

# Technical Disclosure Commons

---

Defensive Publications Series

---

December 15, 2017

## AUTOMATIC CREATION OF COMMUNICATION CHANNELS AROUND DETECTED EVENTS

n/a

Follow this and additional works at: [http://www.tdcommons.org/dpubs\\_series](http://www.tdcommons.org/dpubs_series)

---

### Recommended Citation

n/a, "AUTOMATIC CREATION OF COMMUNICATION CHANNELS AROUND DETECTED EVENTS", Technical Disclosure Commons, (December 15, 2017)  
[http://www.tdcommons.org/dpubs\\_series/1010](http://www.tdcommons.org/dpubs_series/1010)



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.

## **AUTOMATIC CREATION OF COMMUNICATION CHANNELS AROUND DETECTED EVENTS**

### **ABSTRACT**

Methods, systems, and apparatus, including computer programs encoded on a computer storage medium, for receiving user data, the user data including digital content generated by one or more users of one or more computer-implemented services, detecting, based on the user data, an occurrence of an event, identifying a plurality of users associated with the event, generating a communication channel based on the detected event, the communication channel providing a distribution for sending digital content, adding user identifiers to the communication channel, each user identifier being associated with a user of the plurality of users, and distributing digital content associated with the detected event in view of the communication channel. Other implementations of these aspects include corresponding systems, apparatus, and computer programs, configured to perform the actions of the methods, encoded on computer storage devices.

### **TECHNICAL FIELD**

This specification generally relates to the creation of communication channels based on detected events.

### **BACKGROUND**

Often, people that attend an event wish to communicate with other event attendees after the event has concluded. For example, individuals may wish to distribute photos taken at a wedding or a birthday party to others who attended the same event. Similarly, people may also

wish to share comments, news articles and other types of digital content with other event attendees. The Internet has made electronic distribution of such content much easier. For example, people can distribute such content using electronic messaging services, image sharing services and/or social networking services.

## SUMMARY

In general, aspects of the subject matter described in this disclosure may be embodied in methods that include the actions of receiving user data, the user data including digital content generated by one or more users of one or more computer-implemented services, the one or more computer-implemented services including at least one of an electronic messaging service, a chat service, an image sharing service, a document sharing service, a calendar sharing service and/or a social networking service, detecting, based on the user data, an occurrence of an event, the event including interaction between at least two users of the one or more users, identifying a plurality of users associated with the event, each user of the plurality of users interacting with the one or more computer-implemented services, generating a communication channel based on the detected event, the communication channel providing a distribution for sending digital content using at least one of the computer-implemented services, adding user identifiers to the communication channel, each user identifier being associated with a user of the plurality of users, and distributing, using the at least one computer-implemented service, digital content associated with the detected event in view of the communication channel. Other implementations of these aspects include corresponding systems, apparatus, and computer programs, configured to perform the actions of the methods, encoded on computer storage devices.

Aspects of the subject matter described in this disclosure may also be embodied in methods that include the actions of receiving user data, the user data including digital content generated by one or more users of one or more computer-implemented services, detecting, based on the user data, an occurrence of an event, identifying a plurality of users associated with the event, generating a communication channel based on the detected event, the communication channel providing a distribution for sending digital content, adding user identifiers to the communication channel, each user identifier being associated with a user of the plurality of users, and distributing digital content associated with the detected event in view of the communication channel. Other implementations of these aspects include corresponding systems, apparatus, and computer programs, configured to perform the actions of the methods, encoded on computer storage devices.

These and other implementations may each optionally include one or more of the following features: receiving user data comprises receiving digital content uploaded by a first user of a computer-implemented service; the digital content includes a plurality of digital images; detecting the occurrence of an event includes determining that images of the plurality of digital images correspond to one another; identifying a plurality of users associated with the event includes processing digital content posted to user pages associated with users of the social networking service that are socially related to the first user; identifying a plurality of users associated with the event includes processing digital content posted to each user page hosted by the social networking service; detecting an occurrence of an event includes processing metadata associated with a plurality of digital images and determining that two or more of the images correspond to one another; determining that two or more of the images correspond to one another includes determining that the two or more images were taken within a predetermined time

threshold of one another; determining that two or more of the images correspond to one another includes determining that the two or more images share similar titles or keyword identifiers; actions further include, in response to detecting an occurrence of an event, identifying digital content associated with the event; generating a communication channel includes generating a social grouping; and the one or more computer-implemented services include at least one of an electronic messaging service, a chat service, an image sharing service, a document sharing service, a calendar sharing service and/or a social networking service.

Particular implementations of the subject matter described in this specification may be used to realize the following, example advantage: users participating in computer-implemented services can communicate with one another through communication channels that are automatically created around events attended by the users.

The details of one or more implementations of the subject matter described in this specification are set forth in the accompanying drawings and the description below. Other potential features, aspects, and advantages of the subject matter will become apparent from the description, the drawings, and the claims.

## DESCRIPTION OF THE DRAWINGS

FIG. 1 depicts an example system that can be used to execute implementations of the present disclosure.

FIG. 2 is a diagram of an example social network including social groupings.

FIG. 3 depicts an example environment for event detection.

FIG. 4 depicts an example graphical user interface for creating, editing and/or maintaining social groupings.

FIG. 5 depicts an example user interface for managing an email account.

FIG. 6 is a flowchart illustrating an example process for creating communication channels around detected events.

Like reference numbers represent corresponding parts throughout.

## DETAILED DESCRIPTION

Implementations of the present disclosure are directed to creating communication channels around detected events. In some implementations, user data is processed and the occurrence of an event is detected. In some examples, the event is detected based on digital content included in the user data. In some examples, detected events can include social events (e.g., parties and weddings) and professional/academic events (e.g., meetings, retreats, and training/study sessions). Detected events can include planned events with socially related or unrelated attendees (e.g., flash-mobs, festivals, concerts, and sporting events) as well as unplanned events. In some implementations, detected events can include occurrences that transpire in either a physical environment and/or a virtual environment. For example, a detected event can be a conference taking place in a hotel ballroom and/or a video conference hosted by one or more remote servers.

A communication channel can be generated in response to the detected event. Example communication channels can include a group of identified users within the context of a computer-implemented service. In some examples, a communication channel can include a social grouping in a social networking service and a contact list for use in an email service and/or a chat service. The communication channel is populated with users identified as being associated with the detected event. The communication channel can be utilized by users to distribute

appropriate digital content (e.g., digital content associated with the detected event) to one or more of the identified users.

In situations in which certain implementations discussed herein may collect or use personal information about users (e.g., user data, information about a user's social network, user's location and time at the location, user's biometric information, user's activities and demographic information), users are provided with one or more opportunities to control whether information is collected, whether the personal information is stored, whether the personal information is used, and how the information is collected about the user, stored and used. That is, the systems and methods discussed herein collect, store and/or use user personal information specifically upon receiving explicit authorization from the relevant users to do so. For example, a user is provided with control over whether programs or features collect user information about that particular user or other users relevant to the program or feature. Each user for which personal information is to be collected is presented with one or more options to allow control over the information collection relevant to that user, to provide permission or authorization as to whether the information is collected and as to which portions of the information are to be collected. For example, users can be provided with one or more such control options over a communication network. In addition, certain data may be treated in one or more ways before it is stored or used so that personally identifiable information is removed. As one example, a user's identity may be treated so that no personally identifiable information can be determined. As another example, a user device's geographic location may be generalized to a larger region so that the user's particular location cannot be determined.

FIG. 1 depicts an example network architecture 100 that can be used to execute implementations of the present disclosure. The network architecture 100 includes a number of

client devices 102-110 communicably connected to a server device 112 by a network 114. The server device 112 includes a processing device 116 and a data store 118. The processing device 116 executes computer instructions (e.g., program code) stored in the data store 118 to perform functions.

In some implementations, the client devices 102-110 can be computing devices such as laptop or desktop computers, smartphones, personal digital assistants, portable media players, tablet computers, or other appropriate computing devices. In some implementations, the server device 112 can be a single computing device such as a computer server. In some implementations, the server device 112 can represent a plurality of computing device (e.g., a server farm). In some examples, server computing device working together to perform the actions of a server computer (e.g., cloud computing). In some implementations, the network 114 can be a public communication network (e.g., the Internet, cellular data network, dialup modems over a telephone network) or a private communications network (e.g., private LAN, leased lines).

A number of users 120a-120e of the client devices 102-110, respectively, access the server device 112 to use one or more computer-implemented services provided by one or more service providers. For example, the client devices 102-110 can execute web browser applications that can be used to access the services. In another example, the client devices 102-110 can execute software applications that are specific to the services (e.g., “apps” executing on smartphones). Example computer-implemented services can include an electronic messaging service, a chat service, an image sharing service, a document sharing service, a calendar sharing service and/or a social networking service.

The users 120a-120e can interact with the services using the respective client devices 102-110. For example, the users can participate in a social networking service hosted by the



server device 112 by posting information, such as text comments (e.g., updates, announcements, replies), digital photos, videos, and/or other appropriate digital content. In some implementations, information can be posted on a user's behalf by systems and/or services external to the social network or the server device 112. For example, the user 120a may post a review of a movie to a movie review website, and with proper permissions that website may cross-post the review to the social network on the user's 120a behalf. In another example, a software application executing on a mobile device, with proper permissions, may use global positioning system (GPS) capabilities to determine the user's location and automatically update the social network with his location (e.g., "At Home", "At Work", "In City A, State").

An example social networking service can enable users to group contacts into social groupings for sharing of digital content. For example, users 120a-120e interacting with the client devices 102-110 can use the social networking service hosted by the server device 112 to define one or more social groupings. In some examples, the social groupings can be used to organize and categorize the users' 120a-120e relationships to other users of the social network. Examples of the creation and use of social groupings are provided in the description of FIG. 2. A social grouping can function as a communication channel for distributing digital content to members of the social grouping.

Communication channels can be established in other computer-implemented services. For example, an email group can be a communication channel within an email service, the email group identifying one or more email addresses to which an email can be sent. As another example, a chat group can be a communication channel within a chat service, the chat group identifying one or more contacts with which an instant messaging conversation can be conducted. As another example, a document group can be a communication channel within a

document sharing service, the document group identifying one or more users that are able to access a document.

As noted above, in some implementations, communication channels can be provided in the form of social groupings that are integrated in a social networking environment. In general, social groupings are categories or groupings to which a user can assign their contacts (e.g., members of a social network in which the user belongs, other contacts of the user) and better control the distribution and visibility of digital content (e.g., social networking posts). A social grouping can be provided as a data set defining a collection of contacts that may have some association with one another. Generally, a social grouping can be described from the perspective of an individual that is the center of a particular collection of socially interconnected people, or from the aggregate perspective of a collection of socially interconnected people. In some implementations, a social grouping can have narrowly defined boundaries, all of the members of the social grouping are at least familiar with one another, and permission may be required for a member to join a social grouping. In some implementations, a social grouping can have broadly defined boundaries where, for example, none of the members are familiar with one another, but there is a commonality between all members (e.g., ride the same bus, are at the same location, are attending the same event, frequent the same locations, partake in the same activities).

In some implementations, a social grouping provides a distribution list within a social networking environment that defines which users receive or are otherwise allowed to access digital content. Example digital content can include textual content (e.g., posted text), status updates (e.g., busy, available, offline, check-in status), images, videos, hyperlinks and the like. In some implementations, the digital content can include a corresponding access control list (ACL),

discussed in further detail below, that defines which users are to receive and/or are able to access the digital content.

Through the creation and use of social groupings, the user can organize and categorize contacts into various different groupings that can be used to control the visibility and access those contacts have to the user's digital content (e.g., postings, digital pictures, videos, audio files, hyperlinks (e.g., uniform resource indicators (URIs)), and/or other content associated with the user's social networking profile). In some examples, the user can post an update or photo associated with an event to only an "event" grouping, and spare other contacts from seeing information that may not be relevant to them.

FIG. 2 is a diagram of an example social network 200 including social groupings. A user 202 is a member of a social network that supports the creation and use of social groupings (e.g., the social network provided by the server device 112 of FIG. 1). In the present example, the user 202 has a number of contacts 204a-204i with which the user 202 can have some form of direct or indirect social relationship (e.g., friends, friends-of-friends, coworkers, customers, teammates, clients, relatives, club members, classmates). The user 202 categorizes the contacts 204a-204i by assigning them to one or more social groupings, such as a social grouping 210, a social grouping 220, and a social grouping 230.

The social grouping 210 is a personal social grouping. In some implementations, personal social groupings are groupings created by and may be known only to the user 202 (e.g., the contacts 204a, 204b may receive no indication that they are in the user's 202 personal social grouping 210). In some implementations, personal social groupings are groupings created by the user 202 and may be known to the user 202 as well as the contacts (e.g., contacts 204a, 204b)

that are members of the social grouping (e.g., the contacts 204a, 204b receive an indication that they have been added to the personal social grouping 210).

In some implementations, personal social groupings may be used to organize and categorize the contacts 204a-204i in ways that are relevant to the user 202. In some implementations, the user 202 may use personal social groupings to organize contacts in order to discretely target which of his contacts 204a-204h will see certain postings or have access to particular information. For example, the user 202 may be planning a surprise party for a small group of friends. As such, the user can organize contacts into “Surprise Party Attendees” and “Surprise Party Honorees” personal social groupings. By doing so, the user 202 may better target selected postings to the friends attending and/or helping to plan the surprise party (i.e., Surprise Party Attendees), while targeting selected postings to friends that are to be honored at the surprise party (i.e., Surprise Party Honorees) to maintain the integrity of the surprise.

The social grouping 220 is a shared private social grouping, which may also be referred to simply as a shared grouping. In general, shared private social groupings are social groupings that the user 202 creates and invites contacts to voluntarily join. Contacts that accept the invitation become members of the shared private social grouping. Members of a shared private social grouping can see information posted to that grouping by the user 202 and can post information to be shared with other members of the shared private social grouping. For example, the user 202 may tend to post a large number of jokes to the social network. However, while some of the contacts 204a-204i may find the jokes to be entertaining, others may find them to be simply annoying. Realizing this, the user 202 may create a “jokes” shared private social grouping and invite some or all of the contacts 204a-204i to join. With the “jokes” social grouping in place, the user 202 may post witticisms to the “jokes” grouping, and only those

contacts who have accepted the invitation are able to see the user's 202 comicality. Similarly, members of the shared private social grouping are able to post messages to the grouping, and those posts are visible to other members of that grouping.

The social grouping 230 is a shared public social grouping. In general, shared public groupings are social groupings that the user 202 creates, and invites contacts to voluntarily join. Further, the existence of a shared public grouping is publicly available such that other users of the social networking service (e.g., not necessarily just the user's 202 contacts 204a-204i) may request to join the public social grouping. Members of shared public groupings may post information to, and see updates posted by, other members of the same public shared grouping. In some implementations, public shares groupings may be "fan" or "group" groupings (e.g., groupings dedicated to a particular place, event, product, movie, celebrity, sports team, company, concept, philosophy, organization, support network). For example, the user 202 may create a shared public grouping for his band, and fans of his act may join the grouping to discuss upcoming shows, download MP3s of the band's music, or post videos from recent concerts. In another example, the user 202 may create a shared public grouping for alumni of his high school graduating class, which his former classmates may find and join in order to stay in touch with one another and post pictures from their school days. Once a shared public grouping is created, in some implementations the user 202 can invite people to join the grouping. In some implementations, nonmembers of the grouping can request membership in the shared public grouping, and membership in a shared public grouping may be automatic upon request, or may require the user's 202 approval to become members of the shared public grouping.

Implementations of the present disclosure are directed to creating communication channels based on detected events. In some implementations, user data is processed and the

occurrence of an event is detected. In some examples, the occurrence can include a past occurrence (i.e., the event has already occurred), the event can include a current occurrence (i.e., the event is in progress), and the occurrence can include a future occurrence (i.e., the event is scheduled to occur). In some implementations, a communication channel is generated in response to the detected event and is associated with the event. The communication channel is populated with users identified as being associated with the detected event. In some examples, the communication channel can be utilized to distribute appropriate digital content (e.g., digital content associated with the detected event).

Implementations of the present disclosure can generate one or more communication channels based on user data. In some implementations, the user data that is used to detect an event and to generate an associated communication channel includes user data that is specifically authorized by one or more users for such use. For example, one or more users (e.g., users that are associated with events) can authorize their respective user data to be used for detecting an event and for generating a communication channel, as discussed herein. In some examples, the user data can include digital content distributed using one or more of a social networking service, a document sharing service, a chat service and/or an email service.

An example context includes user data generated and shared amongst users using a social networking service. Implementations of the present disclosure will be discussed with reference to user data from a social networking service. It is appreciated, however, that implementations of the present disclosure can be realized using user data from any appropriate computer-implemented services and combinations thereof.

To access user data generated using a social networking service, a social networking server (e.g., server device 112) can communicate with a local or remote database maintained by

the social networking service. The database can store digital content posted or otherwise published by users of the social networking service. In some implementations, the social networking server can receive digital content directly from users. As noted above, digital content can include text comments (e.g., personal updates, announcements, replies), digital images, videos, status updates (e.g., busy, available, offline, check-in status), and any other appropriate digital content.

The social networking server can process, analyze, and/or otherwise examine the accessible user data to detect the occurrence of an event. In some implementations, the social networking server can recognize the occurrence of an event based on digital images and/or metadata associated with the digital images. For example, the social networking server can be configured to infer that the existence of a number of closely related digital images is indicative of the occurrence of an event. In some examples, the social networking server can analyze metadata associated with digital images that are uploaded for publication by users to determine that a number of digital images correspond to one another, and therefore recognize or detect the occurrence of an event.

In some implementations, whether images correspond to one another can be determined based on image content and/or metadata associated with the images. By way of non-limiting example, image metadata of a first image can be compared to image metadata of a second image. If there is sufficient overlap in metadata, the first and second images can be deemed to correspond to one another.

In some examples, image metadata can include information appended to a digital image file that describes one or more aspects of the image. For example, image metadata can include information describing how large the image is, the color depth and images resolution of the

image, where the image was taken, the owner of the image, people and/or items tagged in the image, and/or the device that generated the image. Other types of image metadata can include, for example, titles or keywords describing the image.

By way of a non-limiting example, User A attends a birthday party. In this example, the birthday party is defined as an event. User A takes ten photos (i.e., digital images) at the birthday party. User A subsequently uploads and posts the digital images to a user page provided by a social networking service. Image metadata appended to the uploaded digital image files can be processed by a social networking server to detect the occurrence of the birthday party event. For instance, the social networking server can determine that the uploaded images correspond to one another.

As noted above, image metadata can be used by the social networking server to detect the occurrence of an event. For example, analysis of the image metadata can indicate that the images uploaded by User A were taken in the same general location and within a time threshold of one another (e.g., one hour, two hours, thirty minutes, etc.). The social networking server can also utilize other types of image metadata to recognize the occurrence of an event. For example, image metadata of the images can share similar titles or keyword identifiers (e.g., “Jason’s Birthday Party ’08” or “Jason’s Bday Party ’08”). The image metadata can include similar, or identical, face tags to one another. Other appropriate types of image metadata, and suitable combinations of such metadata, can be utilized by the social network server to detect the occurrence of an event (e.g., geo-location metadata).

In some implementations, content with the digital images can be processed by the social networking server to detect the occurrence of an event. For instance, a common object or



landmark may be visible in each of a plurality images. This can indicate that the images correspond to one another.

The social networking server can detect the occurrence of an event from other types of published digital content. For example, text comments and videos (as well as metadata appended to digital video files) that have been posted to a computer-implemented social network can also be used to detect the occurrence of an event. For example, a plurality of users can post comments regarding an event that each user had attended, is attending or plans to attend. The comments can be processed to detect the event, and a communication channel can be generated and populated with the users that had posted comments.

In some implementations, the social networking server can identify users associated with a detected event. In some examples, users can be identified based on a distribution of digital content. For example, an occurrence of an event can be based on digital content distributed from one or more users to one or more other users within a social networking service. The one or more users and the one or more others users can be determined to be associated with the event. As another example, one or more users can interact with (e.g., comment on, endorse, re-share) digital content that has been used to detect an event. Users that have interacted with the digital content can populate an associated communication channel. As another example, an occurrence of an event can be determined based on an entry in a calendar, the calendar being shared by a plurality of users. The user that put the entry into the calendar and the plurality of users can be determined to be associated with the event.

Continuing with the example of a birthday party event attended by User A, the social networking server can be configured to identify other users who attended the birthday party with User A. In some implementations, the social networking server can identify such users by

further analyzing digital content included in the social networking data. For example, the social networking server can be configured to infer that other users tagged in the images uploaded by User A are associated with the birthday party event. As another example, users that comment on images uploaded by User A can be determined to be associated with the birthday party event. As another example, users that include a calendar entry corresponding to the birthday party event can be determined to be associated with the birthday party event.

In some examples, the social networking server can be configured to review images uploaded by other users of the social networking service to identify users associated with a detected event. For example, the social networking server can examine images recently uploaded by users who are socially connected to User A in the social networking service. In some examples, the social networking server can be configured to determine whether the other users recently uploaded images also corresponding to the detected event. Other digital content posted or otherwise published by other users can also be reviewed by the social networking server to identify users associated with a detected event.

As noted above, the social networking server generates a communication channel associated with the detected event and populates the communication channel with users identified as being associated with the detected event. The communication channel can include a social grouping (e.g., a personal social grouping, a shared private social grouping, and/or a shared public social grouping) or another type of contact list (e.g., an email contact list, an instant message contact list, a document sharing list, and/or a video conferencing contact lists). In some implementations, the communication channel can be generated and populated by the social networking server automatically, in response to identifying a plurality of users associated

with a detected event. In some implementations, the social networking server proceeds with such actions in response to a request initiated by a user.

A communication channel can be used to distribute digital content to one or more of the users populating the communication channel. For example, a communication channel based on the birthday party attended by User A can be utilized to distribute images, comments and/or other digital content pertaining to the birthday party. Distribution of digital content can be selective or exhaustive. In some examples, users populating the communication channel can receive all of the digital content recognized by the social networking server as being associated with a detected event. In some examples, distribution of digital content can be selective, such that users choose which content to share amongst users in the communication channel.

FIG. 3 depicts an example environment 300 for event detection. The example environment 300 includes an event detection system 302. The event detection system 302 can be implemented, for example, using a social networking server. Accordingly, in some examples, the event detection system 302 can be provided in the context of a social networking service. The social networking service can provide a webpage and/or a profile page (e.g., user pages 304 and 306) for respective users of the social networking service (e.g., users 104, 108 of FIG. 1). The user pages 304, 306 can be used to display information about the users 104, 108 that is posted, or otherwise published by the users 104, 108 through the social networking service. The user pages 304, 306 can also include photos, videos, or other digital content posted by the users 104, 108.

By way of a non-limiting example, each of the users 104, 108 takes several images while attending an event 320 using an appropriate mobile device (e.g., a digital camera and/or a smart phone). The users 104, 108 can upload the digital images to a social networking server. In some

examples, at some point after (or during) the event, the users 104, 108 can transfer the digital images from the mobile devices to respective user devices 110 and subsequently upload and publish digital image files 308, 310 to the user pages 304, 306 provided by [the]? social networking service. In some examples, the users 104, 108 can upload the digital images directly to the social networking server from the device used to generate the images (e.g., directly from a smartphone). The published digital image files 308, 310 can correspond to the images taken by the user 102, 106.

The event detection system 302 can automatically access the user pages 304, 306 to analyze the uploaded digital image files 308, 310. For example, the event detection system can access the user pages 304, 306 randomly or according to a schedule of predetermined time intervals. Through analysis of the digital image files 308, 310 the social networking server can detect the occurrence of event 320. For example, the social networking server can determine that the images of the digital image files 308 correspond to one another and/or that the images of the digital image files 310 correspond to one another. As noted above, the social networking server can be configured to detect the occurrence of an event by identifying a plurality of photos (e.g., two, five, or ten photos) that correspond to one another (e.g., images taken by the same user and/or other users within a time or location threshold of one another).

In response to detecting the occurrence of the event 320, the event detection system 302 can search for and identify other users associated with the event 320. For example, the event detection system 302 can access user page 304 and examine digital image files 308 to detect the occurrence of the event 320. In response to detection of the event 320, the event detection system 302 can subsequently access user pages associated with the user page 304. For example, the event detection system 302 can access user page 306, if the user 108 is socially related to the

user 106. In accessing the user page 306, the event detection system 302 can identify digital image files 308 and determine that the images correspond to the images of the image files 306. This relationship can be considered by the event detection system 302 as an indication that the images of the image files 306 and 308 are related to the same event. Accordingly, the event detection system 302 can infer that the user 108 is associated with the detected event 320.

In some implementations, the event detection system 302 can be configured to access all pages included in a corpus of the social networking service to identify all possible users associated with event 320. In some implementations, the search for users associated with event 320 can be limited. For example, the event detection system 302 can adhere to a prescribed search radius by only accessing user pages that are linked to the user page 304 (e.g., user pages assigned to users that are socially related to user 304). Other suitable search and user identification routines can also be used.

In this example, the event detection system has determined that the users 104, 108 are associated with the coincident event 320. Based on this determination, the event detection system 302 can create an appropriate communication channel 322 and populate the communication channel 322 with contact information related to the users 104, 108.

FIG. 4 depicts an example graphical user interface (GUI) 400 for creating, editing and/or maintaining social groupings. The GUI 400 can provide a social graph editor user interface (UI). In some implementations, the UI can be an interface presented by a purpose made social networking application, while in some implementations the UI can be one or more web pages of a social networking website displayed in a general purpose web browser.

The UI includes a number of selectable links presented in a menu bar 405. In the present example, the “Social Network” link has been selected by a user. This selection causes a web-

based social networking application to be executed and a social network menu 410 to be displayed. The social network menu 410 includes a profile indicator 412 in which information such as a user name 414 and a user image 416 associated with the currently logged in user (John Doe) are displayed.

The social network menu 410 also displays, among other items, a groupings submenu 418. The groupings submenu 418, when selected (e.g., as represented by the highlighting of the submenu's title), causes a social grouping display 420 to be displayed. The social grouping display 420 includes a number of social grouping representations 422a-422e that are visual representations of various social groupings that the user has created or is able to interact with. Each of the social grouping representations 422a-422e displays information about the social grouping it represents. For example, the social grouping representation 422c displays a name 424a (Family Reunion), a count 424b of the number of contacts associated with the social grouping, and an indication 424c of what type of social grouping that the social grouping representation is representative of (e.g., personal, private shared, public shared).

The social grouping display 420 also includes a contact display 426. The contact display 426 provides a graphical interface for viewing, selecting, and organizing items in the user's contact lists. A collection of contact icons 428a-428i represents the contacts or other entities (e.g., organizations, places, or other items) socially networked with the particular user. In some implementations, the icons can be digital images of the contacts that are represented (e.g., the icons 428a, 428d), arbitrary images (e.g., the icons 428b, 428g), or placeholders (e.g., when the contact has no image associated with their account, such as the icon 428c). Contacts who are members of one or more of the user's social groupings are identified by an indicator 430

superimposed upon the icons (e.g., the icons 428a, 428f, 428h). A scroll bar 429 is provided for the user to access additional contact icons that may not fit into the initial view.

A collection of filter buttons 432a-432d is provided to select subsets of the user's contacts. The "all people" filter button 432a, when selected, causes the contact display 426 to display the user's contacts with substantially no filtering. The "selected" filter button 432b, when selected, causes the contact display to display only the contacts that have been selected by the user. For example, the user may select multiple contacts while in an "all people" view, and then display only selected contacts by pressing the "selected" filter button 432b. The "in groupings" filter button 432c, when selected, causes the contact display 426 to display substantially only the contacts who share at least one social grouping with the user. The "no groupings" filter button 432d, when selected, causes the contact display 426 to display substantially only the contacts that is not in a social grouping with the user. A search input box 425 is provided so the user can type in all or part of a name, and the resulting matches will appear in the contact display 426.

The social grouping display 420 also includes a collection of social grouping filter buttons 440a-440d. The "all groupings" button 440a, when selected, causes the social grouping display 420 to display representations of substantially all of the social groupings that the user is able to interact with. The "personal" button 440b, when selected, causes the social grouping display 420 to display representations of substantially only the user's personal social groupings. The "shared" button 440c, when selected, causes the social grouping display 420 to display representations of substantially only the user's shared private social groupings. The "shared-public" button 440d, when selected, causes the social grouping display 420 to display representations of only the user's shared public groupings. The "query-based" button 440d, when

selected, causes the social grouping display 420 to display only representations of query-based social groupings.

The social grouping representations 422c and 422d are graphical representations of communications channels provided as social groupings and created around respective, detected events. In the illustrated example, the social grouping representation 422c represents a social grouping created around a family reunion event and social grouping representation 422d represents a social grouping created around a company picnic event. For example, the logged in user, John Doe, may have uploaded or published digital content indicative of his attendance at the family reunion and the company picnic. For example, digital image files, posts, and/or status updates provided by the logged in user could have been analyzed by a social networking server to recognize the occurrence of such events.

In response to detecting the events, the social networking server identified other users of the social networking server associated with each of the respective events (e.g., users that attended the events). For example, the social networking server can search other pages maintained by the social networking service to identify digital content related to these events. Users associated with such digital content (e.g., users who uploaded the content and/or users mentioned or tagged in such content) can be determined to be associated with the events.

In another example context, communication channels can be provided in the form of conventional email contact lists. FIG. 5 depicts an example user interface (UI) 500 for managing an email account. As shown, the UI 500 includes a display area 502 for reading and composing email message content and a menu bar 504 for managing the email account. The menu bar 504 provides options 506 for managing emails that have been received or sent by the logged in user. The menu bar 504 also includes options for managing contact lists 508a, 508b. The contact lists



508a, 508b in this example correspond to detected events (e.g., a family reunion and a company picnic, respectively). In this example, contact lists 508a and 508b have been generated in response to detection of an event and are populated with contact information (e.g., email addresses) of users determined to be associated with the events, as discussed in detail above.

FIG. 6 is a flowchart illustrating an example process 600 for creating communication channels around detected events. The example process 600 can be implemented in one or more software programs executed using one or more computing devices (e.g., server device 112 of FIG. 1).

User data is received (602). The user data can include user data that is explicitly authorized for use in detecting events and populating communication channels. For example, a social network server can access digital content posted or otherwise published by users of a social networking service. The digital content can be stored in a local or remote database or repository. The occurrence of an event is detected (604). For example, the social networking server can examine the social networking data to detect the occurrence of an event. Users associated with the event are identified (606). For example, the social networking server can identify users associated with digital content that is related to the detected event. A communication channel (e.g., a social grouping or types of appropriate contact lists) is generated (608). The communication channel is populated with identified users (610). Digital content is distributed using the communication group (612). For example, the social networking server can distribute digital content associated with the detected event to one or more users in the communication channel. Such digital content can be distributed automatically, or in response to request by user in the communication group.

A number of implementations have been described. Nevertheless, it will be understood that various modifications may be made without departing from the spirit and scope of the disclosure. For example, various forms of the flows shown above may be used, with steps re-ordered, added, or removed. Accordingly, other implementations are within the scope of the following claims.

Implementations of the present disclosure and all of the functional operations provided herein can be realized in digital electronic circuitry, or in computer software, firmware, or hardware, including the structures disclosed in this specification and their structural equivalents, or in combinations of one or more of them. Implementations can be realized as one or more computer program products, i.e., one or more modules of computer program instructions encoded on a computer readable medium for execution by, or to control the operation of, data processing apparatus. The computer readable medium can be a machine-readable storage device, a machine-readable storage substrate, a memory device, or a combination of one or more of them. The term “data processing apparatus” encompasses all apparatus, devices, and machines for processing data, including by way of example a programmable processor, a computer, or multiple processors or computers. The apparatus can include, in addition to hardware, code that creates an execution environment for the computer program in question, e.g., code that constitutes processor firmware, a protocol stack, a database management system, an operating system, or a combination of one or more of them.

A computer program (also known as a program, software, software application, script, or code) can be written in any form of programming language, including compiled or interpreted languages, and it can be deployed in any form, including as a standalone program or as a module, component, subroutine, or other unit suitable for use in a computing environment. A computer

program does not necessarily correspond to a file in a file system. A program can be stored in a portion of a file that holds other programs or data (e.g., one or more scripts stored in a markup language document), in a single file dedicated to the program in question, or in multiple coordinated files (e.g., files that store one or more modules, sub programs, or portions of code). A computer program can be deployed to be executed on one computer or on multiple computers that are located at one site or distributed across multiple sites and interconnected by a communication network.

The processes and logic flows described in this disclose can be performed by one or more programmable processors executing one or more computer programs to perform functions by operating on input data and generating output. The processes and logic flows can also be performed by, and apparatus can also be implemented as, special purpose logic circuitry, e.g., an FPGA (field programmable gate array) or an ASIC (application specific integrated circuit).

Processors suitable for the execution of a computer program include, by way of example, both general and special purpose microprocessors, and any one or more processors of any kind of digital computer. Generally, a processor will receive instructions and data from a read only memory or a random access memory or both. The essential elements of a computer are a processor for performing instructions and one or more memory devices for storing instructions and data. Generally, a computer will also include, or be operatively coupled to receive data from or transfer data to, or both, one or more mass storage devices for storing data, e.g., magnetic, magneto optical disks, or optical disks. However, a computer need not have such devices. Moreover, a computer can be embedded in another device, e.g., a mobile telephone, a personal digital assistant (PDA), a mobile audio player, a Global Positioning System (GPS) receiver, to name just a few. Computer readable media suitable for storing computer program instructions

and data include all forms of non volatile memory, media and memory devices, including by way of example semiconductor memory devices, e.g., EPROM, EEPROM, and flash memory devices; magnetic disks, e.g., internal hard disks or removable disks; magneto optical disks; and CD ROM and DVD-ROM disks. The processor and the memory can be supplemented by, or incorporated in, special purpose logic circuitry.

To provide for interaction with a user, implementations can be implemented on a computer having a display device, e.g., a CRT (cathode ray tube) or LCD (liquid crystal display) monitor, for displaying information to the user and a keyboard and a pointing device, e.g., a mouse or a trackball, by which the user can provide input to the computer. Other kinds of devices can be used to provide for interaction with a user as well; for example, feedback provided to the user can be any form of sensory feedback, e.g., visual feedback, auditory feedback, or tactile feedback; and input from the user can be received in any form, including acoustic, speech, or tactile input.

Implementations of the present disclosure can be realized in a computing system that includes a back end component, e.g., as a data server, or that includes a middleware component, e.g., an application server, or that includes a front end component, e.g., a client computer having a graphical user interface or a Web browser through which a user can interact with an implementation of the present disclosure, or any combination of one or more such back end, middleware, or front end components. The components of the system can be interconnected by any form or medium of digital data communication, e.g., a communication network. Examples of communication networks include a local area network (“LAN”) and a wide area network (“WAN”), e.g., the Internet.

The computing system can include clients and servers. A client and server are generally remote from each other and typically interact through a communication network. The relationship of client and server arises by virtue of computer programs running on the respective computers and having a client-server relationship to each other.

In situations in which certain implementations discussed herein may collect or use personal information about users (e.g., user data, information about a user's social network, user's location and time, user's biometric information, user's activities and demographic information), users are provided with one or more opportunities to control whether the personal information is collected, whether the personal information is stored, whether the personal information is used, and how the information is collected about the user, stored and used. That is, the systems and methods discussed herein collect, store and/or use user personal information specifically upon receiving explicit authorization from the relevant users to do so. In addition, certain data may be treated in one or more ways before it is stored or used so that personally identifiable information is removed. As one example, a user's identity may be treated so that no personally identifiable information can be determined. As another example, a user's geographic location may be generalized to a larger region so that the user's particular location cannot be determined.

While this disclosure contains many specifics, these should not be construed as limitations on the scope of the disclosure, but rather as descriptions of features specific to particular implementations of the disclosure. Certain features that are described in this disclosure in the context of separate implementations can also be provided in combination in a single implementation. Conversely, various features that are described in the context of a single implementation can also be provided in multiple implementations separately or in any suitable

sub-combination. Moreover, although features may be described above as acting in certain combinations, one or more features from a combination can in some cases be excised from the combination, and the combination may be directed to a sub-combination or variation of a sub-combination.

Similarly, while operations are depicted in the drawings in a particular order, this should not be understood as requiring that such operations be performed in the particular order shown or in sequential order, or that all illustrated operations be performed, to achieve desirable results. In certain circumstances, multitasking and parallel processing may be advantageous. Moreover, the separation of various system components in the implementations described above should not be understood as requiring such separation in all implementations, and it should be understood that the described program components and systems can generally be integrated together in a single software product or packaged into multiple software products.

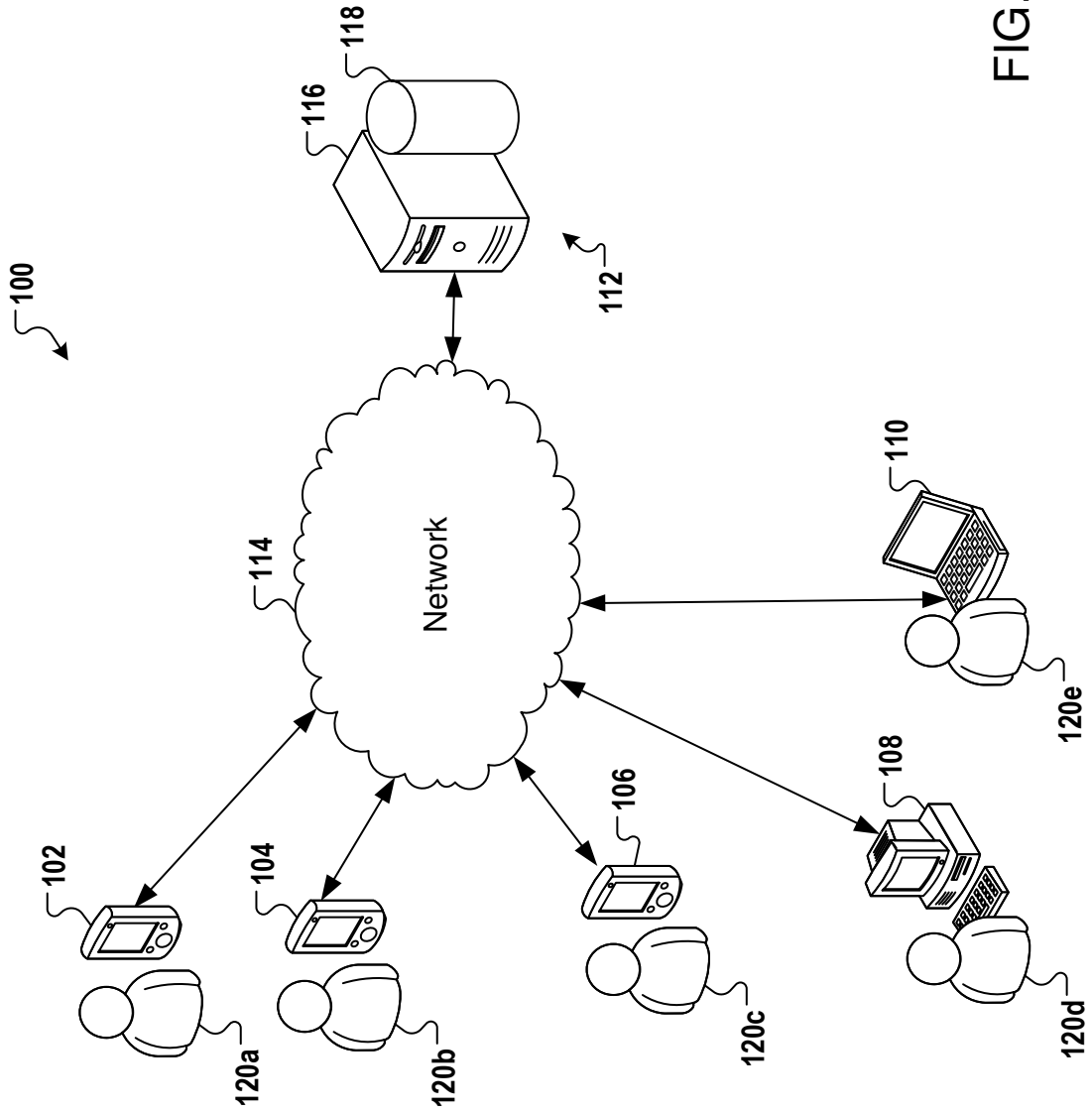


FIG. 1

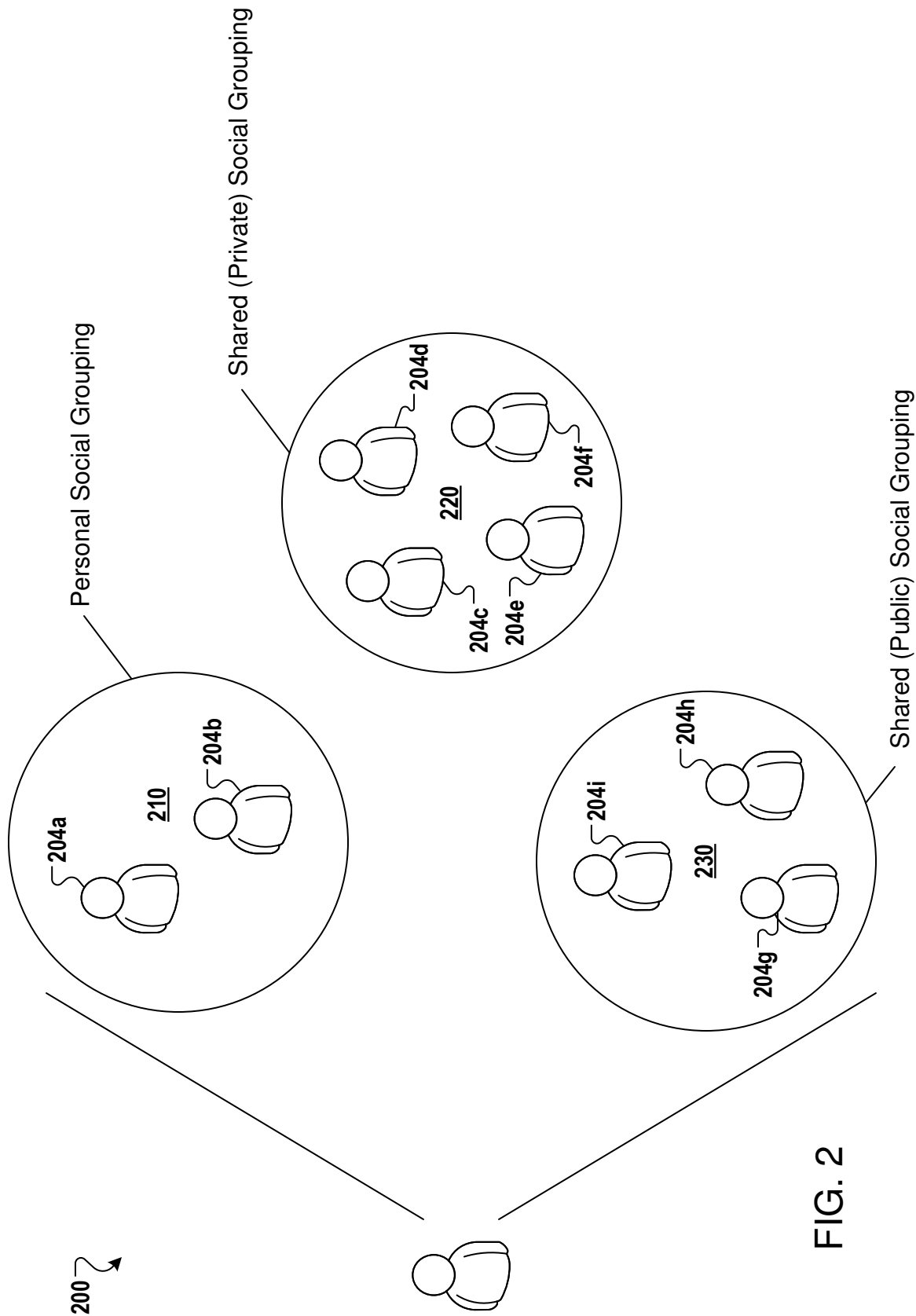
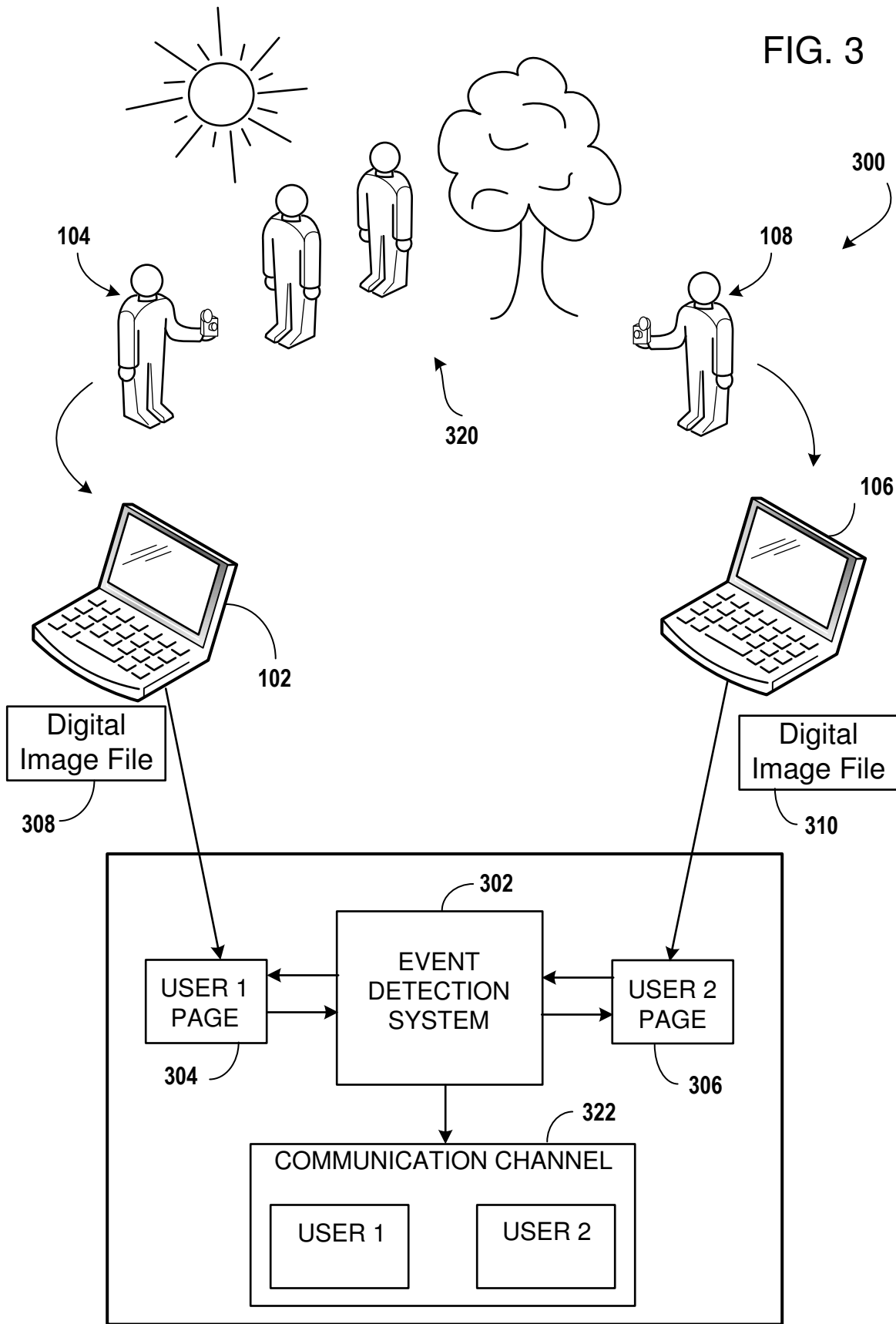


FIG. 2



FIG. 3



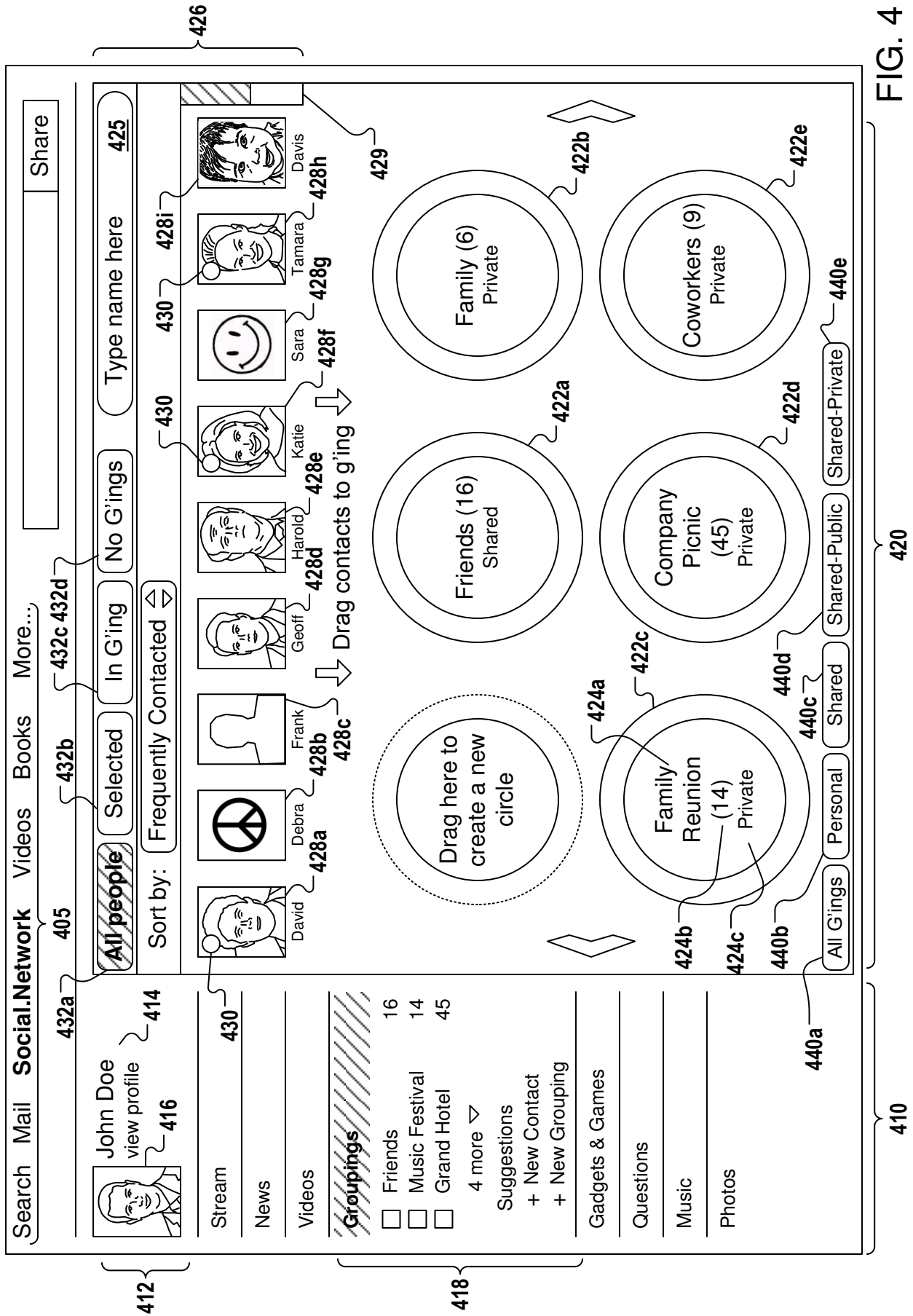
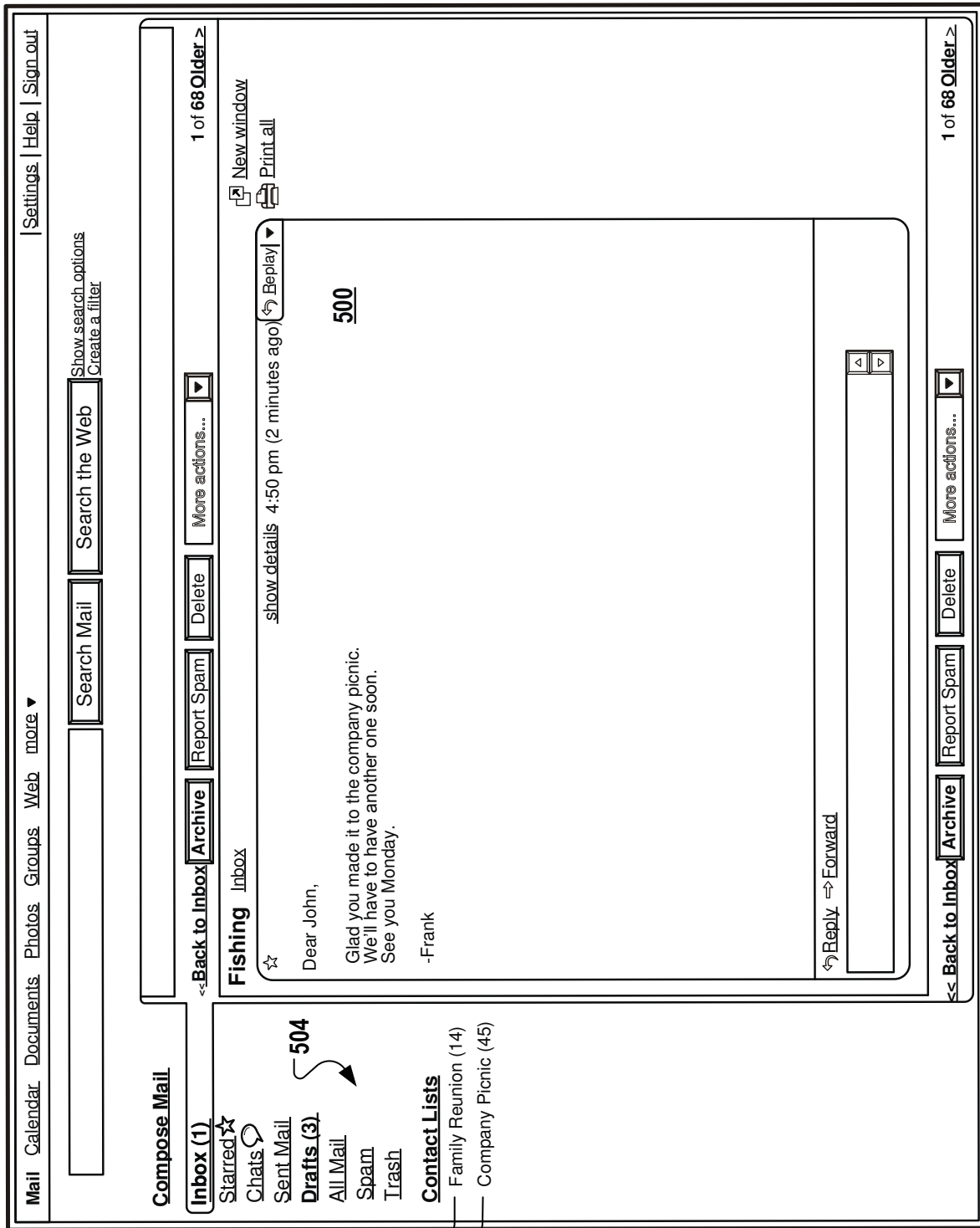


FIG. 4



500

506

508a

508b

FIG. 5

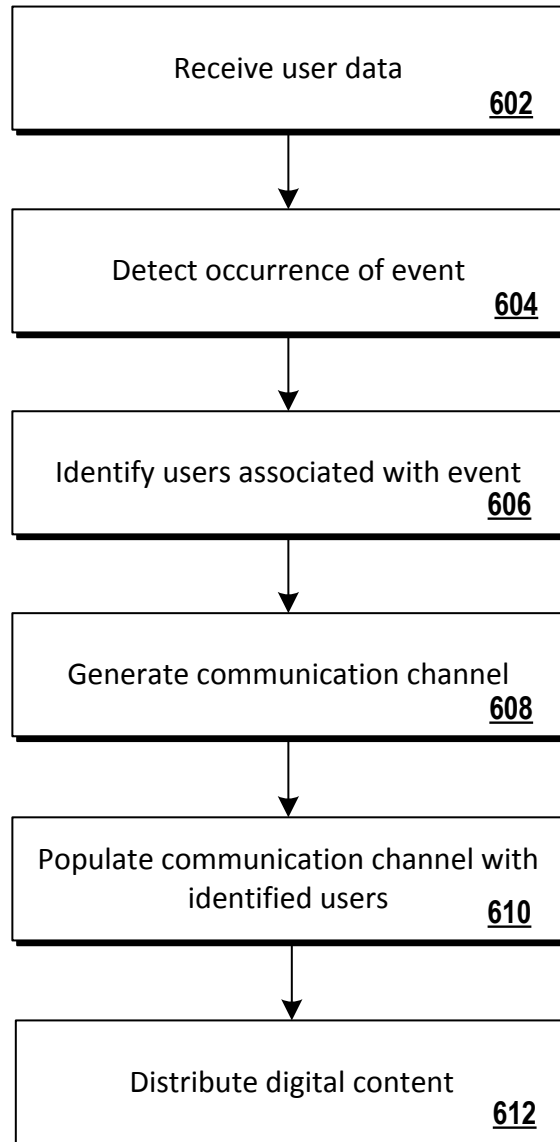


FIG. 6