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(71) Applicant: THOMSON LICENSING [FR/FR]; 1-5 Rue
Jeanne d'Arc, F-92130 Issy Les Moulineaux (FR).

(72) Inventors; and

(71) Applicants : LAWTON, Regine Jeanne [US/US]; 1097
Via Carillo, Thousand Oaks, California 91320 (US).
AHMED, Samir Magid [GB/US]; 1324 Winchester Ave-
nue, Glendale, California 91201 (US). BECKWITT,
Marc [US/US]; 416 Avenida Ossa, San Clemente, Califor-
nia 92672 (US).

(74) Agents: SHEDD, Robert, D. et al.; Thomson Licensing
LLC, 2 Independence Way, Suite #200, Princeton, New
Jersey 08540 (US).

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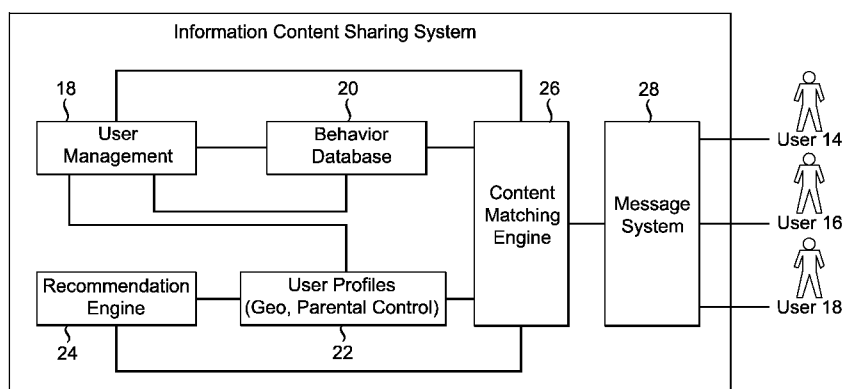


FIG. 1

(57) Abstract: A method for sharing information content among users, in a social network, commences by first identifying new users not currently participating in an existing information content sharing session who want to join that existing content information session. Thereafter, the identified new users are joined users into the existing content sharing session if those identified new users have at least one criterion matching users currently participating in the existing information content sharing session.

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METHOD AND APPARATUS FOR SHARING INFORMATION CONTENT

TECHNICAL FIELD

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This invention relates to information content sharing among users.

BACKGROUND ART

10 The wide reach of public computer networks, such as the Internet, in combination with the proliferation of relatively low-cost communication devices, for example computers, tablets and advanced cellular telephones (e.g., “smart phones”) has led to the phenomenon of “social networking” whereby users can interact with each other and share information content in various different forms. Common forms of information content shared among users in the

15 context of a social network include still images (i.e., pictures) as well as media assets comprised of audio/visual content, sometimes colloquially referred to as “video clips. A user sharing information content with others may wish to share comments regarding the shared information content. Usually such comments take the form of text messages sent using well-known protocols for this purpose.

20 Information content sharing in the context of social networking as discussed above typically commences after two or more users engage one another via a common website for this purpose. Before engaging in information content sharing, the users will exchange details concerning the information content sharing session. For example, such details could include (but not be limited to), the identity of the information content to be shared, its source (e.g., the

25 URL for accessing the information content) and authenticating information, if needed.

 Present day information content sharing techniques presuppose a familiarity among prospective users in order to establish *a priori* the details of the information content sharing session. The alternative would be to broadcast the details of a prospective information content sharing session widely to everyone, which potentially could lead to unwanted participants

30 joining the information content sharing session.

 Thus, a need exists for an information content sharing technique, which enables unfamiliar (e.g., “new”) users to join the information content sharing session without the disadvantages of the prior art.

BRIEF SUMMARY OF THE INVENTION

5 Briefly, in accordance with an illustrated embodiment of the present principles, a method for sharing information content among users commences by first identifying new users not currently participating in an existing information content sharing session who want to join that existing content information session. Thereafter, the identified new users are merged ~~users~~ into the existing content sharing session if those identified new users have at least one criterion matching users currently participating in the existing information content sharing session.

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BRIEF SUMMARY OF THE DRAWINGS

FIGURE 1 depicts a block schematic diagram of a system for sharing information content among users in accordance with the present principles;

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FIGURE 2 depicts a first set of users engaged in a first information content sharing session hosted by the system of FIG. 1;

FIGURE 3 depicts a second set of users engaged in a second information content sharing session hosted by the system of FIG. 1;

20 FIGURE 4 depicts the users of FIGS. 1 and 2 merged into a single information content sharing session hosted by the system of FIG. 1 in accordance with the present principles;

FIGURE 5 depicts the information content sharing session of FIG. 4 with the users partitioned into separate groups based on user preferences; and

25 FIGURE 6 depicts a first and third group of users engaged in an information content sharing session hosted by the system of FIG. 1.

DETAILED DESCRIPTION

FIGURE 1 depicts a block schematic diagram of an information content sharing system 10 in accordance with an illustrated embodiment of the present principles for enabling users 12, 14, and 16 to share information content among themselves. The users 12, 14, and 16 to share information content in the context of an information content sharing session (described hereinafter) while simultaneously exchanging messages. Although not shown,

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each user communicates with the information content sharing system 10 using a communication device, such as a computer, tablet, or intelligent cellular telephone (“smart phone”) (not shown) coupled to the information content sharing system via a wired or wireless network (not shown), typically including but not limited to the Internet.

5 Communications devices of the type described remain well known in the art, and for the sake of brevity, no description of their structure and operation appears here. For the present purposes, each user’s communications device has the ability to access shared content and the ability to allow the user to interact with other users to share information, typically in the form of text messages or the like. Further, as discussed in detail hereinafter, each user’s
10 communications device also has the ability to signal the information content sharing system 10 of the user’s desire to join an information content sharing system hosted by the information content sharing system.

In practice, the users 12, 14, and 16 can access the information system 10 directly, typically via the Internet or the like. Each user would enter the appropriate Universal
15 Resource Locator (URL). In addition, one or more of the users can assess the information system indirectly through an appropriate link. Thus, a user currently accessing a social media web site, such as *Facebook*, could gain access to the information system 10 through a link provided by *Facebook*.

The information system 10 includes a user management engine 18, typically in the
20 form of a server or the like which executes an operating system (e.g., the Microsoft *Windows*® operating system) as well as one or more application programs (not shown). At least one of the application programs manages the execution of information content sharing activities as described hereinafter, including but not limited to authentication of users, tracking of user behavior, and recommendation of information content based on both user behavior and
25 user information content profiles. In addition managing information content sharing, such application software also manages messaging among users as typically occurs simultaneously with the information content sharing. Further, in accordance with the present principles, such application software executed by the user management engine 18 controls the ability of new users to join an information content sharing session among existing users based on matching
30 user criterion if such new users are unknown or have not previously interacted with users currently in an existing information content sharing session.

The information content sharing system 10 of FIG. 1 includes a first database 20, which stores information about users’ behavior, including but not limited to past information

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about content consumption. The system includes a second database 22, which stores user profile information, including but not limited to the user's geographical location, parental control information, and information about content preferences. While the databases 20 and 22 appear as separate entities in FIG. 1, the two databases could reside within a single
5 memory device (not shown) such as a hard disk drive for example. In practice, the information system 10 typically includes the capability to allow users to enter information to both initialize and update their profiles.

The information content sharing system 10 of FIG. 1 further includes a recommendation engine 24, in the form of a computer processor or server for making
10 information content recommendations based on the user behavior information obtained from the database 20 and the user profile information obtained from the database 22. Various techniques exist for making information content recommendations based on user behavior and user profile information. For example, if a user has requested a certain type of information content (e.g., romantic comedies) in the past, the recommendation engine 24 would likely
15 recommend other romantic comedies consistent with the user profile which could include "like" and "dislike" preferences for certain actors or directors for example. The particular methodology employed by the recommendation engine 24 does not play a critical part in terms of the information content sharing in accordance with the present principles.

An information content matching engine 26, typically in the form of a computer or
20 computer server, operates to locate (i.e., "match") the information content recommended by the information content recommendation engine 24 and distribute such information content to the users 12, 14, and 16. As part of the process of locating the information content recommended by the recommendation engine 24, the information content matching engine 26 will typically take into account information from the user management engine 20, such as user
25 authentication data. In addition, the information content matching engine 26 will also consider user behavior information from the behavior database 20. For example, the information content matching engine 26 might not provide the information content recommended by the content recommendation engine 24 if the user has consumed the recommended content in the recent past. Additionally, the content matching engine 26 also
30 considers user profile information from the user profile database 22 to make sure that the content provided the users do not violate parental control guidelines.

The information content sharing system 10 also includes a message system 28, which serves as a conduit to deliver the content to the users 12, 14, and 16 from the content matching

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agent 26. Further, the message system 28 also enables the users to exchange messages, typically text messages with each other in a chat or post format while the users share the information content provided by the content matching engine 26.

Traditionally, users wishing to engage in an information content sharing session (such as the users 12, 14, and 16 of FIG. 1) will do so by communicating with each other in advance to exchange details of the information content sharing session, including, but not limited to the URL associated with the session. Such advance communications could take the form of an e-mail, or text message, or a telephone call. Thus, joining an information content sharing session requires an interaction among the intended session participants in advance of the session, thus assuming a familiarity among the users *a priori*.

In accordance with an aspect of the present principles, the information content sharing system 10 of FIG. 1 advantageously allows new users to join an existing information content sharing session. For purposes of discussion, a “new” user constitutes a user unknown to those currently participating in an information content sharing session. Alternatively, a “new” user could be someone known to the current users, but someone who has not interacted with them in connection with the current information content sharing session. Thus, a “new” user constitutes someone not yet associated with a current information content sharing session, even though he or she may have interacted with the users in the current information content sharing session previously.

FIG. 2 depicts an information content sharing session 200 among the users 12, 14, and 16 hosted by the information content sharing system 10, all of FIG. 1. For purposes of discussion, presume that the information content shared among the content users 12, 14, and 16 comprises a baseball game 202. During the course of collectively watching the baseball game 202, some or all of the users 12, 14, and 16 of FIG. 2 will interact with each other, typically by exchanging text messages collectively reproduced in the message block 204 in chronological order based on message origination. Each message appearing in the message block 204 bears the reference number corresponding to the particular user who authored the message. FIGURE 3 depicts an information content sharing session 300 between users 30 and 32, also hosted by the content information sharing system 10 of FIG. 1. Just as the users 12, 14, and 16 jointly watch the baseball game 202 during the information content sharing session 200 of FIG. 2, the users 30 and 32 jointly watch the same baseball game 202 during the information content sharing session 300 of FIG. 3. In the course of watching the baseball game 202 during the information content sharing session 300, the users 30 and 32 of FIG. 3

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interact with each other, typically by exchanging text messages collectively reproduced in the message block 304 in chronological order based on message origination. As with the messages in the message block 204 of FIG. 2, the messages appearing in the message block 304 bear the reference number corresponding to the particular user who authored that message.

FIG. 4 depicts a merged information content sharing session 400 in which the users 30 and 32 have joined with the users 12, 14, and 16. In the past, the users 30 and 32 would need to contact one or more of the users 12, 14, and 16 in advance of entering the information content sharing session. In accordance with the present principles, each of the users 30 and 32 can request to enter an existing content sharing session by entering a "join" command on his or her communications device. The receipt of a "join" command from a new user prompts the information content sharing system 10 of FIG. 1 to identify the content if any currently being shared by the new user. In this way, the information content sharing system 10 can identify the ongoing content sharing sessions most likely of interest to the new user. However, the information content sharing system 10 does not automatically enter the new user in any of the existing information content sharing sessions that it hosts. Rather, the information content sharing system 10 of FIG. 1 will first evaluate the profile information stored in the database 22 for the new user. Using such information, the information content sharing system 10 of FIG. 1 seeks a best match between the new user and the users currently in a content sharing session taking into account criteria, such as geographic proximity, common interests, age, and gender, for example, as well as other demographic information.

The information content sharing system 10 of FIG. 1 will alert the new user of the existing content sharing session offering best match and then give the new user the opportunity to join that information content sharing session or not. If the new user indicates a desire not to join, or does not respond at all after a certain period of time, then the information content sharing system 10 of FIG. 1 would log the new user off the system.

If the new user indicates to the information content sharing system 10 of FIG. 1 a desire to enter the best-matched content information sharing session, then the information content sharing system will typically notify the current users in the information content sharing session of the new user's desire to join. Assuming none of the current users in the information content sharing session object, the information content sharing system 10 will add the new user. Note that the current users in the information content sharing session could indicate advance approval for any new user, thereby avoiding the need for notification prior to

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admitting each new user. Thus, under such circumstances, the information content sharing system 10 would automatically add each new user to the best-matched information content sharing session automatically, assuming pre-approval by the existing users in that session.

5 The information content sharing system 10 could add new users to the best-matched information content sharing session absent pre-notification or pre-approval. However, doing so might not prove advantageous. One or more existing users in that information content sharing session might object to the addition of new users to that session absent pre-notification or advance approval, potentially creating customer dissatisfaction.

10 A new user could also join an information content sharing session in which existing users share content different from that currently shared by the new user. Under such circumstances, the new user would enter a “join” command to the information content sharing system 10 indicating a desire to join an information content sharing session sharing different content. The information content sharing system 10 would then identify the information content sharing session(s) sharing the requested content and perform a best match similar to
15 that described above. Thereafter, the information content sharing system 10 would add the new user automatically (assuming pre-approval) or after actual approval by the users currently in the best-matched information content sharing session.

FIGURE 5 depicts a merged information content information sharing session 500 in which the users 12, 14, 16, 30, and 32 participate as similar to the information content sharing session 400 of FIG. 4. In connection with the information content sharing session 500, the
20 users 12, 14, 16, 30, and 32 jointly share a football game 502 in contrast to the baseball game 202 of FIG. 4. The difference in the content shared among the users does not affect how the users join the information content sharing session (e.g., by entering a “join” command). However, the nature of the shared content will affect which information content sharing sessions a new user joins using the best match process discussed previously.
25

In connection with the information content sharing session 500 of FIG. 5, the information content sharing system 10 of FIG. 1 could choose to separate certain users (e.g., users 30 and 32) from other users (e.g., users 12, 14, and 16). (In contrast, the user 12, 14, 16, 30 and 32 in the information content sharing session 400 of FIG. 4 remain together as a single
30 group.). Regarding the information content sharing session 500 of FIG. 5, the information content sharing system 10 of FIG. 1 could choose to separate the users based on team affiliations, with the users 12, 14 and 16, associated with one team, and the remaining users 30 and 32 associated with the other team. Under such circumstances, the information content

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sharing system 10 would establish a common message block 504 for all users, and could establish separate message blocks (not shown) for the users affiliated with each of the teams.

The information content sharing system 10 of FIG. 1 could use other criterion for separating user besides team affiliations. For example, the information content sharing system 10 could separate users based on age or gender. In some instances, the separation of users could occur voluntarily with the users choosing a particular group based on a criterion such as gender. In other instances, the separation could occur involuntarily, based on whether the user is an adult or child.

FIGURE 6 depicts an information content sharing session 600 among the users 12, 14, and 16 and a set of new users 60, 62, and 64, all of whom collectively share content in the form of the baseball game 202. The users 60, 62 and 64, who previously might have had an association with each other, typically have not interacted with the users 12, 14, and 16 prior to joining the information content sharing session 600. As discussed above, the content information sharing system 10 of FIG. 1, in a response to a “join” command from the users 60, 62 and 64, , will enter those users into the best-matched information content sharing session, e.g., session 600 of FIG. 6. In connection with the information content sharing session 600, the information content sharing system 10 will establish a common message block 604 for the users in that session so they can exchange messages among themselves.

The foregoing describes a technique for enabling users to share information content among themselves.

CLAIMS

- 1 1. A method for sharing information content among users, comprising the steps
2 of:
3 identifying new users not currently participating in an existing information content
4 sharing session who want to join to the existing information content sharing session; and
5 merging the identified new users into the existing information content sharing session
6 if the identified new users have criterion matching users currently participating in the existing
7 information content sharing session.
- 1 2. The method according to claim 1 wherein the matching criterion includes at
2 least one of age, geographical location and parental control.
- 1 3. The method according to claim 1 wherein the merging step includes:
2 notifying the users currently participating in that existing information content sharing
3 session that new users will be merged into that existing information content sharing session in
4 advance of actual merging.
- 1 4. The method according to claim 3 wherein no merging occurs if any of the users
2 currently participating in the existing information content sharing session object following
3 notification.
- 1 5. The method according to claim 1 wherein the merging occurs automatically if
2 the users currently participating in the existing information content sharing session have
3 granted advance approval to add the new users.
- 1 6. The method according to claim 1 further including the step of separating users
2 in the content information sharing session following the merging of the identified new users.
- 1 7. The method according to claim 6 wherein the users are separated based on user
2 preferences.

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1 8. The method according to claim 1 wherein the new users are identified based on
2 receipt of a join command entered such new users.

1 9. A system for sharing content among users, comprising:
2 a behavior database for storing data indicative of users' consumption of information
3 content;
4 a user profile database for storing data reflective of user profiles;
5 a recommendation engine for recommending information content to users based
6 users' profiles and consumption of information content obtained the user profile database and
7 behavior database respectively;
8 a content matching engine for locating information content recommended by the
9 recommendation agent for distribution to users participating in an existing information content
10 sharing session;
11 a message system coupled to the content matching system for enabling users
12 participating in the an information content sharing session to exchange messages; and
13 a user management engine for identifying new users not currently participating in an
14 existing information content sharing session who want to join that existing content
15 information session; and for merging the identified new users into that existing information
16 content sharing session if those identified new users have criterion matching users currently
17 participating in that existing information content sharing session, the criterion obtained from
18 the user profile database.

1 10. The system according to claim 9 wherein the matching criterion includes at
2 least one of age, geographical location and parental control.

1 11. The system according to claim 9 wherein the user management engine notifies
2 users currently participating in that existing information content sharing session that new
3 users will be merged into that existing information content sharing session in advance of
4 actual merging.

1 12. The system according to claim 11 wherein the user management engine does
2 not merge the new users if any of the users currently participating in the existing information
3 content sharing session object following notification.

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1 13. The system according to claim 9 wherein the user management engine merges
2 the new users automatically if the users currently participating in the existing information
3 content sharing session have granted advance approval to add the new users.

1 14. The system according to claim 9 wherein the user management engine
2 separates users in the content information sharing session following the merging of the
3 identified new users.

1 15. The system according to claim 14 wherein the user management engine
2 separates users based on user preferences.

1 16. The system according to claim 9 wherein the user management engine
2 identifies new users on receipt of a join command entered by such new users.

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1 17. A system for sharing information content among users, comprising:
2 means for identifying new users not currently participating in an existing information
3 content sharing session who want to join that existing information content sharing session;
4 and

5 means for merging the identified new users into that existing information content
6 sharing session if those identified new users have criterion matching users currently
7 participating in that existing information content sharing session.

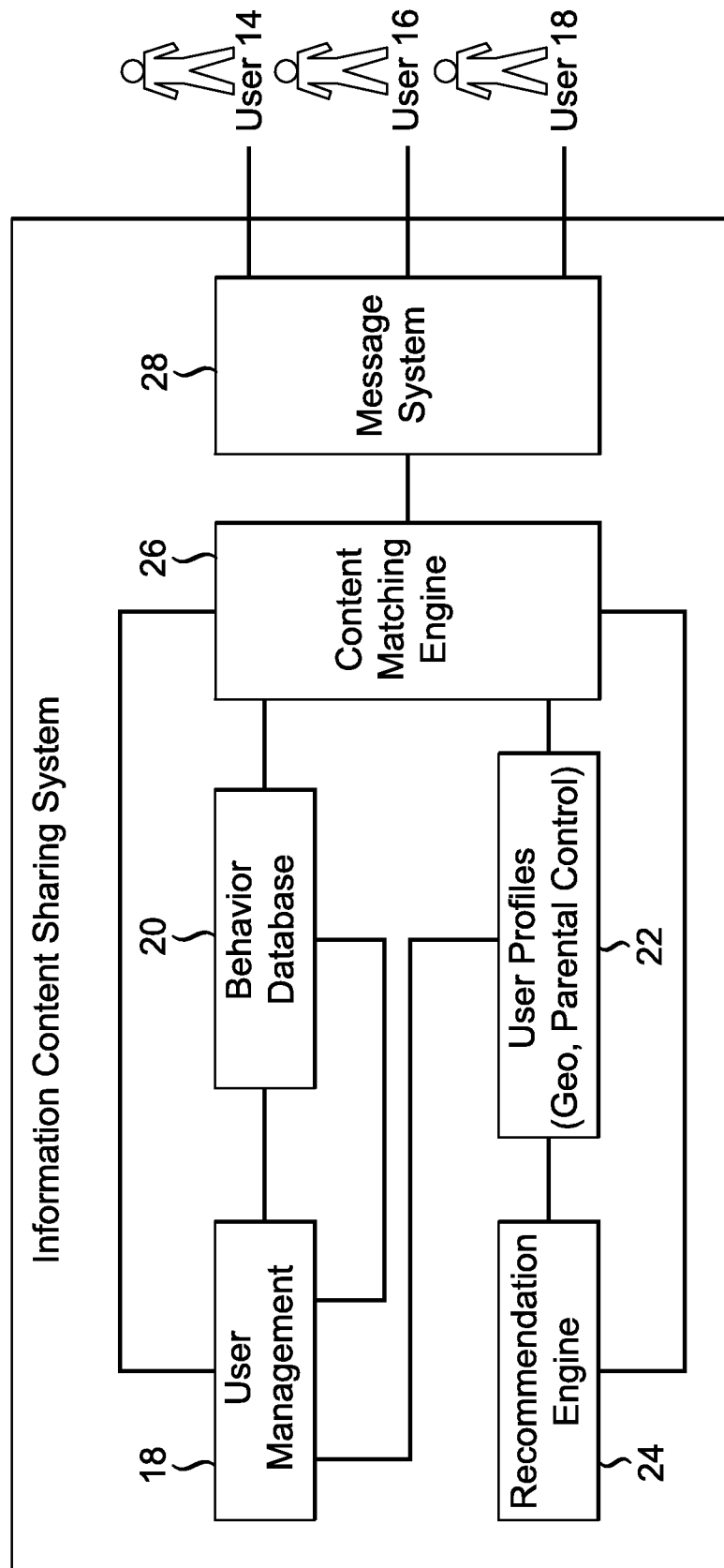


FIG. 1

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12 14 16

200

Baseball Game

202

204

12 - I can't believe that our sports team is losing,

14 - The pitcher does not know how throw the ball.

16 - I guess I'll cancel my season ticket subscription.

14 - You can't do that, we are supposed to go to next Thursday's game,

FIG. 2

30 32

300

Baseball Game

202

304

30 - Hey, what did you think of that last out?

32 - It was kind of crazy with how things went on.

FIG. 3

12 14 16 30 32

400

Baseball Game

202

404

30 - This game is pretty lame. No runs scored by either team.

14 - I hate slow games

16 - Me too.

32 - I'm going to grab a sandwich.

FIG. 4

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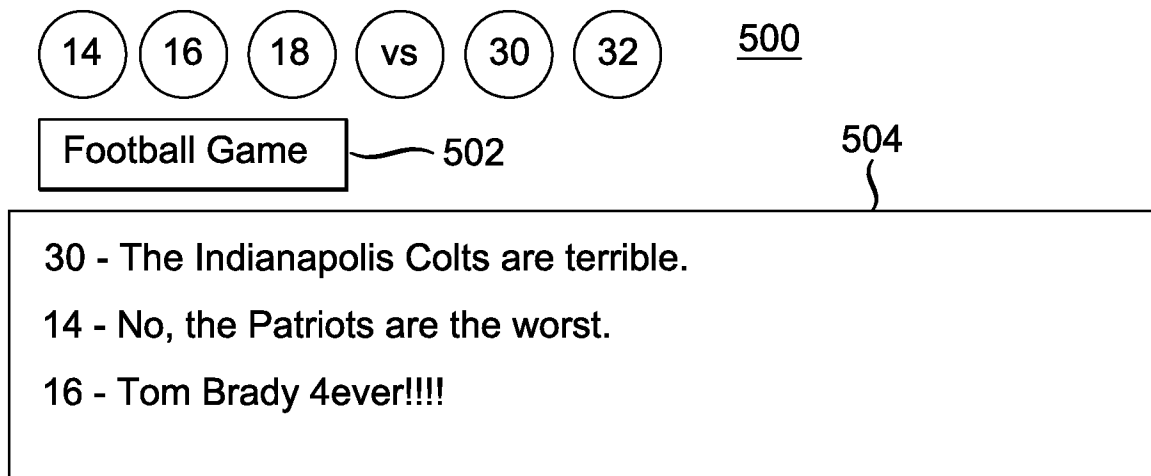


FIG. 5

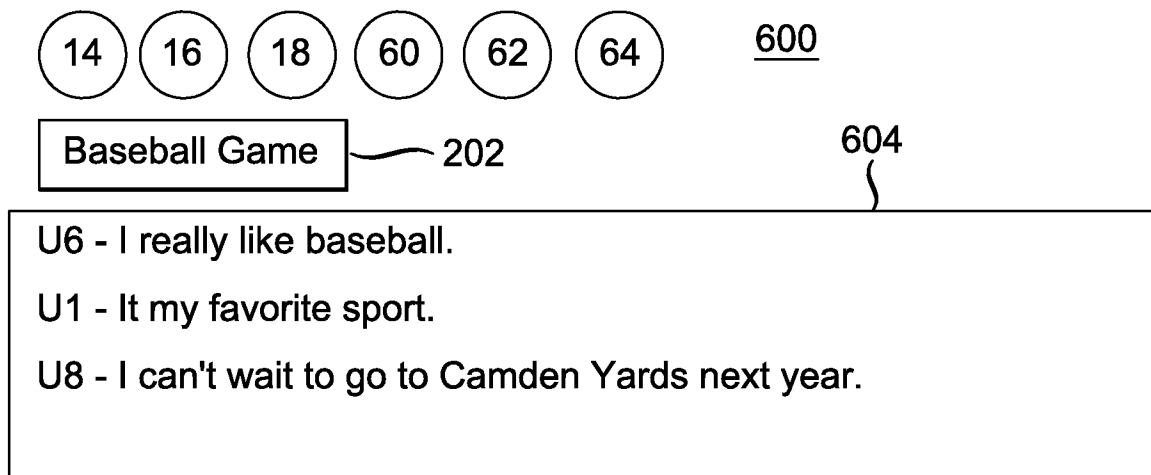


FIG. 6

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

INV. G06Q10/10 H04L29/06
 ADD. H04M3/38 H04M7/00

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)

G06Q H04L H04M

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

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

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 102 843 421 A (TENCENT TECH SHENZHEN CO LTD) 26 December 2012 (2012-12-26) abstract -& WO 2014/008780 A1 (TENCENT TECH SHENZHEN CO LTD [CN]) 16 January 2014 (2014-01-16) abstract paragraph [0003] - paragraph [0005] paragraph [0008] - paragraph [0010] paragraph [0024] - paragraph [0029] paragraph [0040] paragraph [0050] - paragraph [0053] paragraph [0056] - paragraph [0057] paragraph [0078] paragraph [0081] - paragraph [0084] paragraph [0086] figures 1-4,7,8 -----	1-17



Further documents are listed in the continuation of Box C.



See patent family annex.

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 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040,
 Fax: (+31-70) 340-3016

Authorized officer

Molinari, Fausto

INTERNATIONAL SEARCH REPORT

Information on patent family members

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