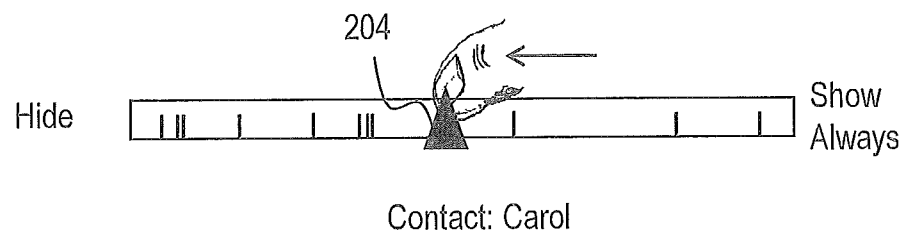




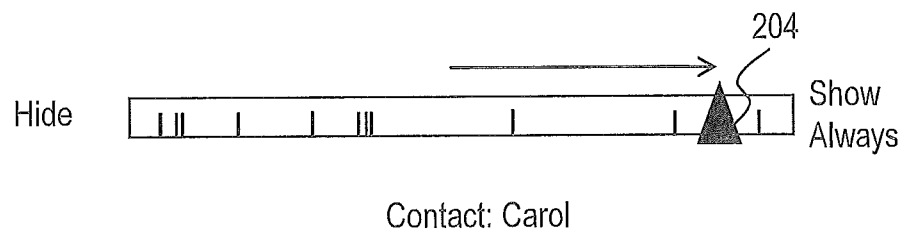
8/12



(a)



(b)



(c)

FIG 9.

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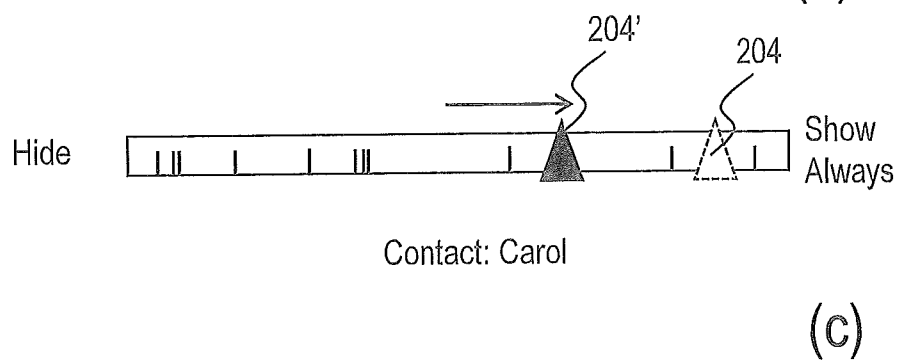
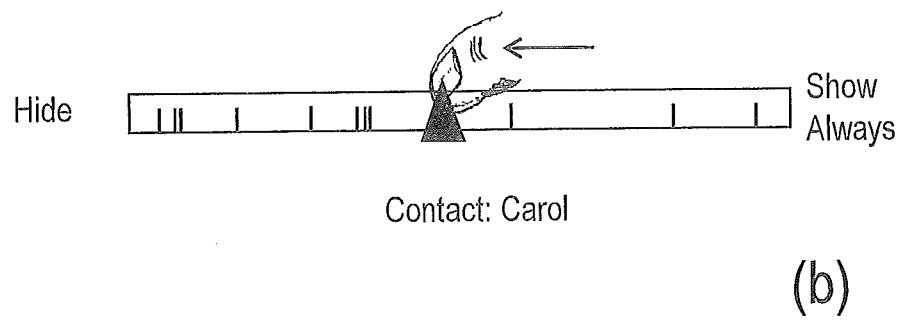
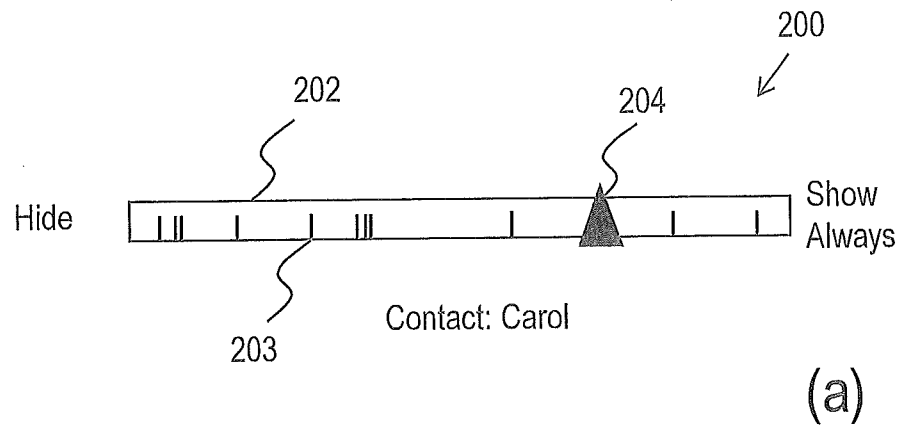


FIG 10.

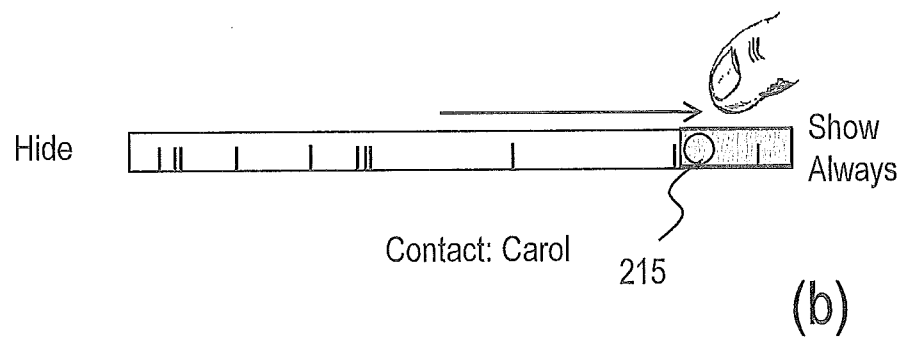
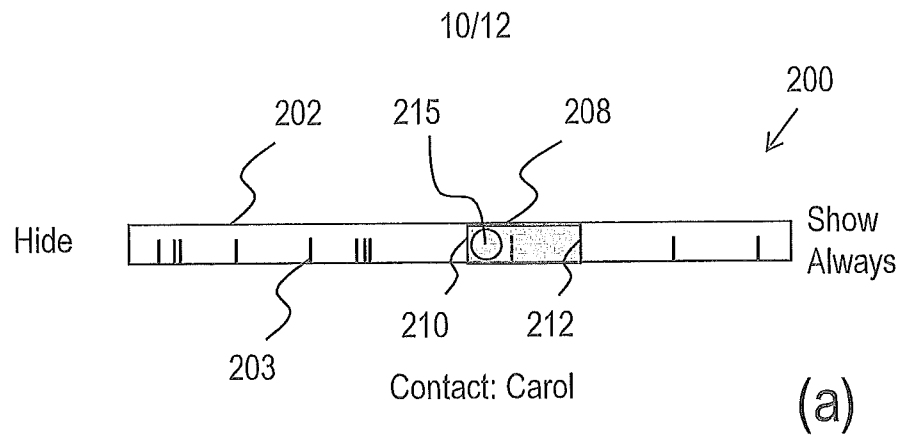
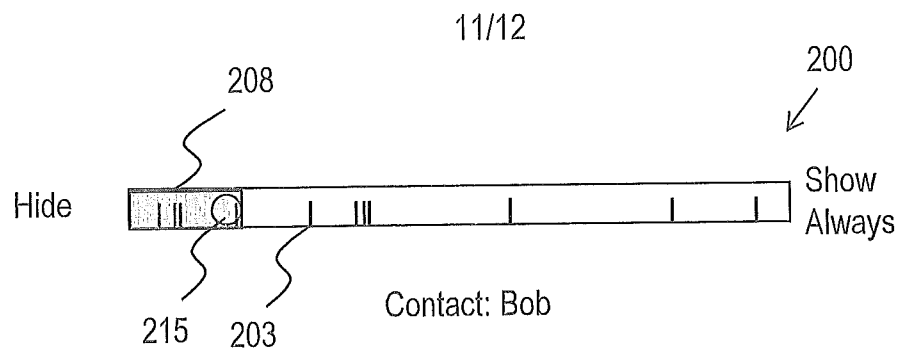
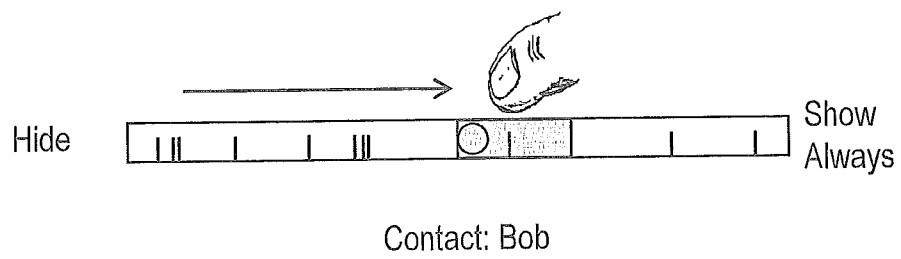


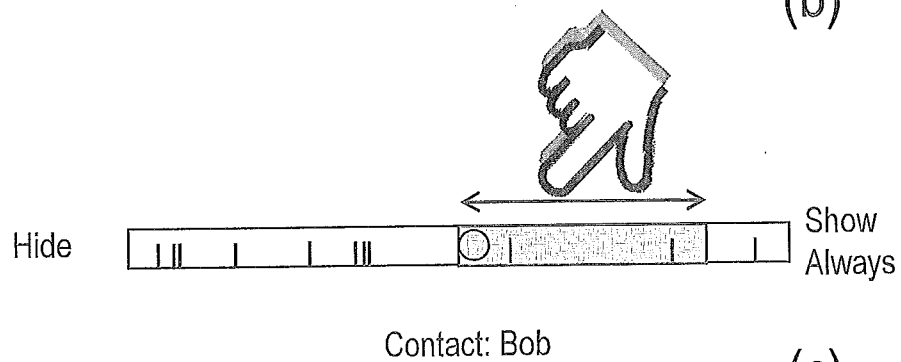
FIG 11.



(a)



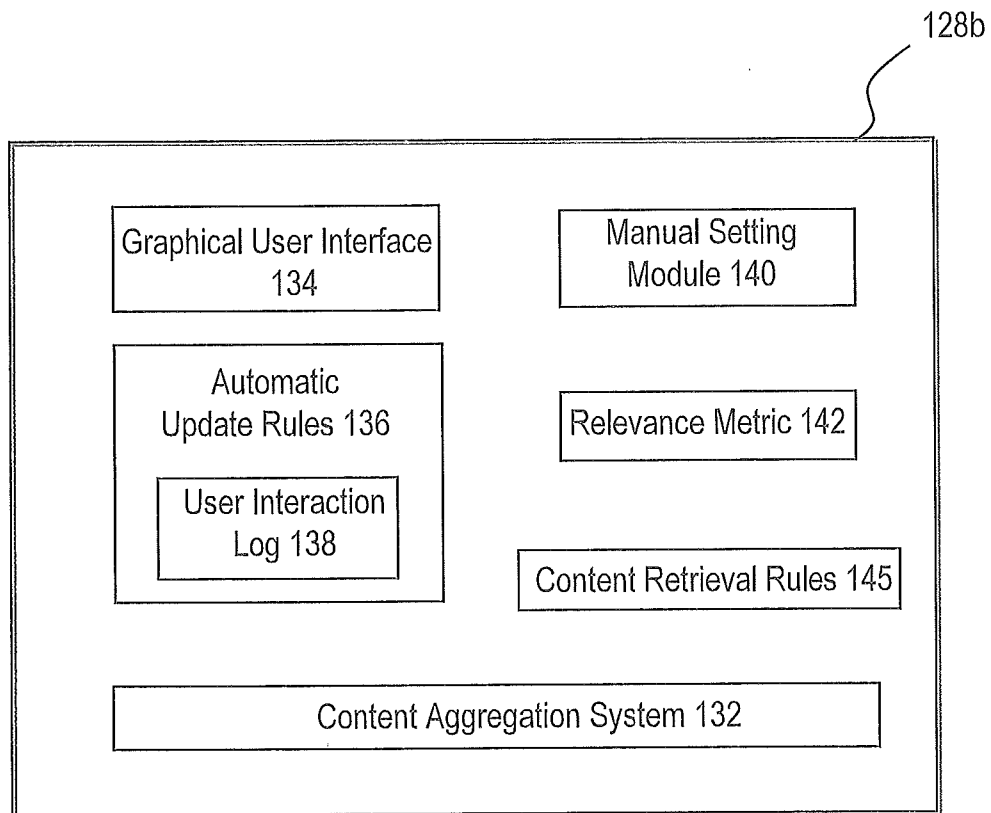
(b)



(c)

FIG 12.

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*FIG 13.*

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G06Q 99/00 (2011.01)

USPC - 705/319

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)
USPC: 705/319

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
IPC: G06Q 99/00; USPC: 705/14.49; 705/319; 709/217; 707/749; 707/E17.064 (keyword limited; terms below)

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

PubWEST (USPT, PGPB, EPAB, JPAB); Google Scholar; Google Patents

Keywords: Remote content; relevance; user settings; activity; visual indicator; social networking

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2010/0287033 A1 (MATHUR) 11 November 2010 (11.11.2010), entire document, especially; para [0005], [0006], [0020], [0025]-[0027], [0029]-[0031], [0037], [0039]-[0047], [0055]	1-5, 17-21, 27-31 ----- 22-24
Y	US 2008/0214157 A1 (RAMER et al.) 04 September 2008 (04.09.2008), entire document, especially; para [0005], [0048], [0090], [0100]	22-24
A	US 2010/0031162 A1 (WISER et al.) 04 February 2010 (04.02.2010), entire document	1-5, 17-24, 27-31
E	US 2011/0153421 A1 (NOVIKOV et al.) 23 June 2011 (23.06.2011), entire document	1-5, 17-24, 27-31
E	US 2011/0225170 A1 (OBASANJO et al.) 15 September 2011 (15.09.2011), entire document	1-5, 17-24, 27-31

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"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

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

28 October 2011 (28.10.2011)

Date of mailing of the international search report

10 NOV 2011

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-3201

Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 11/52057

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☒ Claims Nos.: 6-16, 25-26, 32-40
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.