METHOD AND APPARATUS FOR PLAYERS OF WAGERING GAMES TO FIND FRIENDS IN A GAMING ENVIRONMENT

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Abstract

Disclosed are gaming machines, including related methods, apparatus, and systems, including computer program products, implementing and using techniques for players of wagering games to find friends in a gaming environment. Player identification information identifies a first player of a first gaming device configured to play a game of chance. One or more friend-finding criteria associated with the identified first player are retrieved from a storage medium. A second player is identified as a friend or a friend candidate of the first player based on the retrieved friend-finding criteria. A location associated with the second player is identified as being in a designated area of the gaming environment. Output data indicating the identified second player is provided.
<table>
<thead>
<tr>
<th>Buddies List</th>
<th>Player Tracking Information</th>
<th>Friend - Finding Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Player A</td>
<td>Preferred Games: Little Green Men</td>
<td>eharmony.com, myspace.com</td>
</tr>
<tr>
<td>Dave</td>
<td>Preferred Match Traits: Gold Level</td>
<td>facebook.com, linkedin.com</td>
</tr>
<tr>
<td>Player C</td>
<td>Status: Silver Win</td>
<td>friendsreunited.com, true.com</td>
</tr>
<tr>
<td>Player B</td>
<td>Preferred Games: Poker</td>
<td>myspace.com, friendsreunited.com</td>
</tr>
<tr>
<td>Player N</td>
<td>Status: Gold Level</td>
<td>facebook.com, linkedin.com</td>
</tr>
</tbody>
</table>

**FIG. 4**
Player Friend-Finding in a Gaming Environment

501

Sign-up and Initialization Stage

502

Friend-Finding Stage

503

Communications Stage

FIG. 5A
**FIG. 5B**

1. **Sign-up and Initialization Stage**
   - **Initialization of Friend-Finding Services**
2. **Player Submits Player Information**
3. **Access Player Account**
4. **Initiate Gaming Session**

**FIG. 5C**

1. **Friend-Finding Stage**
   - **Initiate Friend-Finding Services**
2. **Find Friends and Friend Candidates**
Communications Stage

Open Communications?

Y

Player Selects Friends and Friend Candidates

Determine Communications Paths in Accordance with Preferences and Restrictions

Open Communications Sessions Between Players Over Determined Communications Paths

N

Continue Gaming

FIG. 5D
Initialization of Player Friend-Finding Services in a Gaming Environment

Input Player Information to Create or Update Player Account

Player Indicates Interest in Friend-Finding Services

Select Friend-Finding Services in which to Participate

Define Communications Preferences and Restrictions for Security

FIG. 6
Select Friend-Finding Services

Present Internal Casino Friend-Finding Services

Buddy List? Y

Enter Existing Friends Information

N

Casino Friend-Finding Services? Y

Select Player Tracking Criteria

N

Select Additional Player Friend-Finding Criteria

External Matching Service? N

Stop

Y

Identify Internet Matching Service Sites

Determine Login Procedures for Secure Sites

Retrieve and Store Information

FIG. 7
Define Communications Preferences and Restrictions for Security

Set Restrictions on Who Can Communicate with Player

Set Preferred Communications Paths and Restrictions

Set Viewing Restrictions on Player Information

FIG. 8
Find Friends and Friend Candidates Using Designated Services

Present Internal Casino Friend-Finding Services

View Casino Buddies?

Identify Buddies in Designated Location(s) During Designated Timeframe(s)

Find Casino Friend Candidates

Retrieve Player Friend-Finding Criteria

Identify Friend Candidates in Designated Location(s) During Designated Timeframe(s)

Find Internet Matches?

Identify Matches

A

FIG. 9A
FIG. 9B
Identify Matches on External Matching Services

Identify Matching Services

Establish Secure Communications Path

Retrieve Login and Password Information for Secure Sites

Access Identified Matching Service Sites

Retrieve Match Information

FIG. 10
METHOD AND APPARATUS FOR PLAYERS OF WAGERING GAMES TO FIND FRIENDS IN A GAMING ENVIRONMENT

FIELD OF THE INVENTION

[0001] The present invention relates to wagering games and machines, such as slot machines and video poker machines, and gaming networks. More particularly, the present invention relates to methods and apparatus for players of wagering games to identify, locate, and communicate with friends and potential friends in a gaming environment such as a casino.

BACKGROUND OF THE INVENTION

[0002] Gaming in the United States is divided into Class I, Class II and Class III games. Class I gaming includes social games played for minimal prizes, or traditional ceremonial games. Class II gaming includes bingo games, pull tab games if played in the same location as bingo games, lotto, punch boards, tip jars, instant bingo, and other games similar to bingo. Class III gaming includes any game that is not a Class I or Class II game, such as a wagering game typically offered in non-Indian, state-regulated casinos. Many games of chance that are played on gaming machines fall into the Class II and Class III categories of games.

[0003] As technology in the gaming industry progresses, the traditional mechanically driven reel slot machines are being replaced with electronic counterparts, that is, electronic gaming machines having video displays based on CRT, LCD, plasma, or the like. Electronic gaming machines such as video slot machines and video poker machines are becoming increasingly popular. Part of the reason for their increased popularity is the nearly endless variety of games that can be made available for play on a single gaming machine. Advancements in video and electronic gaming enable the operation of more complex games that would not otherwise be possible on mechanical-driven gaming machines or personal computers.

[0004] Various games, particularly the Class II and Class III categories of games, can be implemented as server-based games in a server-client system. In a server-based gaming arrangement, a gaming server serves multiple gaming machines as clients. For example, a casino can include a plurality of gaming machines located on the game floor, and a connected gaming server located in a back room of the casino. Generally, the games and capabilities of a gaming machine depend on the central server. Games can be downloaded from the central server to the gaming machines for execution, for instance, when initiated by casino operations management. Alternatively, the central server can execute the games and output game data to the gaming machines.

[0005] To enhance the gaming experience, there are a number of peripheral components/devices that can be connected to a gaming machine such as a slot machine or video poker machine. Examples of these devices include player tracking units, lights, ticket printers, card readers, speakers, bill acceptors/validators, ticket readers, coin acceptors, display panels, key pads, coin hoppers and button pads. These peripheral devices are built into the gaming machine or otherwise attached to the gaming machine. For instance, a top box is often constructed as a separate component on top of the gaming machine.

[0006] Typically, using a master gaming controller, a gaming machine controls various combinations of devices that allow a player to play a game on the gaming machine and also encourage game play on the gaming machine. For example, a game played on a gaming machine usually requires a player to input money or an indicia of credit into the gaming machine, indicate a wager amount, and initiate game play. These steps require the gaming machine to control input devices, such as bill acceptors/validators and coin acceptors, to accept money into the gaming machine and recognize user inputs from devices, including key pads, button pads, card readers, and ticket readers, to determine the wager amount, and initiate game play.

[0007] After game play has been initiated, the gaming machine determines a game outcome, presents the game outcome to the player and may dispense an award of some type depending on the outcome of the game. A game outcome presentation may utilize many different visual and audio components such as lights, music, sounds and graphics. The visual and audio components of the game outcome presentation may be used to draw a player's attention to various game features and to heighten the player's interest in additional game play.

[0008] Maintaining a game player's interest in game play, such as on a gaming machine or during other gaming activities, is an important consideration for an operator of a gaming establishment. More and more gaming services are being provided to gaming machines to maintain player interest. These services can be offered via communication networks that link groups of gaming machines to a remote computer, such as a host server, that provides one or more gaming services. As an example, gaming services that may be provided by a remote computer to a gaming machine via a communication network of some type include player tracking, accounting, cashless award ticketing, lottery, progressive games, and bonus games or prizes. These services and features are provided in addition to the games that are available for play on the gaming machines.

[0009] Player tracking programs are often offered by a particular gaming establishment to provide rewards to players that typically correspond to the player's level of patronage, for example, to the player's playing frequency and/or total amount of game plays at the particular gaming establishment. Player tracking rewards may be free meals, free lodging and/or free entertainment. These rewards may help to sustain a game player's interest in additional game play during a visit to a gaming establishment and may entice a player to visit a gaming establishment to partake in various gaming activities.

[0010] In general, player tracking programs may be applied to any game of chance offered at a gaming establishment. In particular, player tracking programs are very popular with players of mechanical slot gaming machines and video slot gaming machines. In a gaming machine, a player tracking program is implemented using a player tracking unit installed in the gaming machine and in communication with a remote player tracking server.

[0011] Due to their increasing popularity, player tracking cards and player tracking programs have essentially become the de facto marketing method of doing business at casinos. As suggested above, a player's incentive for using the player tracking services is awards provided by the gaming machine operator (e.g., the casino). Some incentives of a casino for providing player tracking services are to generate "brand" loyalty, gather valuable information that may be used for marketing and provide better customer services. This is due to the fact that the programs allow a casino to identify and
reward customers based upon their previous game play history. In particular, a goal of the casinos is to identify and then to provide a higher level of service to certain groups of players identified as especially valuable to the casinos.

[0012] Generally, a player signs up with a casino to participate in their player tracking and reward program. By signing up, the casino learns the identity of the player. The casino generates a player file with which the player’s identity is associated. The casino then tracks the player’s play of its games in order to determine when and if the player is entitled to a reward.

[0013] In order to track the player’s play, the casino may offer the player a player tracking card. This card has information associated with it, such as a unique player number. This player number is also associated with the generated file for that player. When the player wishes to play a game, the player utilizes a card reader located at the casino’s gaming device to read their player card. The player or other identification number is transmitted to a computer which accesses the player’s file. Information regarding the player’s activities, such as number of games played, amounts wagered or won, are transmitted from the gaming machine to the computer. This information is utilized to update the player’s file with play or reward information.

[0014] Commonly, activities of a player are associated with points. The points are assigned based on the player’s activities. For example, a player may be awarded a point for each dollar which is wagered. The wagered information may be used to generate reward points. Over time, the player’s file is updated to reflect accrued reward points. When a player has engaged in a certain level or volume of play, such as evidenced by a number of points accrued, then the player may be entitled to a reward. A player may travel to a central station where the player may check their point total. The player may also compare their point total to the number of points necessary for particular rewards. These awards may comprise goods or services, such as free or discounted food, lodging and other awards.

[0015] This type of system has the advantage that the player is rewarded for the loyalty of play at a particular casino. Such a reward is based upon the player’s frequency or volume of play, and is apart from any winnings which the player may have received as a result of playing individual instances of a game or gaming machine. The casino benefits by having players return to their property to play their games.

[0016] Casinos have a defined customer base, a significant portion of which includes players participating in casino player tracking and reward programs. This customer base can generally be viewed as regular patrons of the casino. Individuals in this group of patrons may desire to associate with others in the group because they have the same or similar level of interest in wagering activities. For instance, a group of players may frequent the same table game, such as a poker table, in Casino A on Friday nights. These players may have met at the table, a nearby sports bar, a bonus or promotional event, or known each other from other life experiences. Regardless of how they met, they simply enjoy being in the same casino and participating in wagering activities together.

[0017] Indeed, many casino patrons enjoy meeting existing and new friends at the casino to share in fun activities. However, it is becoming increasingly difficult for these players to find each other. This difficulty is often attributable to the large size, complex layout, and crowds of modern casinos. For instance, modern casinos often have multiple levels packed with various gaming devices, restaurants, bars, advertisement and promotion apparatus, and large numbers of people. These and other elements contribute to impaired views, limited motion, and noise pollution, thus making it difficult for individual players to seek out and speak with other players. Thus, finding and communicating with friends in a casino has become cumbersome.

[0018] These difficulties only worsen as casinos continue to grow in size and complexity, and attract more patrons. When such a casino is crowded, for example, during peak gaming hours, players frustrated from loud noise and hindered movement may decide that it is not worth the trouble to navigate the casino to find their friends. For instance, a group of friends arranges to meet at Casino X at 7:30 pm on a Saturday night. The group does not designate a particular location in the casino, since they often play in the same general area. When one or more friends cannot be located, individuals in the group may get caught up in the excitement of their own gaming or be distracted by various casino events. They may give up searching for missing friends, who were actually in the general area at the designated time, and choose to leave the casino early out of frustration.

[0019] In addition, many players desire to meet unknown players in a casino to make new friends and acquaintances, and thereby expand their social circle. Some players may simply be interested in meeting new buddies to share in gaming activities, while other players are searching for individuals to start and develop friendships that could continue outside of the casino, such as romantic relationships. However, the same size, complexity, crowds, and noise pollution problems associated with modern casinos, as described above, similarly frustrate these players, and can defeat the pleasure of gaming combined with new-friend-searching. For example, noise pollution from crowds of patrons can turn a simple, “Hello, how are you?” into distorted gibberish.

[0020] Thus, players who have a passion for gambling and other casino activities, and who wish to share that passion with existing and new friends, may simply give up on a night of casino fun. Each of these players represents lost revenues for the gaming establishment and other participating vendors.

SUMMARY OF THE INVENTION

[0021] Disclosed are gaming machines, including related methods, apparatus, and systems, including computer program products, implementing and using techniques for players of wagering games to find friends in a gaming environment.

[0022] According to one aspect of the present invention, a method includes receiving player identification information identifying a first player of a first gaming device configured to play a game of chance. One or more friend-finding criteria associated with the identified first player are retrieved from a storage medium. A second player is identified as a friend or a friend candidate of the first player based on the retrieved friend-finding criteria. A location associated with the second player is identified as being in a designated area of the gaming environment. Output data indicating the identified second player is provided.

[0023] In one implementation, identification of the second player includes identifying an action associated with the second player as occurring within a designated time frame. In one implementation, the friend-finding criteria includes one or more of a buddies list, player tracking information, friend-finding player preferences, and data associated with a match-
ing service accessible over a network. In one implementation, the player tracking information includes one or more items associated with the first player. The one or more items can include games, a type of machine, a status, point information, an amount wagered, log-in information, a time of game play, game play history information, and a theoretical win. In one implementation, the friend-finding player preferences include one or more items associated with the first player, such as a personal characteristic, a preferred restaurant, a sport, a show, or a hotel.

In one implementation, the method further includes receiving a selection indicating desired communications between players. A communications path is determined for a communications session between the players. The communications path can be determined in accordance with one or more preferences and restrictions.

According to another aspect of the present invention, an apparatus includes an interface coupled to receive player identification information identifying a first player of a first gaming device configured to play a game of chance. The apparatus further includes a processor coupled to the interface and configured to: retrieve from a storage medium one or more friend-finding criteria associated with the identified first player; and identify a second player as a friend or a friend candidate of the first player based on the retrieved friend-finding criteria. A location associated with the second player is identified as being in a designated area of the gaming environment. Output data indicating the identified second player is provided.

In one implementation, the interface includes a player tracking unit. In one implementation, the apparatus further includes a player interface coupled to receive a selection indicating desired communications between the players.

According to yet another aspect of the present invention, a system includes a gaming device in communication with a network. The gaming device includes a player interface coupled to receive player identification information identifying a first player of a first gaming device configured to play a game of chance. The system further includes a server in communication with the network. The server includes a network interface coupled to receive the player identification information from the gaming machine over the network, and a processor coupled to the interface. The processor is configured to: retrieve from a storage medium one or more friend-finding criteria associated with the identified first player; identify a second player as a friend or a friend candidate of the first player based on the retrieved friend-finding criteria, including identifying a location associated with the second player as being in a designated area of the gaming environment; and provide output data indicating the identified second player.

All of the foregoing methods and apparatus, along with other methods and apparatus of aspects of the present invention, may be implemented in software, firmware, hardware and combinations thereof. For example, the methods of aspects of the present invention may be implemented by computer programs embodied in machine-readable media and other products. Also, aspects of the invention may be implemented by networked gaming machines, game servers and other such devices. These and other features and benefits of aspects of the invention will be described in more detail below with reference to the associated drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention may best be understood by reference to the following description taken in conjunction with the accompanying drawings, which are illustrative of specific embodiments of the present invention.

FIG. 1 shows a block diagram of a casino gaming environment including systems and apparatus for players of wagering games to find friends, constructed in accordance with one embodiment of the present invention.

FIG. 2 shows a block diagram of a casino gaming environment including systems and apparatus for players of wagering games to find friends, constructed in accordance with one embodiment of the present invention.

FIG. 3 shows a block diagram of a system, including apparatus and interfaces, to facilitate players finding friends in a gaming environment, constructed according to one embodiment of the present invention.

FIG. 4 shows a diagram of a table of friend-finding criteria stored for a plurality of players for the purpose of finding friends in a gaming environment, in accordance with one embodiment of the present invention.

FIG. 5A shows a flow diagram of a method 500 for players of wagering games to find friends in a gaming environment, performed in accordance with one embodiment of the present invention.

FIG. 5B shows a flow diagram of a method 501 of player sign-up and initialization for players of wagering games to find friends in a gaming environment, performed in accordance with one embodiment of the present invention.

FIG. 5C shows a flow diagram of a method 502 of finding friends in a gaming environment, performed in accordance with one embodiment of the present invention.

FIG. 5D shows a flow diagram of a method 503 of communicating with friends and friend candidates in a gaming environment, performed in accordance with one embodiment of the present invention.

FIG. 6 shows a flow diagram of a method 505 for initialization of player friend-finding services for players of wagering games to find friends in a gaming environment, performed in accordance with one embodiment of the present invention.

FIG. 7 shows a flow diagram of a method 615 for a player to select friend-finding services, performed in accordance with one embodiment of the present invention.

FIG. 8 shows a flow diagram of a method 620 of defining communications preferences and restrictions for security purposes, performed in accordance with one embodiment of the present invention.

FIGS. 9A and 9B show a flow diagram of a method 530 for finding friend candidates using designated friend-finding services, performed in accordance with one embodiment of the present invention.

FIG. 10 shows a flow diagram of a method 940 for identifying friend candidates on external matching service sites, such as those publicly available over the Internet, in accordance with one embodiment of the present invention.

FIG. 11 is a diagram of a gaming machine constructed according to one embodiment of the present invention.
FIG. 12 is a block diagram of a network device that can be configured as a server or other data processing apparatus for implementing embodiments of the present invention.

FIG. 13 is a block diagram depicting a network of gaming machines and other devices within a gaming establishment.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Reference will now be made in detail to some specific embodiments of the invention including the best modes contemplated by the inventors for carrying out the invention. Examples of these specific embodiments are illustrated in the accompanying drawings. While the invention is described in conjunction with these specific embodiments, it will be understood that it is not intended to limit the invention to the described embodiments. On the contrary, it is intended to cover alternatives, modifications, and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims. Moreover, numerous specific details are set forth below in order to provide a thorough understanding of the present invention. The present invention may be practiced without some or all of these specific details. In other instances, well known process operations have not been described in detail in order not to obscure the invention.

Embodiments of the present invention include methods and apparatus that enable players of wagering games to identify, locate, and communicate with friends and potential friends in a gaming environment such as a casino. Existing friends and candidate friends located at designated areas and during designated timeframes can be identified and notified of each other’s presence. The term “friend candidate” generally refers to a player who meets some criteria for being introduced to another player. Embodiments of the invention incorporate techniques for filtering and selecting friend candidates by leveraging player preference data, relationship preferences and criteria, player tracking information, and other information gathered and maintained by gaming establishments for players, often those participating in casino loyalty and bonusing programs. Using these techniques and others described herein, friend candidates likely to have a successful friendship or other relationship are identified, selected, and introduced to one another. Embodiments of the invention further include techniques for establishing and facilitating communications between friends and friend candidates.

Application of the techniques described herein for identifying new and existing friends is desirable to further the fun and excitement of casino gaming. Friends who locate one another can discuss experiences, tell each other where they are, arrange to meet, and pursue more casino-related fun together. Friends are more likely to gamble together, eat and drink together, and pursue other types of fun. The techniques described herein enable groups of friends to be formed and expanded. The player benefits by increased social networking opportunities, which add to the fun and excitement of the gaming experience. The gaming establishment and gaming machine manufacturers only stand to profit by reaping the financial benefits of friends gambling longer and making more purchases while having fun together at the casino. It is likely that machines having friend-finding capabilities would be more frequently played than those without, with all else equal, because of the added excitement of the friend-finding capabilities described herein.

Some embodiments of the present invention provide for automatic friend identification responsive to a player inserting his player tracking card in the machine. When the player tracking card is read, and the player file is retrieved and processed, the player is notified of identified friends and friend candidates. Friends can communicate with one another by one or more of several communications paths. For example, players can send text, audio, and video messages between their gaming machines.

Other embodiments of the present invention provide for an interface to matching services accessible over data networks such as the Internet. In one embodiment, a player tracking server defines a transparent interface to the matching service and selects certain features of the matching service to present to the players. The player tracking server is also coupled to provide a layer of customized friend-finding features using player tracking and other gaming information.

In one example, when a casino customer inserts his player tracking card, the player tracking server or other data processing device accesses matching services and databases, such as myspace.com and true.com, and the like for friends. When friends, potential dating partners, or former schoolmates, for example, are identified as being located in the casino, a list of those friends and friend candidates is presented to the player. Communications sessions between machines can be initiated at the request of the player or players. Introduced players can set up meetings or dates, gamble together, form friendships, and pursue various mutual and social experiences.

FIG. 1 shows a casino gaming environment including systems and apparatus for players of wagering games to find friends, in accordance with one embodiment of the present invention. In FIG. 1, the system 100 includes a plurality of gaming machines 102a, 102b, and 104. In one embodiment, the gaming machines 102a and 102b are part of a bank of gaming machines served by a gaming machine server 106. The bank of gaming machines 102a and 102b are situated at a defined location A of the gaming environment, such as a position near the front door of the casino. Gaming machine 104 is situated at a different location B in the casino, such as a different floor or level than location A.

In FIG. 1, the gaming machines or devices 102a, 102b, and 104 may have configurations similar to those described below, and may have a wide variety of other configurations, and in general include any game which a casino or other entity wishes to monitor. For example, the gaming machine 104 may actually comprise a table game, such as a game table adapted to present the game of “Twenty-One” to one or more players. In such event, the table or other gaming machine may include one or more devices arranged to receive player identification information and otherwise permit implementation of the methods and apparatus as detailed below. Such devices may further include coin or token acceptors for accepting bets or wagers by each player, and a card reader for reading a player card. In one embodiment, information such as rate of play, average bet and time played may be input into a device by a dealer or other game operator as the game is played. A player tracking server 110 may be adapted to monitor the play of these and other gaming devices and game events. Such games/devices can include bingo, keno, and sports and other betting events.
In FIG. 1, the various gaming machines in system 100 are interconnected through a suitable network 108, such as a gaming network as described below. Gaming network 108 is a suitable wired or wireless network. In one embodiment, gaming network 108 is an entirely intra-casino communications network, meaning that the network can be generally characterized as within the casino and private; that is, the casino controls the network, and the network 108 is secured and protected from access over other data networks such as the Internet. In another embodiment, as described below, a network interface is provided so that gaming network 108 is accessible over an external public network, such as the Internet. In yet another embodiment, the network 108 comprises portions of a private network and a public network.

In FIG. 1, gaming network 108 may have a variety of configurations, and as noted above may comprise wired, wireless or a combination of wired and wireless communication pathways. Depending upon the configuration of the network 108, the network 108 may comprise a wide variety of components. For example, the network 108 may include wireless communication relays or transceivers. The network 108 may also include one or more hubs or routers. The network 108 may include dedicated or public lines. In general, the network 108 is simply adapted to permit the transmission of data or information (whether in analog and/or digital form) between the gaming machine server 106, gaming machines, and the player tracking server 110.

In FIG. 1, the player tracking server 110 is typically located in an area controlled by casino personnel, such as a back room or location 112 of the casino offices. The gaming machines 102a, 102b, and 104 are generally associated with the player tracking server 110. One or more appropriate communications links in gaming network 108, whether wired or wireless, permit information to be transferred to and from each gaming machine and the player tracking server 110. A network interface is associated with the player tracking server 110, and facilitates communications to and from the network 108. The player tracking server 110 may comprise a single computer or a group of computers associated with one another on a network. In one embodiment, the player tracking server 110 includes at least one data storage element for storing the player information. The data storage element may comprise a hard drive, RAM, ROM, tape drive, CD, DVD and/or other memory or data storage member or element.

In one embodiment, the player tracking server 110 is adapted to monitor play of the one or more gaming machines, including the activities of specific players. The player tracking server 110 is preferably arranged to obtain game play information, and manipulate that information, such as by aggregating game play data and displaying game play information. As detailed below, the game play information which is obtained and monitored may comprise a wide variety of information, such as the length of time of game play, amounts bet, amounts awarded, and a wide variety of other information. The game play data or information preferably also includes information regarding the player of the gaming machine or game event, such as the identity of the player. The player tracking server 110 may also store information regarding game play, including individual player game play. The player tracking server 110 is preferably adapted to display game play information to a user on a suitable display.

In FIG. 1, the system 100 further includes a player friend-finding server 114, provided to perform and facilitate methods and apparatus for players of wagering games in the casino to find friends, in accordance with embodiments of the present invention. In one embodiment, the player friend-finding server 114 is implemented as a component of player tracking server 110. In an alternative implementation, the player friend-finding server 114 is constructed as a separate device from the player tracking server 110. To perform the methods described herein, the player tracking server 110 and player friend-finding server 114 interact with one another and with other devices and gaming machines in the system 100. Thus, both player tracking server 110 and player friend-finding server 114 are coupled to gaming network 108 to communicate with the various devices in system 100, and with one another when constructed as separate devices.

In FIG. 1, a number of other devices or systems may be associated with the network 108 or otherwise be in communication with the player tracking server 110. For example, a variety of personnel/entities may be permitted to gain access to the information which is monitored and manipulated. A slot director may obtain access to the network 108 via a remote station or other suitable data processing device, one or more pit bosses through other remote stations, and sports book personnel or a sports book director through additional stations. Such stations preferably include a display for presenting information, one or more input devices for accepting user input, such as a mouse or keyboard, and a communications interface. A number of other systems or devices may be associated with the network 108, and thus the player tracking server 110, such as a keno system, sports betting system, and table games system. Each of these systems may include a variety of devices or elements, and may be arranged to generate and transmit information in a variety of forms or manners. For example, the sports betting system may be particularly adapted to aggregating and manipulating sports bet data or information.

FIG. 2 shows a system 200 for players of wagering games to find friends, constructed in accordance with another embodiment of the present invention. System 200 includes all of the components of system 100, and adds additional networks and devices to integrate casino friend-finding services with external matching services available over public networks such as the Internet 202. As shown, the Internet is in communication with one or more external, e.g., Internet matching services 204 such as myspace.com, true.com, friendsreunited.com, eharmony.com, match.com, and classmates.com. As used herein, “external matching service” and “Internet matching service” generally refers to any service accessible over data networks such as the Internet 202 allowing people to locate and/or communicate with each other.

In one example, before visiting the casino, player A accesses the matching service 204 and sets up an account with identified matches at the player's home computer 206. Player A's home computer 206 is situated at location C, such as the player's home or office, a remote location with respect to the casino. In another example, player B of gaming machine 104 holds a portable handheld data processing device 207, such as a Blackberry, laptop computer, or other suitable device capable of accessing external matching service 204 over the Internet 202 or other suitable data network by virtue of a wireless network interface 208 and communications tower 210. In this way, player B can also access one or more Internet matching services 204 over Internet 202 and establish an account with a listing of matches.

In FIG. 2, due to security concerns of most casinos and other gaming environment operators, a secure network
interface device 212 is coupled between the gaming network 108 and the Internet 202. In one embodiment, the secure network interface 212 is under the exclusive control of the casino 112, to prevent unauthorized access of servers, gaming machines, player accounts, and related services and financial accounts that might attract hackers. Those skilled in the art should appreciate that, in some embodiments, it is desirable for gaming environment operators such as casinos to implement and update secure network interfaces 212 with the highest levels of security to prevent tampering and theft by hackers operating computers in communication with the Internet 202. In some implementations, multiple levels or platforms define secure network interface 212. For instance, one security level provided by interface 212 shields casino data processing devices such as player tracking server 110 and related data storage devices and mediums from access over the Internet 202. A second level of security in interface 212 provides player tracking server 110 the capability to directly access and retrieve data from Internet matching services 204, but otherwise screens casino data processing apparatus such as financial data storage devices and mediums from access by matching services 204.

For additional security where the gaming machine 104 may be connected to the Internet 202 or some other public network, access to the gaming machine may be limited by an internal firewall within the gaming machine. The internal firewall may be hardware, software or combinations of both that prevent illegal access of the gaming machine by an outside entity connected to the gaming machine. For instance, an illegal access may be an attempt to plant a program in the gaming machine that alters the operation of the gaming machine from a World Wide Web site. The internal firewall is designed to prevent someone such as a hacker from gaining illegal access to the gaming machine and tampering with it in some manner. The gaming machines 102a and 102b may similarly contain internal firewalls.

In FIG. 2, in one embodiment, the gaming network 108 is implemented as an intranet, separate from the Internet 202. The gaming networks 108 may be comprised of fiber optic connections, copper Ethernet connections, wire-less connections or any combinations thereof. The gaming network 108 may be a local area network located in a casino and including a casino area network, a bonus game network, and a cashless system network. As illustrated, the gaming network 108 may be connected to a wide area network connecting many physical locations such as a wide area progressive network or the Internet 202.

In FIG. 2, game play information is transmitted to the player tracking server 110 regarding each gaming machine 102a, 102b, 104 or other game play device/event, such as devices and events associated with a table game, e.g., a Blackjack or Poker table. In one embodiment, game play information regarding a particular player’s activities is transmitted to the player tracking server 110. When a player wishes to engage the play of the gaming machine 102a or other gaming device/event, the player may identify himself. In one embodiment, a player identifies himself with his player card. As noted above, such a card may be encoded with identification information. When using the gaming machine, the player may insert their player card into the card reader associated with the player tracking device. The card reader reads the information from the card and then transmits the information. As illustrated in FIG. 1, the identification information may be transmitted directly from the gaming machine 104 to the player tracking server 110 or, from gaming machine 102a, first be transmitted to the gaming machine server 106 and then to the player tracking server 110.

In one embodiment, player identification information may be stored at the player tracking server 110. In response to a player identification code or number, such as find from the player card, more detailed information regarding the player may be obtained from the memory. In another embodiment, such detailed information may be stored remotely and either obtained by or transmitted to the player tracking server 110. For example, the player card may have an encoded identification code, such as AX183298K. This code may be associated with the player known as John Doe. A file may be associated with the player’s code, which file includes a variety of information such as the full name and address of the player, their telephone number, accrued points, and other data. In response to receiving the player’s code, the player tracking server 110 may obtain information regarding the player from the file or other location.

Game play information is also transmitted to the player tracking server 110. In accordance with a preferred embodiment of the invention, the information is related to player gaming activity. For example, the gaming machine 102b may transmit information regarding a player’s wagers, time play began, time play ended, awards or payouts, and other information. Such information may further include, but is not limited to the following: total number of gaming machines presently in use; the number of players of the gaming machines in use which are presently active or playing a game; the number of players of gaming machines who have provided their player identification information (or the number of players of machines who have not); the type of gaming machines which are being played; and a wide variety of other information.

A display coupled to the player tracking server 110 is operable to display interfaces presenting detailed information regarding players or patrons, such as players of the gaming machines or other devices of the system. When players identify themselves, such as by using a player card, then the information may include information from that player’s file, such as the player’s name, number of accrued points, nickname or preferred name and/or other information. If a player of a game has not identified themselves, then the player may be identified anonymously.

The game play information is preferably generated at the gaming machine 102b or other gaming device. The information may be aggregated and transmitted at intervals, such as predetermined intervals of time, to the player tracking server 110. In certain embodiments of the invention, the transmitted information may comprise “point” or similar information. The gaming machine 102b or other device may be configured to generate point information based upon particular player events, such as the placing of bets. This point information may be transmitted to the player tracking server 110. Of course, the gaming machine 104, slot system, or other device or element may be adapted to utilize a particular communication format or format data or information in one or more manners which is different from that of other systems. In a preferred embodiment, the player tracking server 110 is provided with an interface allowing the data in different forms to be integrated and presented cohesively.

FIG. 3 shows a block diagram of a system 300 including apparatus and interfaces to facilitate players finding friends in a gaming environment, constructed according to
one embodiment of the present invention. In FIG. 3, a portion of gaming machine 102a is shown, including one or more displays 302, and additional components such as camera 304, microphone 306, and speaker 308. In FIG. 3, a portion 303 of display 302 is dedicated to outputting the games of chance played on machine 102a. This includes the outcomes of the wagering game, as well as credits, history, menus, and other information displayed on conventional electronic gaming machines.

[0071] In addition, in FIG. 3, a portion of the display screen 302, or a secondary or different display screen, provides a graphical user interface (GUI) for access and use of player friend-finding services in accordance with embodiments of the present invention. For instance, in the friend-finding interface portion of display 302, an image of player A 310, identifying player A of gaming machine 102a, is displayed next to the name of player A. For example, such an image can be submitted as part of player A’s profile during sign-up for player friend-finding services, as described below.

[0072] In FIG. 3, display 302 includes a buddy list 312 identifying friends and potential friends of player A, using friend-finding methods and apparatus in accordance with embodiments of the present invention. For instance, buddy list 312 identifies three friends of player A: Sam, Dave, and Ed. An additional region of display 302, in one embodiment, includes a “buddy data” selection 314, the clicking or touching of which retrieves additional data describing the individuals in buddy list 312, as described below. In one embodiment, under buddy list 312, each friend is identified by name, image if available, and possibly additional information such as last login time. In one embodiment, a selection 316 next to friends with whom communications are permitted and authorized, as described below, allows player A to select and open communications with particular friends. For instance, selection 316 can provide an instant message (IM) to be sent to the selected friend at the gaming machine the selected friend is playing or a portable data processing device carried by the player, such as a cell phone or Blackberry. Additional communications capabilities are described below.

[0073] In FIG. 3, gaming machine 104 shows a display 318 with a different menu of features provided to player B, in accordance with embodiments of the present invention. In display 318, player Sam is operating gaming machine 104. Thus, in one embodiment, at the top of the screen, Sam’s name and digital photograph 320 are displayed. The game or games played on machine 104 are output in a field 322 of display 318. In Sam’s graphical user interface, player A has been identified as a friend recently logged into player tracking server 110. In addition, the graphical interface presented to Sam on display 318 provides selections which can be touched or clicked to find additional friends. These selections include “view casino buddies” button 324, “find casino friends” button 326, and “find Internet matches” button 328. Selection of the view casino buddies button 324 causes gaming machine 104 to request a list of casino buddies currently or recently logged into player tracking server 110 and, therefore, identified as being in the casino 110. Selection of the find casino friends button 326 causes gaming machine 104 to send a request message to player friend-finding server 114 to perform methods described below to identify persons in the casino as friend candidates and present the information on the graphical user interface of display 318.

[0074] In FIG. 3, selection of the find Internet matches button 328 causes the gaming machine to interface with one or more designated Internet matching services 204 over a secure Internet connection and retrieve information identifying matches and potential matches as friend candidates. In one embodiment, such information is automatically retrieved by player friend-finding server 114 at login, and readily available to the player upon selection of button 328. Upon retrieving Internet matching information, the player friend-finding server 114 can check names for Internet matches who have accessed the player tracking server 110 or otherwise identified themselves as being in casino 112 or a designated location in casino 112 during a designated timeframe, as further described below. In addition, selection of a single “find friends” button 330 allows for the player to find friends over all three friend-finding selections 324, 326, and 328, and retrieve identifications of any and all possible friends from the available friend-finding services 324-328 for display in the buddy list 312.

[0075] FIG. 4 shows a table representation of friend-finding criteria stored for a plurality of players for the purpose of finding friends in a gaming environment, in accordance with one embodiment of the present invention. In FIG. 4, the table 400 is illustrated in two dimensions, with players listed in the rows, and the columns identifying and categorizing information for finding friends using the various friend-finding services available, for each player. In alternative implementations, table 400 can be implemented as a multi-dimensional hierarchy of information and organized appropriately to facilitate leveraging of the friend-finding services as described herein.

[0076] In FIG. 4, the information set forth in table 400 can be stored in one or more databases controlled, in one embodiment, by player friend-finding server 114. In another embodiment, a portion of the information in FIG. 4, such as player tracking information, is maintained in a database or other suitable storage medium controlled by player tracking server 110. Thus, in some embodiments, the data in table 400 represents a combination of separately stored fields of data maintained by various servers and any other data processing devices. In one embodiment, certain of the information in table 400 is stored in a player tracking account, while other information is stored on a player tracking card carried by the player. The information can be distributed to various storage mediums and organized appropriately to make efficient use of storage space and ease the process of retrieving and updating friend-finding criteria.

[0077] In FIG. 4, the rows 402 in table 400 identify specific players participating in the casino loyalty program and friend-finding services provided by the casino. In one embodiment, each player’s account identifies information to be retrieved and operated upon in performing the various friend-finding services described herein. For instance, column 404 provides a list of identified friends of the particular player 402. For instance, player A is friends with Roger, Dave, and player C. In one embodiment, as described below, these friends are identified as a preliminary matter when the particular player signs up for the friend-finding services.

[0078] In FIG. 4, a second column in table 400 sets forth player tracking information 406 that can be used as friend-finding criteria. Various player tracking information can be used to identify friend candidates with similar interests and situations. For instance, in FIG. 4, player A has a list of preferred games, and a casino status identifier, providing an indication of a level of wagering activity or additional gaming behavior. The status level, such as “Gold,” often qualifies that
player for a certain status or treatment in a casino loyalty program to receive various comps, awards, and other benefits. Other player tracking information 406 stored for various players can include amounts wagered, time of last login or access of the player tracking server 110, and other various information. Similar information is stored for player B and other players identified in table 400.

[0079] In FIG. 4, in column 406, the casino status identifier field may be structured to display some indication of a particular player’s status relative to certain criteria. For example, graphical information may be provided which indicates a level of a player’s play, such as related to amounts bet during a specified period of time. In one example, graphical information regarding a player’s level of play comprises a symbol having a specified color. The particular color of the symbol may indicate the level of play.

[0080] A wide variety of information may be displayed, including information which indicates a level or status of other activities of a player (other than rate of betting) such as a total number of games played by a player, the total time a player has played a particular machine, and other characteristics. Other player tracking information 406 can include present play actions, such as most recent wagers, game results, and the type of game played. The information may also include game play history, including a summary of play activity. Such information may include the games which the player plays and the amounts bet, information regarding the number of visits of the player to the establishment, actual win and calculated theoretical win information, amounts bet over time, and a wide variety of other information.

[0081] In FIG. 4, in column 408, additional friend-finding casino information is set forth. This information can be stored, for example, in a player tracking account maintained by player tracking server 110 for the various players, and stored on other suitable storage mediums, such as player tracking cards and other memory devices. Various additional information available to the casino can be used for friend-finding purposes, such as favorite restaurants, preferred match traits, e.g., age, gender, astrological sign, and other interests such as particular sports, types of shows, and hotels. Such information can be stored by the player tracking server 110 or other related server as part of a player account to provide bonuses, comps, awards, and directed marketing to players based on their designated interests.

[0082] In FIG. 4, column 410 of table 400 identifies specific Internet matching services in which players participate, outside of the gaming environment. For instance, player A participates in eharmony.com and myspace.com. Player B participates in true.com, friendsreunited.com and myspace.com. Often, such matching services 410 are identified as part of the player sign-in procedure, described below, and can be updated as desired by the player. In addition, in some implementations, matches and other pertinent information are automatically retrieved by player friend-finding server 114 independent of player login or selection, for instance, at regular time intervals, so such information is readily available for the player at login or selection of the find Internet matches button 328. In another example, Internet matching services are identified on a player tracking card carried by the player. In another instance, such information is specified and stored as a component of player tracking information maintained by the player friend-finding server 114 or player tracking server 110. In addition, related fields in the database storing the friend-finding criteria of table 400 store additional information for interfacing with the identified Internet matching services 410 and retrieving match information for player friend-finding server 114 to perform the friend-finding methods described herein.

[0083] FIG. 5A shows a flow diagram of a method 500 for players of wagering games to find friends in a gaming environment, performed in accordance with one embodiment of the present invention. As shown, method 500 can generally be divided into three stages: a player sign-up and initialization stage 501, a friend-finding stage 502, and a communications stage 503. The steps categorized under the various stages represent one implementation of methods performed in accordance with the present invention. Certain of these steps in the various stages can be omitted or replaced with alternative steps within the spirit and scope of the present invention.

[0084] FIG. 5B shows a flow diagram of a method 501 of player sign-up and initialization for players of wagering games to find friends in a gaming environment, performed in accordance with one embodiment of the present invention. In FIG. 5B, the method 501 begins in step 505, in which player friend-finding services provided in accordance with embodiments of the present invention are initialized. For instance, suitable friend-finding services include a buddy list 512 and a “find casino friends” option 526, as described above with respect to FIG. 3. In addition, Internet matching services 528 can be accessed over the Internet 202 or another suitable data network. In step 508, one component of the initialization of player friend-finding services is a sign-up procedure, which is often implemented as an augmentation of the sign-up procedure for player tracking services. That is, additional information, as described herein, can be gathered from players when signing up for a player tracking service, when the player also desires to participate in friend-finding services. The player friend-finding services initialization procedure is described in further detail below with reference to FIG. 6.

[0085] In FIG. 5B, the player identification stage of method 500 proceeds from step 505 to step 510, in which player identification information is received, generally at a gaming machine. Step 510 represents the initial login or other player identification occurring when a player inserts a player tracking card, for instance, in a player tracking terminal of a gaming machine. In other examples, player identification information can be received at various player identification devices, such as a terminal associated with a sports betting game, or a table game, for instance, through a dealer or other casino attendant. Thus, methods described herein are applicable not only to electronic gaming machines, but also to various other betting activities, tables, and devices available in modern casinos. In step 510, location identification information is also preferably received by a player tracking server 110 or other suitable device performing methods described herein. This location identification information generally identifies a geographic location, for instance, on a casino floor map, identifying particular coordinates and a region in which the gaming machine or other wagering device above receives the player identification information.

[0086] The player identification information can be input using various methods, in addition to player tracking cards. For instance, the player can sign in using a graphical user interface, with a traditional keyboard and mouse or touch-screen keyboard integrated with a display on the gaming machine. In addition, biometrics identification services can be implemented on a gaming machine. These and other techniques are considered within the spirit and
scope of the present invention for receiving player identification information to identify a player, in step 510.

[0087] In FIG. 5B, in step 515, after the player identification information is received in step 510, the gaming machine or other device at which the identification information is received sends the player identification information over gaming network 108 to the player tracking server 110 and, in some instances, to the player friend-finding server 114 operated by the casino. When the player tracking server 110 receives the player identification information, the player tracking server 110 accesses one or more player tracking accounts it maintains, and identifies the player tracking account associated with the received player identification information. The player tracking server 110 then reads and, in some instances, updates the player tracking information maintained for the player from whom the player identification information is received. When the retrieved player tracking information indicates that player friend-finding services are authorized and permitted, in some embodiments, player friend-finding services are initiated, as described below.

[0088] In FIG. 5B, in step 520, a gaming session begins on the gaming machine or other device or table game at which the player is located. In other words, the player plays games on the gaming machine or apparatus. Those skilled in the art should understand that one or more gaming sessions in which the player places wagers to play games of chance on the various gaming services and devices can occur before, during, and after the friend-finding services and communications described herein. Step 520 is provided simply to indicate that the friend-finding services and related communications are performed in the context of wagering activities in a gaming environment such as a casino.

[0089] In FIG. 5C, the method 500 proceeds from the player sign-up and initialization stage 501, implemented in one embodiment as steps 505-520, to the friend-finding stage 502, in which friend-finding services provided in accordance with embodiments of the present invention, are accessed and performed. In one embodiment, the friend-finding stage 502 begins in step 525, in which friend-finding services are initiated. In one implementation, friend-finding services are automatically initiated responsive to a player login at a player tracking terminal of the gaming machine or other wagering device or activity.

[0090] The player tracking account maintained for a particular player often identifies one or more player friend-finding services in which the player participates or desires to participate. In another embodiment, the player tracking card carried by the player stores information indicating that player friend-finding services are to be used, and, in some implementations, identifying the particular player friend-finding services in which the player participates. In an alternative implementation, upon insertion of a player tracking card or other identification of the player, the player can sign up for and participate in one or more friend-finding services using a gaming machine interface, such as a display integrated with a touch screen displaying a keyboard.

[0091] In FIG. 5C, in step 525, responsive to a player request for friend-finding services, either at sign up for the player tracking program or at the gaming machine, friend-finding services are provided to the player, for instance, as graphical buttons 324, 326, 328, and 330 on a graphical user interface of a display on the gaming machine. Thus, for instance, a player can click on the “view casino buddies” button 324 to view friends whom the player previously identified and are present in the casino during a designated timeframe and designated location. Similarly, the “find casino friends” button 326 can be pressed to identify new friends in the casino who match some friend-finding criteria, as described above with respect to FIG. 4 during a designated timeframe and at a designated location.

[0092] In FIG. 5C, the friend-finding stage of method 500 proceeds from step 525 to 530, in which friend candidates are identified using the selected friend-finding services from step 525. That is, friends on a casino buddies list maintained for the identified player can be retrieved, as well as friend candidates meeting criteria for new casino friends, and Internet matches meeting matching criteria specified on external matching services and, in some instances, as additionally specified with friend-finding criteria set forth in table 400. The procedure for identifying friends and friend candidates using the available friend-finding services, according to one embodiment, is described below with respect to FIG. 9.

[0093] In FIG. 5D, after finding friends and friend candidates in the friend-finding stage 502, the method 500 proceeds to the communications stage 503, in which players are provided with the opportunity to request, initiate, and establish communications with friends and friend candidates identified using the friend-finding services described herein. For instance, after a list of friends and friend candidates are presented to a player, such as on display 302 of gaming machine 102 in FIG. 3, the player is presented in step 535 with the option of requesting communications with a friend or friend candidate. For instance, in one implementation, the player simply clicks on a digital image, such as a photograph of the identified friend, to request communications. In another example, a suitable graphical button or other selection is displayed on the graphical display next to the name of the identified friend or friend candidate. Depending on the desired implementation, the player can select, by clicking or otherwise, an identified friend or friend candidate for communications.

[0094] In one implementation, players are provided with the option to screen their profile or other identification information from others. For instance, a player in a casino who wishes to remain anonymous or unavailable to friends and others may wish to hide that player’s profile from the list of available players maintained by player friend-finding server 114. Preferably, when the screening option is implemented, the player is able to screen his or her profile at anytime during a gaming session, for instance, upon login at the gaming machine. Thus, in step 535, when a player has opted to screen his profile, regardless of whether that player meets friend-finding criteria for another player, the screening player’s profile will not be displayed until a later time when the player makes his or her profile public again.

[0095] In FIG. 5D, when the player does not request communications with any identified friends or friend candidates, the player can continue placing wagers or otherwise interacting with the gaming machine during a gaming session, in step 540. In one embodiment, the friend-finding services are automatically performed and repeated over designated time intervals during a gaming session, so new friends and friend candidates can be identified after a gaming session has begun. For instance, in one embodiment, the player friend-finding server 114 searches for friends and friend candidates using the available options every 60 seconds during a gaming session. Thus, as identified friends and friend candidates leave and new friends and friend candidates appear on the scene, the list of
friends and friend candidates is updated in near real-time. This way, the player is presented with an accurate indication of which friends and friend candidates are physically present in the gaming environment at any given time. In one embodiment, as new friends and friend candidates are identified during a gaming session, the method proceeds to step 535 to prompt the player for communications with newly identified friends and friend candidates in near real time.

[0096] In FIG. 5D, when the player selects to communicate with identified friends and friend candidates in step 535, the method proceeds to step 545, in which the selection is passed from the gaming machine to the player friend-finding server 114. This selection can indicate one or more friends and friend candidates with whom communication is desired. Responsive to receiving the selection, in step 545, the player friend-finding server 114 confirms that the selected friends and friend candidates are still present in the gaming environment. In one embodiment, preferably geographical regions and timeframes are specified to restrict the determination. For instance, some casinos are so large that it would be impractical to simply identify a friend as located in the casino. Thus, during the sign-up procedure of step 505, the player can specify a distance from the player’s machine within which friends and friend candidates must be situated to be identified. For instance, the player could specify 100 feet, 500 feet or 1000 feet as a radius from where the player is located.

[0097] Similarly, a timeframe can be specified during sign-up or at initiation of friend-finding services in step 525 designating a window within which friends must have logged in or otherwise been identified in the gaming environment. For example, the player can specify a 20-minute timeframe in which other players must identify themselves at a particular location in the casino to be presented to the player as a friend or friend candidate.

[0098] In FIG. 5D, in step 545, the player friend-finding server 114 confirms that selected friends and friend candidates are still present, that is, meeting the designated location and timeframe parameters specified by the player, or in some implementations, automatically specified by the casino. When the selected friend candidates meet the time and distance requirements, a message is sent from the player friend-finding server 114 to the gaming machine at which the player is located, indicating that friends are present. Responsive to this confirmation message, a suitable message is displayed to the player on a display of the gaming machine, such as “Dave is still in the casino. Would you like to chat with him?” Other suitable messages can be output to inform the player of the status of a selected friend, as will be appreciated by those skilled in the art.

[0099] In one implementation, players participating in the player friend-finding services are able to leave messages as to their status with the player friend-finding server. For example, when a player participating in the friend-finding services is moving about a casino and has been unable to find a friend, that player can leave a message with the friend-finding server indicating an intended player recipient and specifying some information, such as a time and location to meet. Thus, when Dave terminates game play on a particular gaming machine, Dave can leave a message that he is moving to the sports bar, and an intended recipient for the message. Thus, when player A logs onto a machine some designated time later, Dave will appear on the buddy list 312 with a message indicating the time at which Dave logged off of the machine he was playing, and his intended destination of the sports bar. Thus, player A can be provided with some opportunity to find Dave.

[0100] In FIG. 5D, in step 550, after confirming that selected friends and friend candidates are present, one or more communications paths are determined for the players to communicate with one another in accordance with preferences specified by the players and restrictions implemented by the casino or other gaming machine provider, depending on the desired implementation. In one example, text messaging services are implemented in text boxes displayed on the graphical displays of gaming machines so a player and a selected friend can communicate in near real-time by typing text messages and sending them to one another. In addition, speakers and microphones are implemented on the gaming machines so the players can communicate by speaking to one another over communications lines coupled between the gaming machines, for instance, as part of the gaming network 108. In addition, in some implementations, video communications are implemented in the form of video cameras mounted on the gaming machines and coupled to one another over video communications channels of the gaming network 108 or other suitable communications network.

[0101] In step 550, one or a combination of the various communications options are selected by the player. Responsive to the selections, the friend-finding server 114 checks the selections against player preferences for communications specified by the respective players. For instance, some players may indicate during sign-up that only text messaging is permitted. In another example, a player can specify that audio and video communications only be enabled with friends appearing on a buddy list. In another example, when communications are requested from a player during a gaming session, the player is provided with the opportunity at that time to select an appropriate communications path depending on who is requesting communications. In addition, when communications paths are determined in step 550, in one embodiment, the player friend-finding server 114 determines that mutual player preferences are satisfied. Thus, when one player desires video and audio communications but the friend candidate specifies only text, the player friend-finding server will output a message to the player requesting video and audio, indicating that only text messaging is permitted, and requesting authorization to proceed with text communications. Preferably, to maintain overall player satisfaction and privacy of those participating in the player friend-finding services described herein, mutual preferences for communications are satisfied before communications paths are opened.

[0102] In FIG. 5D, in step 550, the casino or other gaming establishment operator can specify levels of communications. For instance, to maintain overall privacy, the casino may restrict initial communications between a player and a friend candidate who have not communicated with one another through the casino friend-finding services, to text messages only. Also, the casino may automatically enable video and audio communications between players who are on one another’s buddy lists. These and other restrictions can be placed by the casino on communications to provide players with the desired communications while respecting player privacy.

[0103] In FIG. 5D, after determining the appropriate communications paths in step 550, the method proceeds to step 555 in which a communications session is opened between the player and selected friend or friend candidate over the
designated communications paths. Suitable communications sessions can be performed using instant messaging “IM” services implemented in the form of pop-up messages on a display screen, as well as near real-time text messages in text boxes, and audio and video communications implemented using, for example, video cameras and speakers. Through these and other options for communications, provided in accordance with the desired implementation, the player and friends can communicate with one another.

In FIG. 5D, in step 555, in one implementation, three-way and multiple party communications sessions can be established. For instance, when three or more players locate one another using the friend-finding services described herein, a chat room can be initiated, allowing the players to communicate with one another. Thus, a group of friends can easily discuss and agree in near real-time as to an intended destination and time to meet one another for gaming and other various fun activities.

FIG. 6 shows a flow diagram of a method 605 for initialization of player friend-finding services, representing a sign-up procedure as mentioned above with reference to FIG. 5. The method 605 begins in step 605, in which a player inputs personal information to create or update a player tracking account. For instance, step 605 can occur when the player initially signs up for a player tracking program offered by a casino. The player information received in step 605 includes conventional player tracking information, as well as certain additional profile parameters to be used by friend-finding services described herein. In fact, additional profile information can include a digital image of the player to be displayed on other players’ interfaces when the player is identified as a friend or friend candidate. Other friend-finding profile information received in step 605 can include that described above with reference to FIG. 4.

In FIG. 6, the method proceeds from step 605 to step 610, in which the player is presented with the opportunity to participate in friend-finding services provided by the gaming environment. For instance, at a kiosk or other device, the player can be prompted with a graphical button stating, “Participate in friend-finding services?” When the player selects the friend-finding services option, in one embodiment, the kiosk or other data processing device prompts the player to input additional information to be used by the friend-finding services. For example, the player may provide a timeframe selection and location selection to define a time window and distance from the player’s location to find friends and friend candidates. For instance, a player can specify that the player only desires to be notified of friends who were identified by the player tracking server 110 within 10 minutes of the time of initiation of friend-finding services, and within 500 feet of the player’s location at that time. In another embodiment, the timeframe and location parameters are automatically set by the casino.

In FIG. 6, the method proceeds from step 610 to step 615, in which the player selects particular friend-finding services in which to participate. The various services that can be offered include those described above, such as the buddies list, casino friend-finding services, and Internet matching services. The selection of friend-finding services in step 615 is further described below with reference to FIG. 7.

In FIG. 6, the method proceeds from step 615 to step 620, in which communications preferences and restrictions can be defined for player security. Such preferences and restrictions are desirable for both casinos and players to designate preferred mediums of communication with friends and friend candidates as well as set restrictions on who can communicate with the player, and what personal player information can be viewed by other players. The definition of communications preferences and restrictions in step 620 is further described below with reference to FIG. 8.

FIG. 7 shows a flow diagram of a method 615 for a player to select friend-finding services, performed in accordance with one embodiment of the present invention. The method 615 begins in step 705, in which one or more internal casino friend-finding services are presented to the player, for example in the form of a menu on a graphical user interface, as shown in FIG. 3. In some implementations, casinos and gaming machine manufacturers may desire that no external matching services, such as those available over the Internet, be made available to players. Such is often due to security reasons, in that some casinos prohibit any Internet or other external data network connection to the gaming network 108. Thus, in some implementations, the method 615 is performed to include only steps 710-730, as described below, omitting the additional steps described with respect to external, e.g., Internet matching services.

In FIG. 7, in other implementations, casinos having a secure network interface 212 to the Internet 202, as described above with reference to FIG. 2, provide for the integration of casino friend-finding services with matching services accessible over the Internet 202. In this way, the casino can provide for both existing relationships, e.g., buddy lists, maintained within the casino and outside the casino, and friend-finding services, using casino resources and Internet resources to provide the player with maximum friend-finding opportunities.

In FIG. 7, the presentation of internal casino friend-finding services begins with the offering of a buddy list to the player, in step 710. When the player chooses to use a buddy list, in step 715, the player is then provided with an interface to input existing friend information. Often, this includes the names of friends the player wishes to identify within the casino. In one implementation, the inputted names of friends, and any additional friend identification information is checked against the player tracking accounts maintained by the player server 110 to identify those players known to the casino. The identified friends are then linked as “buddies” of an account maintained on behalf of the players signing up for friend-finding services.

In FIG. 7, the method proceeds to step 720, in which the player is presented with the option of participating in casino friend-finding services. Such friend-finding services are offered by the casino to find candidates on behalf of the player using friend-finding criteria, as described above with reference to FIG. 4. In one implementation, in step 720, when the player opts to participate in casino friend-finding services, the method proceeds to step 725, in which the player can select player tracking criteria, such as player tracking information 406 in FIG. 4, or any other information described above with reference to FIG. 4, to use as criteria to identify friend candidates.

In FIG. 7, in step 730, the player can select additional friend-finding criteria and information 408, as shown in FIG. 4. Such additional friend-finding information can include other gambling and entertainment-related information indicative of the player’s interests in a new friend. For example, additional friend-finding casino information can include favorite restaurants, preferred match traits, e.g., age,
gender, sexual orientation, and other interests. The selection of player tracking information and additional friend-finding information maintained in table 400 of FIG. 4 can be input using punch cards, or graphical user interfaces with categories and selections for the player. The selected friend-finding criteria is then maintained in a suitable form, such as table 400, and associated with an account maintained for the player.

In FIG. 7, when external, e.g., Internet matching services are made available, the player is presented with the option of accessing match information on the external services as part of the player friend-finding services offered by the casino, in step 735. When the player selects external matching services, in step 735, the method proceeds to step 740, in which the player can identify and select external matching services with which the player participates. Preferably, as shown in FIG. 2, a player has already established a membership in the desired Internet matching services at a home or office personal computer or other suitable data processing device before visiting the casino. The player, in step 740, can select Internet matching services, such as myspace.com, eharmony.com, friendsunited.com, true.com, classmates.com, and others. Those skilled in the art should appreciate that future social websites available over the Internet are considered matching services within the spirit and scope of the present invention.

In FIG. 7, in step 745, after available Internet matching services are identified and selected by the player, login and password procedures are defined, in step 745, for Internet matching services that are secure. These include sites such as eharmony.com and match.com, requiring a user name and password to log into an account maintained for the participant. Alternatively, other open sites, such as myspace.com, need not be addressed in step 745, and the method can proceed to step 750 described below. In step 745, the player is presented with security options for the handling of logins and passwords. The options allow the player to choose a level of security for accessing external matching services that is comfortable to the player. Generally, many matching service participants would be adverse to storing login and password information on a server out of their control, such as a casino server or database. Other participants, however, would not object if it would facilitate the friend-finding services. Thus, in one implementation, in step 745, login and password procedures can be defined in a more secure manner for some players, and in a less secure manner for others.

In FIG. 7, in step 745, one less secure option, from the perspective of a player, is to simply request that the player provide login and password information and have such information stored on a suitable storage medium controlled by the casino, such as under a player tracking account for the player. The casino would then preferably establish a secure communications path over secure network interface 212 in FIG. 2, with the designated Internet matching services 204 to access and retrieve information for the player.

Alternatively, another login and password option under step 745 includes storing the player login and password information for external matching services on the player tracking card or other suitable memory device carried by the player. Then, the information is only retrieved and stored in short term memory at the initiation of or during a gaming session, when the player inserts the card in the player tracking device of a gaming machine or other identification device when participating in a wagering game. In this implementation, the login ID and password are read off of the card and provided to the player friend-finding server 114 to access designated Internet matching services 204 over the Internet 202. For instance, in one embodiment, immediately upon insertion of the player tracking card in a player tracking device, the login ID and password are retrieved, provided to the player tracking server 110, used to access designated Internet matching services associated with the login ID and password, and Internet matching information is retrieved.

In FIG. 7, in step 745, another implementation of defining the login and password procedure includes specifying that login IDs and passwords are only to be provided on an as-needed basis during the gaming session. In this implementation, step 745 simply presents the player with the option of designating that login IDs and passwords for external matching services will be provided only when those sites are accessed. Later, at the initiation of player friend-finding services, as described herein, the player is presented with the option on a display of the gaming machine of interfacing with the external matching service. In one implementation, the player selects particular matching services, as designated during sign-up or at a later time, and login IDs and passwords are then read off of the player’s tracking card or typed into a text box on a graphical interface using a keyboard or keypad implemented on the gaming device, for instance, using a touch screen overlaying a display on the machine. A secure communications path is then established between the gaming machine and the player tracking server 110, and between the player tracking server 110 and Internet matching service 204, for access of the player account.

In FIG. 7, upon completion of the selection and set-up of both internal friend-finding services offered by the casino and any external matching services, the selections of the various services and player information used to access and perform the various friend-finding services is received and stored in an account associated with the player, such as a player tracking account. The information can be structured in various forms, such as the table format of FIG. 4. In one embodiment, the received player information is stored at a database or other suitable storage medium coupled to the player tracking server 110 and/or friend-finding server 114. In another implementation, such data is stored on a portable memory device carried only by the player, such as a player tracking card or smart card. In the latter embodiment, such information is retrieved from the card only when friend-finding services are initiated or requested by the player. In addition, step 750 is generally performed at the end of the sign-up process, and again performed when there are any updates made by the player or by the player tracking server 110 to the stored information. For instance, player tracking information components 406 of the player information are often updated responsive to wagering activity and other actions taken by a player as recorded by a casino or an affiliate of the casino.

FIG. 8 shows a flow diagram of a method 620 of defining communications preferences and restrictions for security purposes, performed in accordance with one embodiment of the present invention. The method 620 can be performed at sign-up for friend-finding services, as described above with reference to FIG. 6, as well as updated at later times as desired by the player. The method 620 begins in step 805, in which the player is presented with the option of restricting communications on who can communicate with the player. For instance, a player may specify that only indi-
viduals identified on the player’s buddy list can contact or otherwise communicate with the player during a gaming session. In another example, a player specifies that only gold members, that is players achieving a “gold” level status based on wagering activity are allowed to send instant messages or other forms of communications to the player when identified. Other examples of individual communications restrictions include only members of a particular gender, only individuals within 5 years of the player’s age, only myspace.com participants, and other suitable parameters desired by the player. By the same token, some players may choose to set no restrictions on who can communicate with them, in step 805, desiring maximum leveraging of the friend-finding services described herein.

In FIG. 8, the method proceeds from step 805 to step 810, in which preferred communications paths and limitations are set by the player. Generally, in step 810, the player indicates whether and by what means friends and friend candidates can communicate with the player. For instance, in one implementation, the player specifies who is able to initiate communications: only the player, both the player and friend or friend candidate, or only the friend. Also, in step 810, the player can be presented with a list of available communications methods, and the player selects which communications are acceptable and preferred. For instance, the player can authorize certain communications paths such as text messaging between gaming machines, audio and/or video, and delayed messaging, for instance, leaving an email or other suitable message to be stored for later access by the player. In one implementation, upon selection of the authorized communications levels, the player also specifies a hierarchy of the selected communications mediums. Thus, in this implementation, before communications are established, the friend-finding server 114 checks both the player’s and friend’s or friend candidate’s preferred communications paths to select a path that is agreeable to both players.

In FIG. 8, the method proceeds from step 810 to step 815, in which viewing restrictions can be set on player information. For instance, a player participating in a friend-finding service performed in accordance with an embodiment of the present invention can indicate what information about that player is available for viewing by other participants. A wide variety of information could be shown, based on the available player information maintained in the player tracking account and as components of the friend-finding criteria in table 400 of FIG. 4. Often, a player may desire that only the name of the player or nickname or ID of the player be displayed. In another example, a player may desire that only his picture be shown. Other various information can be selected for display to others, for example, in buddy data field 314 of FIG. 3, such as last login time, current game being played, phone number, age, marital status, buddies list, preferred Internet matching services, and additional friend-finding information and player tracking information described herein. Often, players will de-select or screen such information from display, desiring confidentiality of such information.

FIGS. 9A and 9B show a flow diagram of a method 530 for finding friend candidates using designated friend-finding services, performed in accordance with one embodiment of the present invention. As mentioned above with reference to FIG. 5, in one embodiment, players are presented with the option 330 of finding friends using all available friend-finding services to the casino. When the find friends button 330 is selected in FIG. 3, all of the steps described below with reference to FIG. 9 are automatically performed. Alternatively, as described below, the player is presented with options, such as options 324, 326, and 328 in FIG. 3, to select particular friend-finding services to identify friends and friend candidates.

In FIG. 9A, in step 905, internal casino friend-finding services are presented to the player, for instance, in the form of a graphical user interface 318 of a gaming machine 104, as shown in FIG. 3. In one embodiment, the internal casino friend-finding services include a “view casino buddies” option 324 and a “find casino friends” option 326. These options are referred to as “internal” to the casino, because no interface or connection is needed to the Internet or other external data network. The friend-finding services can be performed entirely within the casino using casino-controlled servers and databases.

In FIG. 9A, in step 910, when the player selects the “view casino buddies” selection 324, the method proceeds to step 915, in which the server responds to the selection by identifying buddies of the requesting player who have been located by the player tracking and/or player friend-finding server during a designated timeframe and at a designated location or radius. For instance, returning to FIG. 4, when player B has been identified as the player of gaming machine 104 using a player tracking card, Roger and Sam are identified in column 404 of table 400 as buddies of player B. The player friend-finding server 114 then checks whether Roger and Sam have been identified as active in the casino or other gaming environment during the designated timeframe and at the designated location. For instance, the player friend-finding server determines that Roger has logged into a machine 100 feet away from the identified location of player B in the last 15 minutes. During sign-up, player B indicated a timeframe of 30 minutes and radius of 500 feet. Thus, Roger is identified to player B under buddy list 312 of display 318, in FIG. 3. On the other hand, while Sam is identified as a buddy of player B in buddies list 404, Sam was last identified by the player tracking server 110 two days ago. Thus, Sam is not identified under the buddies list 312 presented to player B.

Those skilled in the art should appreciate that timeframe and location parameters can be defined as appropriate for the particular gaming environment and player preferences. In addition, the location parameter can be defined in terms of geographical distance, as well as by grouping of machines. For instance, certain banks of machines known to be situated in a particular location of the casino can define the location parameter. Thus, any friends on the buddies list 404 who play on the designated bank or banks of gaming machines will be identified on the buddies list.

In FIG. 9A, steps 910 and 915 both proceed to step 920, in which the player is presented with the selection of finding casino friend candidates, for instance, as option 326 in FIG. 3. When the player selects option 326, the method 530 proceeds to step 925, in which player friend-finding criteria is retrieved from a database or other suitable storage facility, for instance, organized in a form similar to table 400 of FIG. 4. One or more designated criteria, as described above with reference to FIG. 4 as player tracking information 406 and additional friend-finding casino information 408, can be leveraged to identify friend candidates. That is, corresponding information associated with players identified by the player tracking server 110 as active in the casino during the designated timeframe and at designated locations is checked for satisfaction of the requesting player’s criteria in table 400.
In FIG. 9A, in step 925, various additional friend-finding information 408 can be used as criteria to identify friend candidates. Such information 408 can include player habits, actions, preferences, and style data, for example, including details about a) a player’s dressing style, such as clothing type, clothing brands, jewelry, hat, sunglasses, b) whether the player dresses casually, fashionably, suit and tie, etc., c) what the player likes to eat or where the player likes to eat, d) whether the player smokes or does not smoke, e) what time or day the player is playing, f) what the player drinks, g) how much the player drinks, h) what type of games the player likes to play, such as particular slot games or table games, i) how long the player has played, j) where they were born or where they currently live, k) marital status, l) whether the player talks a lot or is quiet, m) whether the player makes impulsive bets or plays conservatively, n) how the player bets when they are winning or losing, o) how the player reacts when they win or lose, p) whether the player tips the dealer or the cocktail waitress and how much the player tips, q) whether the player plays alone or with friends, r) whether the player is carrying a cell phone, s) what amount does the player usually buy-in with to a table game or a slot machine (e.g., $100, $50, etc.), t) player physical characteristics (e.g., approximate age, weight, hair color, eye color), u) a player’s profession and v) whether the player is part of a particular group or attending a particular convention.

One or more of the wide variety of player tracking information elements 406 and additional friend-finding casino elements 408 can be designated for selection and filtering of friend candidates. The selection of friend-finding criteria can be done exclusively by the player, for instance, during sign-up, or alternatively in automated fashion by player-friend-finding server 114. In step 930, the identified friend candidates based on the friend-finding criteria who also meet the location and timeframe parameters are identified, for instance, under buddies list 312 of the gaming machine display of the requesting player.

In FIG. 9A, in embodiments where external matching services, such as Internet matching services, are accessible within the casino on a gaming machine or other wagering device, in step 935, the player is presented with the option of accessing such services. For example, the “find Internet matches” selection 328 is presented on display 318 of gaming machine 104. When the player selects option 328, the method proceeds to step 940, in which matches are identified on selected matching service sites. Preferably, the designated location and timeframe parameters are also checked, so that only matches active as players at the designated location and timeframe are identified for the requesting player. The procedures for accessing and retrieving information from external matching services are described below with reference to FIG. 10.

In FIG. 9B, in step 945, responsive to the identification of friends and friend candidates using the selected one or more friend-finding services, a notification is preferably sent to the player indicating that friends and friend candidates have been identified. For example, a pop-up graphical message can be caused to appear on the display 318 indicating that friends have been found. Other notifications can be provided in accordance with embodiments of the present invention. For example, in a system in which a player’s cell phone, PDA, or other suitable portable computing device is registered with the casino player friend-finding server 114 and/or player tracking server 110, automated emails, text messages, and voice messages can be sent to the portable handheld device similarly notifying the player that matches have been found. This implementation is beneficial for players who may frequently move from machine to machine, or make frequent bathroom or restaurant visits.

In FIG. 9B, in step 950, identified friends and friend candidates are presented to the player, for example, under the buddy list 312 of the display 318. The presentation of identified friends and friend candidates can take various forms, depending on the desired implementation. For instance, pop-up graphics and text elements can identify buddies by name, image, nickname, and/or other suitable information. In one implementation, the friend-finding services described herein are performed repeatedly, for example, every 2 minutes during a player’s gaming session so the buddy list 312 stays current, with friends and friend candidates being added and removed over the course of the gaming session. In one implementation, all of the identified friends and friend candidates are listed under the buddy list 312. In another implementation, friends and friend candidates are listed by source, for example, with casino buddies listed under buddy list 312, casino friend candidates found using option 326 identified under a casino friend candidate list, and Internet matches segregated into a separate list.

In step 950, due to security concerns on the parts of both players and the casino, preferably only preliminary information identifying a friend or friend candidate is presented to a player. As mentioned above, participating players are preferably presented with the option to select and filter the information that can be viewed by other players. In one implementation, a thumbnail image and a nickname or login name are only displayed. In other implementations, for instance, for friends identifying one another on buddy lists, additional information is displayed, such as the player’s name, image, and location in the casino.

In FIG. 9B, in one embodiment, the method proceeds from step 950 to step 955, in which the player is presented with the option of requesting additional information describing friends and friend candidates. In some implementations, it is desirable to omit step 955 for participating players who wish to maintain the highest security of their personal information and whereabouts. In other instances, players may be open to the possibility of having their information made available to other players when requested. In these instances, step 955 presents the player with the option of selecting such further information for viewing, for example, by clicking on the name or image of an identified friend or friend candidate on the display, for example, in the form of a “more information” button.

In FIG. 9B, responsive to the request for further information in step 955, the method proceeds to step 960 in which the player friend-finding server 114 checks whether the requested further information for the selected friend or friend candidate is available and authorized. That is, often, as part of the sign-up and account set up procedure, a player may purposely omit such further information from his profile so that it is unavailable, or may select that certain items of information be screened from requesting participants until affirmatively authorized by the player. For instance, during a communications session, as described below, the player may be presented with an option on the gaming machine display to disclose additional personal information, for example, when the player reaches some comfort level with the requesting player.
In FIG. 9B, in step 965, when the further information selection is enabled and the information is available, the further information is displayed to the player, for instance, under buddy data 314 of display 302, in FIG. 3. Such further information is displayed in accordance with viewing restrictions placed on the information, as described in step 955. Various further information may be enabled by the friend or friend candidate for display to requesting players, such as a personal statement, a profile, and, in some instances, location information indicating a location of the casino where the friend or friend candidate is located. Again, such information would be purposely screened by many participants, although certain friends and friend candidates may desire disclosure of such information to add to the excitement of the friend-finding experience. Also, in step 965, preferably the timeframe and location parameter restrictions are checked before disclosing such additional information.

FIG. 10 shows a flow diagram of a method 940 for identifying friend candidates on external matching service sites, such as those publicly available over the Internet, in accordance with one embodiment of the present invention. The method 940 begins in step 1005, in which matching services are identified for access. In one embodiment, as described above, matching services in which players participate are identified in an Internet matching service column 410 of friend-finding criteria table 400, in FIG. 4. In one embodiment, upon selection of the “find Internet matches” button 328, in FIG. 3, the player friend-finding server 114 accesses table 400 and retrieves identified matching services from field 410 for the requesting player. In another implementation, identified matching service sites are presented to the player on a display of the gaming machine. The player then selects individual matching service sites from which to retrieve matches who the player believes may be in the casino or other gaming environment.

In FIG. 10, upon selection and identification of matching services for the player, a secure Internet communications path is established between the player friend-finding server 114 and/or player tracking server 110 through secure network interface 212. The method then proceeds to step 1015, in which any required login IDs and passwords are obtained to access restricted external matching services over the Internet. As described above with reference to FIG. 7, there are various possibilities for storing and receiving login IDs and passwords for a participating player. Upon retrieval of any required login and password information for the selected matching services, in step 1020, the matching services are accessed over the secure communications path described above.

Those skilled in the art should appreciate that interfaces may need to be constructed for the various websites with particular scripts and filters to access the matching services according to defined login procedures, and then filter through and retrieve match information. In step 1025, when match information is retrieved from the various sites, the customized interfaces for the respective matching services filter through the various organizations of information, for instance, on charmory.com, to identify friends meeting a certain level of communications on that matching service, e.g., “open” communications. By contrast, a different customized interface is constructed for matching service sites such as myspace.com, in which certain groups and lists of friends can be identified with unrestricted access.

In one embodiment, friend and friend candidate identifications are associated with “promotions.” The promotion may require a number of criteria be met in order for a player to be qualified as a friend candidate for certain players. The promotion may have a time period during which the promotion is active and available. In one embodiment, a player can only win a promotion by actively playing a gaming machine or engaging in another qualifying event (such as table game play) during the promotional period of time. Verification of the player’s eligibility may be determined by confirming the active status of the player based on their player card usage. A player who meets the required promotion requirements (such as, for example, using their player tracking card and playing a minimum number of games before the expiration of the promotional time period) may meet the status level criteria designated by another player seeking friend candidates.

In FIG. 11, a video gaming machine 2 constructed according to one embodiment of the present invention is shown. Machine 2 includes a main cabinet 4, which generally surrounds the machine interior (not shown) and is viewable by users. The main cabinet includes a main door 8 on the front of the machine, which opens to provide access to the interior of the machine. Attached to the main door are player-input switches or buttons 32, a coin acceptor 28, a bill validator 30, a coin tray 38, and a belly glass 40. Viewable through the main door is a video display monitor 34 and an information panel 36. The display monitor 34 will typically be a cathode ray tube, high resolution flat-panel LCD, or other conventional electronically controlled video monitor. The information panel 36 may be a back-fit, silk screened glass panel with lettering to indicate general game information including, for example, a game denomination (e.g., $0.25 or $1). The bill validator 30, player-input switches 32, video display monitor 34, and information panel are devices used to play a game on the game machine 2. The devices are controlled by circuitry (e.g. a master gaming controller) housed inside the main cabinet 4 of the machine 2.

In FIG. 11, the information panel 36 may be used as an interface to provide player tracking services and other game services to a player playing a game on the gaming machine 2. The information panel 36 may be used as an interface by a player to: 1) input player tracking identification information, 2) view account information and perform account transactions for accounts such as player tracking accounts and bank accounts, 3) receive operating instructions, 4) redeem prizes or comps including using player tracking points to redeem the prize or comp, 5) make entertainment service reservations, 6) transfer credits to cashless instruments and other player accounts, 7) participate in casino promotions, 8) select entertainment choices for output via video and audio output mechanisms, 9) play games and bonus games, 10) request gaming services such as a drink orders, 11) communicate with other players or casino service personnel and 12) register a player for a loyalty program such as a player tracking program. In addition, the information panel 36 may be used as an interface by casino service personnel to: a) access diagnostic menus, b) display player tracking unit status information and gaming machine status information, c) access gaming machine metering information and d) display player status information.

Many different types of games, including mechanical slot games, video slot games, video poker, video black jack, video pachinko and lottery, may be provided on gaming
machine 2. The gaming machine 2 is operable to provide play of many different instances of games of chance. The instances may be differentiated according to themes, sounds, graphics, type of game (e.g., slot game vs. card game), denomination, number of paylines, maximum jackpot, progressive or non-progressive, bonus games, etc. The gaming machine 2 may be operable to allow a player to select a game of chance to play from a plurality of instances available on the gaming machine. For example, the gaming machine may provide a menu with a list of the instances of games that are available for play on the gaming machine and a player may be able to select from the list a first instance of a game of chance that they wish to play.

The various instances of games available for play on the gaming machine 2 may be stored as game software on a mass storage device in the gaming machine or may be generated on a remote gaming device but then displayed on the gaming machine. The gaming machine 2 may execute game software, such as but not limited to video streaming software that allows the game to be displayed on the gaming machine. When an instance is stored on the gaming machine 2, it may be loaded from the mass storage device into a RAM for execution. In some cases, after a selection of an instance, the game software that allows the selected instance to be generated may be downloaded from a remote gaming device, such as another gaming machine.

In FIG. 11, the gaming machine 2 includes a top box 6 which sits on top of the main cabinet 4. The top box 6 houses a number of devices which may be used to add features to a game being played on the gaming machine 2, including speakers 10, 12, 14, a ticket printer 18 which prints bar-coded tickets 20, a key pad 22 for entering player tracking information, a florescent display 16 for displaying player tracking information, a card reader 24 for entering a magnetic striped card containing player tracking information, and a video display screen 42. The ticket printer 18 may be used to print tickets for a cashless ticketing system. The top box 6 may house various devices. For example, the top box may contain a bonus wheel or a back-lit silk screened panel which may be used to add bonus features to the game being played on the gaming machine. As another example, the top box may contain a display for a progressive jackpot offered on the gaming machine. During a game, these devices are controlled and powered, in part, by circuitry (e.g., a master gaming controller) housed within the main cabinet 4 of the machine 2.

In one embodiment of gaming machine 2, a player tracking unit and slot machine interface board (SMIB) are mounted within main cabinet 2. In alternative embodiments of gaming machine 2, the player tracking unit is mounted within a top box positioned on top of the gaming machine cabinet. Typically, the player tracking unit includes three player tracking devices: a gaming activity card reader; a key pad; and a display, all mounted within the unit. These player tracking devices are associated with a wired Input/Output Interface, and are used to input player tracking information that is needed to implement the player tracking program. The player tracking unit may include a wireless Input/Output Interface 36 as well. The player tracking unit communicates with the player tracking server 110 via the SMIB. The SMIB allows the player tracking unit to gather information from the gaming machine 2 such as an amount a player has wagered during a game play session. This information may be used by the player tracking server as described above.

In one particular embodiment, by way of example, when a game player desires to play a game on a gaming machine and utilize the player tracking unit, a game player inserts their issued player tracking identification device, such as a magnetic striped card, into the card reader. Briefly, for current player tracking programs, the most common approach for providing identification information is to issue a magnetic-striped card storing the necessary identification information to each player that wishes to participate in a given player tracking program. It will be appreciated, however, as will be better described below, that the issued player tracking identification device may be wireless interfaces such as Radio Frequency (RF) enabled smart cards and/or wireless Personal Digital Assistants (PDA) which enable wireless communication with the player tracking server.

After the magnetic striped or smart card has been so inserted, the player tracking unit may detect this event and receive certain identification information contained on the card. For example, a player’s name, address, social security number and player tracking account number encoded on the magnetic striped card, may be received by the player tracking unit. In general, a player must provide identification information of some type to utilize player tracking services available on a gaming machine.

Once the player has inserted her or his player tracking card, the player tracking unit may command the touch screen display to display the game player’s name on the touch screen display and also, may optionally display a message requesting the game player to validate their identity by entering an identification PIN code using a game service interface with an alpha-numeric key pad displayed on touch screen display or through a player tracking input keypad. For example, the player may use their finger, a stylus or combinations thereof to enter their identification information using the touch screen sensor. Once the game player’s identity has been validated, the player tracking information is relayed to the player tracking server. Typically, the player tracking server stores player tracking account records including the number of player tracking points previously accumulated by the player. Using this gaming activity data, the casino establishment may monitor their gaming activity for future promotions and customer service. Some player tracking systems, for example, incorporate management programs which update and calculate theoretical win profiles for each respective customer. These profiles are generally a function of estimated winnings from the betting activity of the customer at the casino establishment over a time period.

Understand that gaming machine 2 is but one example from a wide range of gaming devices on which the present invention may be implemented. For example, not all suitable gaming machines have top boxes or player tracking features. Further, some gaming machines have only a single game display—mechanical or video—while others are designed for bar tables and have displays that face upwards. As another example, a game may be generated on a host computer and may be displayed on a remote terminal or a remote gaming device. The remote gaming device may be connected to the host computer via a network of some type such as a local area network, a wide area network, an intranet or the Internet, by a wired or wireless connection. The remote gaming device may be a portable gaming device such as but not limited to a cell phone, a personal digital assistant, and a wireless game player. Images rendered from 3-D gaming environments may be displayed on portable gaming devices
that are used to play a game of chance. Further, a gaming machine or server may include gaming logic for commanding a remote gaming device to render an image from a virtual camera in a 3-D gaming environment stored on the remote gaming device and to display the rendered image on a display located on the remote gaming device. Thus, those of skill in the art will understand that the present invention, as described below, can be deployed on most any gaming machine now available or hereafter developed.

[0151] Some preferred IGT gaming machines are implemented with special features and/or additional circuitry that differentiates them from general-purpose computers (e.g., desktop personal computers and laptops). Gaming machines are highly regulated to ensure fairness and, in many cases, gaming machines are operable to dispense monetary awards of multiple millions of dollars. Therefore, to satisfy security and regulatory requirements in a gaming environment, hardware and software architectures may be implemented in gaming machines that differ significantly from those of general-purpose computers. A description of gaming machines relative to general-purpose computing machines and some examples of the additional (or different) components and features found in gaming machines are described below.

[0152] At first glance, one might think that adapting PC technologies to the gaming industry would be a simple proposition because both PCs and gaming machines employ microprocessors that control a variety of devices. However, because of such reasons as 1) the regulatory requirements that are placed upon gaming machines, 2) the harsh environment in which gaming machines operate, 3) security requirements, and 4) fault tolerance requirements, adapting PC technologies to a gaming machine can be quite difficult. Further, techniques and methods for solving a problem in the PC industry, such as device compatibility and connectivity issues, might not be adequate in the gaming environment. For instance, a fault or a weakness tolerated in a PC, such as security holes in software or frequent crashes, may not be tolerated in a gaming machine because in a gaming machine these faults can lead to a direct loss of funds from the gaming machine, such as stolen cash or loss of revenue when the gaming machine is not operating properly.

[0153] For the purposes of illustration, a few differences between PC systems and gaming systems will be described. A first difference between gaming machines and common PC-based computer systems is that gaming machines are designed to be state-based systems. In a state-based system, the system stores and maintains its current state in a non-volatile memory, such that, in the event of a power failure or other malfunction the gaming machine will return to its current state when the power is restored. For instance, if a player was shown an award for a game of chance and, before the award could be provided to the player the power failed, the gaming machine, upon the restoration of power, would return to the state where the award is indicated. This requirement affects the software and hardware design on a gaming machine. As anyone who has used a PC knows, PCs are not state machines and a majority of data is usually lost when such a malfunction occurs.

[0154] A second important difference between gaming machines and common PC based computer systems is that for regulation purposes, the software on the gaming machine used to generate the game of chance and operate the gaming machine has been designed to be static and monolithic to prevent cheating by the operator of the gaming machine. For instance, one solution that has been employed in the gaming industry to prevent cheating and satisfy regulatory requirements has been to manufacture a gaming machine that can use a proprietary processor running instructions to generate the game of chance from an EPROM or other form of non-volatile memory. The coding instructions on the EPROM are static (non-changeable) and must be approved by a gaming regulator in a particular jurisdiction and installed in the presence of a person representing the gaming jurisdiction. Any changes to any part of the software required to generate the game of chance, such as adding a new device driver used by the master gaming controller to operate a device during generation of the game of chance can require a new EPROM to be burned, approved by the gaming jurisdiction and installed on the gaming machine in the presence of a gaming regulator. Regardless of whether the EPROM solution is used, to gain approval in most gaming jurisdictions, a gaming machine must demonstrate sufficient safeguards that prevent an operator or player of a gaming machine from manipulating hardware and software in a manner that gives them an unfair and in some cases an illegal advantage. The gaming machine should have a means to determine if the code it will execute is valid. If the code is not valid, the gaming machine must have a means to prevent the code from being executed. The code validation requirements in the gaming industry affect both hardware and software designs on gaming machines.

[0155] A third important difference between gaming machines and common PC based computer systems is that the number and kinds of peripheral devices used on a gaming machine are not as great as on PC based computer systems. Traditionally, in the gaming industry, gaming machines have been relatively simple in the sense that the number of peripheral devices and the number of functions of the gaming machine have been limited. Further, in operation, the functionality of gaming machines were relatively constant once the gaming machine was deployed, i.e., new peripherals and new gaming software were infrequently added to the gaming machine. This differs from a PC where users will buy different combinations of devices and software from different manufacturers and connect them to a PC to suit their needs depending on a desired application. Therefore, the types of devices connected to a PC may vary greatly from user to user depending in their individual requirements and may vary significantly over time.

[0156] Although the variety of devices available for a PC may be greater than on a gaming machine, gaming machines still have unique device requirements that differ from a PC, such as device security requirements not usually addressed by PCs. For instance, monetary devices, such as coin dispensers, bill validators, ticket printers and computing devices that are used to govern the input and output of cash to a gaming machine have security requirements that are not typically addressed in PCs. Therefore, many PC techniques and methods developed to facilitate device connectivity and device compatibility do not address the emphasis placed on security in the gaming industry.

[0157] To address some of the issues described above, a number of hardware/software components and architectures are utilized in gaming machines that are not typically found in general purpose computing devices, such as PCs. These hardware/software components and architectures, as described below in more detail, include but are not limited to watchdog timers, voltage monitoring systems, state-based software
architecture and supporting hardware, specialized communication interfaces, security monitoring and trusted memory.

[0158] A watchdog timer is normally used in IGT gaming machines to provide a software failure detection mechanism. In a normally operating system, the operating software periodically accesses control registers in the watchdog timer subsystem to “re-trigger” the watchdog. Should the operating software fail to access the control registers within a preset timeframe, the watchdog timer will timeout and generate a system reset. Typical watchdog timer circuits contain a loadable timeout counter register to allow the operating software to set the timeout interval within a certain range of time. A differentiating feature of some preferred circuits is that the operating software cannot completely disable the function of the watchdog timer. In other words, the watchdog timer always functions from the time power is applied to the board.

[0159] IGT gaming computer platforms preferably use several power supply voltages to operate portions of the gaming machine circuitry. These can be generated in a central power supply or locally on the circuit board. If any of these voltages falls out of the tolerance limits of the circuitry they power, unpredictable operation of the gaming machine may result. Though most modern general-purpose computers include voltage monitoring circuitry, these types of circuits only report voltage status to the operating software. Out of tolerance voltages can cause software malfunction, creating a potential uncontrolled condition in the gaming computer. IGT gaming machines typically have power supplies with tighter voltage margins than that required by the operating circuitry. In addition, the voltage monitoring circuitry implemented in IGT gaming machines typically has two thresholds of control. The first threshold generates a software event that can be detected by the operating software and an error condition generated. This threshold is triggered when a power supply voltage falls out of the tolerance range of the power supply, but is still within the operating range of the circuitry. The second threshold is set when a power supply voltage falls out of the operating tolerance of the circuitry. In this case, the circuitry generates a reset, halting operation of the computer.

[0160] The standard method of operation for IGT slot machine gaming software is to use a state machine. Different functions of the game (bet, play, result, points in the graphical presentation, etc.) may be defined as a state. When a game moves from one state to another, critical data regarding the game software is stored in a custom non-volatile memory subsystem. This ensures the player’s wager and credits are preserved and minimizes potential disputes in the event of a malfunction on the gaming machine.

[0161] In general, the gaming machine does not advance from a first state to a second state until critical information that allows the first state to be reconstructed is stored. This feature allows the game to recover operation to the current state of play in the event of a malfunction, loss of power, etc. that occurred just prior to the malfunction. After the state of the gaming machine is restored during the play of a game of chance, game play may resume and the game may be completed in a manner that is no different than if the malfunction had not occurred. Typically, battery backed RAM devices are used to preserve this critical data although other types of non-volatile memory devices may be employed. These memory devices are not used in typical general-purpose computers.

[0162] As described in the preceding paragraph, when a malfunction occurs during a game of chance, the gaming machine may be restored to a state in the game of chance just prior to when the malfunction occurred. The restored state may include metering information and graphical information that was displayed on the gaming machine in the state prior to the malfunction. For example, when the malfunction occurs during the play of a card game after the cards have been dealt, the gaming machine may be restored with the cards that were previously displayed as part of the card game. As another example, a bonus game may be triggered during the play of a game of chance where a player is required to make a number of selections on a video display screen. When a malfunction has occurred after the player has made one or more selections, the gaming machine may be restored to a state that shows the graphical presentation at just prior to the malfunction including an indication of selections that have already been made by the player. In general, the gaming machine may be restored to any state in a plurality of states that occur in the game of chance while the game of chance is played or to states that occur between the play of a game of chance.

[0163] Game history information regarding previous games played such as an amount wagered, the outcome of the game and so forth may also be stored in a non-volatile memory device. The information stored in the non-volatile memory may be detailed enough to reconstruct a portion of the graphical presentation that was previously presented on the gaming machine and the state of the gaming machine (e.g., credits) at the time the game of chance was played. The game history information may be utilized in the event of a dispute. For example, a player may decide that in a previous game of chance that they did not receive credit for an award that they believed they won. The game history information may be used to reconstruct the state of the gaming machine prior, during and/or after the disputed game to demonstrate whether the player was correct or not in their assertion. Further details of a state based gaming system, recovery from malfunctions and game history are described in U.S. Pat. No. 6,804,763, titled “High Performance Battery Backed RAM Interface”, U.S. Pat. No. 6,863,608, titled “Frame Capture of Actual Game Play,” U.S. application Ser. No. 10/243,104, titled, “Dynamic NV-RAM,” and U.S. application Ser. No. 10/758,828, titled, “Frame Capture of Actual Game Play,” all of which are hereby incorporated by reference for all purposes.

[0164] Another feature of gaming machines, such as IGT gaming computers, is that they often contain unique interfaces, including serial interfaces, to connect to specific subsystems internal and external to the slot machine. The serial devices may have electrical interface requirements that differ from the “standard” EIA 232 serial interfaces provided by general-purpose computers. These interfaces may include EIA 485, EIA 422, Fiber Optic Serial, optically coupled serial interfaces, current loop style serial interfaces, etc. In addition, to conserve serial interfaces internally in the slot machine, serial devices may be connected in a shared, daisy-chain fashion where multiple peripheral devices are connected to a single serial channel.

[0165] The serial interfaces may be used to transmit information using communication protocols that are unique to the gaming industry. For example, IGT’s Netplex is a proprietary communication protocol used for serial communication between gaming devices. As another example, SAS is a communication protocol used to transmit information, such as
metering information, from a gaming machine to a remote device. Often SAS is used in conjunction with a player tracking system.

[0166] IGT gaming machines may alternatively be treated as peripheral devices to a casino communication controller and connected in a shared daisy chain fashion to a single serial interface. In both cases, the peripheral devices are preferably assigned device addresses. If so, the serial controller circuitry must implement a method to generate or detect unique device addresses. General-purpose computer serial ports are not able to do this.

[0167] Security monitoring circuits detect intrusion into an IGT gaming machine by monitoring security switches attached to access doors in the slot machine cabinet. Preferably, access violations result in suspension of game play and can trigger additional security operations to preserve the current state of game play. These circuits also function when power is off by use of a battery backup. In power-off operation, these circuits continue to monitor the access doors of the slot machine. When power is restored, the gaming machine can determine whether any security violations occurred while power was off, e.g., via software for reading status registers. This can trigger event log entries and further data authentication operations by the slot machine software.

[0168] Trusted memory devices are preferably included in an IGT gaming machine computer to ensure the authenticity of the software that may be stored on less secure memory subsystems, such as mass storage devices. Trusted memory devices and controlling circuitry are typically designed to not allow modification of the code and data stored in the memory device while the memory device is installed in the slot machine. The code and data stored in these devices may include authentication algorithms, random number generators, authentication keys, operating system kernels, etc. The purpose of these trusted memory devices is to provide gaming regulatory authorities a root trusted authority within the computing environment of the slot machine that can be tracked and verified as original. This may be accomplished via removal of the trusted memory device from the slot machine computer and verification of the secure memory device contents in a separate third party verification device. Once the trusted memory device is verified as authentic, and based on the approval of the verification algorithms contained in the trusted device, the gaming machine is allowed to verify the authenticity of additional code and data that may be located in the gaming computer assembly, such as code and data stored on hard disk drives. Some details related to trusted memory devices that may be used in the present invention are described in U.S. Pat. No. 6,685,567 from U.S. patent application Ser. No. 09/925,098, filed Aug. 8, 2001 and titled “Process Verification,” which is hereby incorporated by reference in its entirety and for all purposes.

[0169] Mass storage devices used in a general purpose computer typically allow code and data to be read from and written to the mass storage device. In a gaming machine environment, modification of the gaming code stored on a mass storage device is strictly controlled and would only be allowed under specific maintenance type events with electronic and physical enablers required. Although this level of security could be provided by software, IGT gaming computers that include mass storage devices preferably include hardware level mass storage data protection circuitry that operates at the circuit level to monitor attempts to modify data on the mass storage device and will generate both software and hardware error triggers should a data modification be attempted without the proper electronic and physical enablers being present.

[0170] Returning to the example of FIG. 11, when a user wishes to play the gaming machine 2, he or she inserts cash through the coin acceptor 28 or bill validator 30. Additionally, the bill validator may accept a printed ticket voucher which may be accepted by the bill validator 30 as indica of credit when a cashless ticketing system is used. At the start of the game, the player may enter playing tracking information using the card reader 24, the keypad 22, and the fluorescent display 16. Further, other game preferences of the player playing the game may be read from a card inserted into the card reader. During the game, the player views game information using the video display 34. Other game and prize information may also be displayed in the information panel 36 and video display screen 42 located in the top box.

[0171] During the course of a game, a player may be required to make a number of decisions, which affect the outcome of the game. For example, a player may vary his or her wager on a particular game, select a prize for a particular game selected from a prize server, or make game decisions which affect the outcome of a particular game. The player may make these choices using the player-input switches 32, the video display screen 34 or using some other device which enables a player to input information into the gaming machine. In some embodiments, the player may be able to access various game services such as concierge services and entertainment content services using the video display screen 34 and one or more input devices.

[0172] During certain game events, the gaming machine 2 may display visual and auditory effects that can be perceived by the player. These effects add to the excitement of a game, which makes a player more likely to continue playing. Auditory effects include various sounds that are projected by the speakers 10, 12, 14. Visual effects include flashing lights, strobing lights or other patterns displayed from lights on the gaming machine 2 or from lights behind the belly glass 40. After the player has completed a game, the player may receive game tokens from the coin tray 38 or the ticket 20 from the printer 18, which may be used for further games or to redeem a prize. Further, the player may receive a ticket 20 for food, merchandise, or games from the printer 18.

[0173] When a gaming platform is capable of providing multiple games to a game player based upon a game selection made by the player or an operator, it may be desirable from both an operator perspective and a content provider perspective to provide capabilities for allowing more complex game licensing methods. The operator and content provider may use the licensing capabilities to enter into licensing agreements that better reflect the value of the content (e.g., game software) to each party. For instance, the licensing parties may agree to utility model based licensing schemes, such as a pay-per-use scheme. In a pay-per-use scheme, operators only pay for game software that is utilized by their patrons, protecting them from software titles that are “duds.”

[0174] Game platforms exist that provide access to multiple electronic games. On these devices, a game selection menu may be provided on a video display, which offers the patron the choice of at least two electronic games. A game player may select a game of their choice from the games available on the gaming machine. Typically, the choices of games available to the player are only those licensed for play on the gaming platform. The gaming platform may provide a
manual mechanism, such as a display interface on the gaming machine, for updating and renewing licensing on the gaming machine.

In some game platforms offering multiple games, the games are stored on read-only memory devices, such as an EPROM chip set or a CD-ROM. To provide a new or different game on a gaming platform of this type, a technician, usually accompanied by a gaming regulator, must manually install a new memory device (e.g., EPROM) and then manually update the licensing configuration on the gaming machine. The gaming regulator then places evidence tape across the EPROM. The evidence tape is used to detect tampering between visits by the gaming regulator. Since operations performed by entities other than a “trusted” 3rd party, such as a gaming regulator, have been deemed untrustworthy, automatic game downloads and automatic licensing management is not available on these platforms.

The licensing of multiple games on a gaming machine is described in U.S. Pat. No. 6,264,561, titled “Electronic Gaming Licensing Apparatus and Method,” assigned to IGT (Reno, Nev.), which is incorporated herein by reference in its entirety and for all purposes.

FIG. 12 illustrates an example of a network device that may be configured as a server for implementing some methods and apparatus of the present invention. Network device 1260 includes a master central processing unit (CPU) 1262, interfaces 1268, and a bus 1267 (e.g., a PCI bus). Generally, interfaces 1268 include ports 1269 appropriate for communication with the appropriate media. In some embodiments, one or more of interfaces 1268 includes at least an independent processor and, in some instances, volatile RAM. The independent processors may be, for example, ASICs or any other appropriate processors. According to some such embodiments, these independent processors perform at least some of the functions of the logic described herein. In some embodiments, one or more of interfaces 1268 control such communications-intensive tasks as media control and management. By providing separate processors for the communications-intensive tasks, interfaces 1268 allow the master microprocessor 1262 efficiently to perform other functions such as routing computations, network diagnostics, security functions, etc.

The interfaces 1268 are typically provided as interface cards (sometimes referred to as “linecards”). Generally, interfaces 1268 control the sending and receiving of data packets over the network and sometimes support other peripherals used with the network device 1260. Among the interfaces that may be provided are FC interfaces, Ethernet interfaces, frame relay interfaces, cable interfaces, DSL interfaces, token ring interfaces, and the like. In addition, various high-speed interfaces may be provided, such as Fast Ethernet interfaces, Gigabit Ethernet interfaces, ATM interfaces, HSSI interfaces, POS interfaces, FDDI interfaces, ASI interfaces, DHEI interfaces and the like.

When acting under the control of appropriate software or firmware, in some implementations of the invention CPU 1262 may be responsible for implementing specific functions associated with the functions of a desired network device. According to some embodiments, CPU 1262 accomplishes all these functions under the control of software including an operating system and any appropriate applications software.

CPU 1262 may include one or more processors 1263 such as a processor from the Motorola family of microprocessors or the MIPS family of microprocessors. In an alternative embodiment, processor 1263 is specially designed hardware for controlling the operations of network device 1260. In a specific embodiment, a memory 1261 (such as non-volatile RAM and/or ROM) also forms part of CPU 1262. However, there are many different ways in which memory could be coupled to the system. Memory block 1265 may be used for a variety of purposes such as, for example, caching and/or storing data, programming instructions, etc.

Regardless of the network device’s configuration, it may employ one or more memories or memory modules (such as, for example, memory block 1265) configured to store data, program instructions for the general-purpose network operations and/or other information relating to the functionality of the techniques described herein. The program instructions may control the operation of an operating system and/or one or more applications, for example.

Because such information and program instructions may be employed to implement the systems/methods described herein, the present invention relates to machine-readable media that include program instructions, state information, etc. for performing various operations described herein. Examples of machine-readable media include, but are not limited to, magnetic media such as hard disks, floppy disks, and magnetic tape; optical media such as CD-ROM disks; magneto-optical media; and hardware devices that are specially configured to store and perform program instructions, such as read-only memory devices (ROM) and random access memory (RAM). The invention may also be embodied in a carrier wave traveling over an appropriate medium such as airwaves, optical lines, electric lines, etc. Examples of program instructions include both machine code, such as produced by a compiler, and files containing higher-level code that may be executed by the computer using an interpreter.

Although the system shown in FIG. 12 illustrates one specific network device of the present invention, it is by no means the only network device architecture on which the present invention can be implemented. For example, an architecture having a single processor that handles communications as well as routing computations, etc. is often used. Further, other types of interfaces and media could also be used with the network device. The communication path between interfaces may be as shown in FIG. 12 or switch fabric based (such as a cross-bar).

FIG. 13 is a simplified block diagram depicting gaming machines within a gaming establishment 1301. The gaming machines are connected with a dedicated communication network via a host server 1328 and a data collection unit (DCU) according to one embodiment of the invention. According to some embodiments of the invention, the DCU is an enhanced DCU as described in U.S. patent application Ser. No. 10/187,059, entitled “Redundant Gaming Network Mediation,” which is hereby incorporated by reference in its entirety.

In FIG. 13, gaming machine 1302, and the other gaming machines 1330, 1332, 1334, and 1336, include a main cabinet 1306 and a top box 1304. The main cabinet 1306 houses the main gaming elements and can also house peripheral systems, such as those that utilize dedicated gaming networks. The top box 1304 may also be used to house these peripheral systems.

The master gaming controller 1308 controls the game play on the gaming machine 1302 and receives or sends...
data to various input/output devices 1311 on the gaming machine 1302. The master gaming controller 1308 may also communicate with a display 1310.

[0187] A particular gaming entity may desire to provide network gaming services that provide some operational advantage. Thus, dedicated networks may connect gaming machines to host servers that track the performance of gaming machines under the control of the entity, such as for accounting management, electronic fund transfers (EFTs), cashless ticketing, such as EZPay™, marketing management, and data tracking, such as player tracking. Therefore, master gaming controller 1308 may also communicate with EFT system 1312, bonus system 1314, EZPay™ system 1316 (a proprietary cashless ticketing system of the present assignee), and player tracking system 1318. The systems of the gaming machine 1302 communicate the data onto the network 1322 via a communication board 1318.

[0188] In general, the dedicated communication network is not accessible to the public. Due to the sensitive nature of much of the information on the dedicated networks, for example, electronic fund transfers and player tracking data, usually the manufacturer of a host system, such as a player tracking system, or group of host systems, employs a particular networking language having proprietary protocols. For instance, 10-20 different companies produce player tracking host systems where each host system may use different protocols. These proprietary protocols are usually considered highly confidential and not released publicly. Thus, whenever a new host system is introduced for use with a gaming machine, rather than trying to interpret all the different protocols utilized by different manufacturers, the new host system is typically designed as a separate network. Consequently, as more host systems are introduced, the independent network structures continue to build up in the casino. Examples of network mediators to address these issues may be found, for example, in U.S. Pat. No. 6,682,423, “Open Architecture Communications in a Gaming Network,” which is hereby incorporated by reference in its entirety.

[0189] Further, in the gaming industry, gaming machines are made by many different manufacturers. The communication protocols on the gaming machine are typically hardcoded into the gaming machine software, and each gaming machine manufacturer may utilize a different proprietary communication protocol. A gaming machine manufacturer may also produce host systems, in which case their gaming machines are compatible with their own host systems. However, in a heterogeneous gaming environment, such as a casino, gaming machines from many different manufacturers, each with their own communication protocol, may be connected to host systems from many different manufacturers, each with their own communication protocol. Therefore, communication compatibility issues regarding the protocols used by the gaming machines in the system and protocols used by the host systems must be considered.

[0190] In the present illustration, the gaming machines, 1302, 1303, 1332, 1334, 1336, and 1332, are connected to a dedicated gaming network 1322. In general, the DCU 1324 functions as an intermediary between the different gaming machines on the network 1322 and the host server 1328. In general, the DCU 1324 receives data transmitted from the gaming machines and sends the data to the host server 1328 over a transmission path 1326. In some instances, when the hardware interface used by the gaming machine is not compatible with the host server 1328, a translator 1325 may be used to convert serial data from the DCU 1324 to a format accepted by the host server 1328. The translator may provide this conversion service to a plurality of DCUs, such as 1324, 1340 and 1341.

[0191] Further, in some dedicated gaming networks, the DCU 1324 can receive data transmitted from the host server 1328 for communication to the gaming machines on the gaming network. The received data may be communicated synchronously to the gaming machines on the gaming network. Within a gaming establishment, the gaming machines 1302, 1330, 1332, 1334 and 1336 are located on the gaming floor for player access while the host server 1328 is usually located in another part of the gaming establishment 1301 (e.g. the backroom), or at another location.

[0192] In a gaming network, gaming machines, such as 1302, 1330, 1332, 1334 and 1336, may be connected through multiple communication paths to a number of gaming devices that provide gaming services. For example, gaming machine 1302 is connected to four communication paths, 1322, 1348, 1349 and 1350. As described above, communication path 1322 allows the gaming machine 1302 to send information to host server 1328. Via communication path 1348, the gaming machine 1302 is connected to a clerk validation terminal 1342. The clerk validation terminal 1342 is connected to a translator 1343 and a cashless system server 1344 that are used to provide cashless gaming services to the gaming machine 1302. Gaming machines 1330, 1332, 1334 and 1336 may also be connected to the clerk validation terminal 1342 and may also receive cashless system services.

[0193] Via communication path 1349, the gaming machine 1302 is connected to a wide area progressive (WAP) device 1346. The WAP is connected to a progressive system server 1347 that may be used to provide progressive gaming services to the gaming machines. The progressive game services enabled by the progressive game network increase the game playing capabilities of a particular gaming machine by enabling a larger jackpot than would be possible if the gaming machine was operating in a “stand alone” mode. Playing a game on a participating gaming machine gives a player a chance to win the progressive jackpot. The potential size of the jackpot increases as the number of gaming machines connected in the progressive network is increased. The size of the jackpot tends to increase game play on gaming machines offering a progressive jackpot.

[0194] In some embodiments of the present invention, gaming machines and other devices in the gaming establishment depicted in FIG. 13 are connected to a central system and/or other gaming establishments via one or more networks, which may be public or private networks. For example, host server 1328 and/or progressive system server 1347 may be connected to an outside network. In other embodiments, a bingo server, a switch, or another type of network device may be part of an interface with an outside network. A network device that links a gaming establishment with another gaming establishment and/or a central system will sometimes be referred to herein as a “site controller.”

[0195] While the invention has been particularly shown and described with reference to specific embodiments thereof, it will be understood by those skilled in the art that changes in the form and details of the disclosed embodiments may be made without departing from the spirit or scope of the invention. For instance, various alternative hardware embodiments are contemplated to leverage the use of player tracking data. The method can also include classifying the user based on the approximated satisfaction that the user will have in the relationships that user forms with others. Candidates for matching with the user are identified based on the classification of the user. Also, the gaming network may be connected to other
devices including other servers or gaming devices over the Internet or through other wired and wireless systems. Moreover, embodiments of the present invention may be employed with a variety of network protocols and architectures. Thus, the examples described herein are not intended to be limiting of the present invention. It is therefore intended that the appended claims will be interpreted to include all variations, equivalents, changes and modifications that fall within the true spirit and scope of the present invention.

What is claimed is:
1. A method for players of wagering games to find friends in a gaming environment, the method comprising:
   receiving player identification information identifying a first player of a first gaming device configured to play of a game of chance;
   retrieving from a storage medium one or more friend-finding criteria associated with the identified first player;
   identifying a second player as a friend or a friend candidate of the first player based on the retrieved friend-finding criteria, including identifying a location associated with the second player as being in a designated area of the gaming environment; and
   providing output data indicating the identified second player.
2. The method of claim 1, wherein identifying the second player includes:
   identifying an action associated with the second player as occurring within a designated timeframe.
3. The method of claim 1, wherein the friend-finding criteria includes one or more selected from the group consisting of a buddies list, player tracking information, friend-finding player preferences, and data associated with a matching service accessible over a network.
4. The method of claim 3, wherein the player tracking information includes one or more items associated with the first player and selected from the group consisting of one or more games, a type of machine, a status, points, an amount wagered, login information, a time of game play, game play history information, and a theoretical win.
5. The method of claim 3, wherein the friend-finding player preferences include one or more items associated with the first player and selected from the group consisting of a personal characteristic, a restaurant, a sport, a show, and a hotel.
6. The method of claim 1, wherein providing the output data includes displaying information associated with the second player on a display.
7. The method of claim 1, wherein the storage medium is associated with a player account maintained for the first player.
8. The method of claim 1, further comprising:
   receiving a selection indicating desired communications with the second player.
9. The method of claim 1, further comprising:
   determining a communications path for communications between the first player and the second player.
10. The method of claim 9, wherein the communications path is determined in accordance with one or more of a preference and a restriction.
11. The method of claim 9, further comprising:
   providing a communications session between the first player and the second player over the determined communications path.
12. The method of claim 1, wherein identification of the second player is associated with a promotion.
13. An apparatus for players of wagering games to find friends in a gaming environment, the apparatus comprising:
   an interface coupled to receive player identification information identifying a first player of a first gaming device configured to play of a game of chance; and
   a processor coupled to the interface and configured to:
   retrieve from a storage medium one or more friend-finding criteria associated with the identified first player,
   identify a second player as a friend or a friend candidate of the first player based on the retrieved friend-finding criteria, including identifying a location associated with the second player as being in a designated area of the gaming environment, and
   provide output data indicating the identified second player.
14. The apparatus of claim 13, wherein identifying the second player includes:
   identifying an action associated with the second player as occurring within a designated timeframe.
15. The apparatus of claim 13, wherein the friend-finding criteria includes one or more selected from the group consisting of a buddies list, player tracking information, friend-finding player preferences, and data associated with a matching service accessible over a network.
16. The apparatus of claim 15, wherein the player tracking information includes one or more items associated with the first player and selected from the group consisting of one or more games, a type of machine, a status, points, an amount wagered, login information, a time of game play, game play history information, and a theoretical win.
17. The apparatus of claim 16, wherein the player tracking information is associated with a personal characteristic, a restaurant, a sport, a show, and a hotel.
18. The apparatus of claim 16, wherein the friend-finding player preferences include one or more items associated with the first player and selected from the group consisting of a personal characteristic, a restaurant, a sport, a show, and a hotel.
19. The apparatus of claim 13, further comprising:
   a display coupled to provide the output data, including information associated with the second player.
20. The apparatus of claim 13, wherein the storage medium is associated with a player account maintained for the first player.
21. The apparatus of claim 13, further comprising:
   a processor further configured to:
   determine a communications path for communications between the first player and the second player.
22. The apparatus of claim 21, wherein the communications path is determined in accordance with one or more of a preference and a restriction.
23. The apparatus of claim 22, wherein the communications path is determined in accordance with one or more of a preference and a restriction.
24. The apparatus of claim 22, the processor further configured to:
   provide a communications session between the first player and the second player over the determined communications path.
25. The apparatus of claim 13, wherein identification of the second player is associated with a promotion.
26. A system for players of wagering games to find friends in a gaming environment, the system comprising:
a gaming device in communication with a network, the gaming device including a player interface coupled to receive player identification information identifying a first player of a first gaming device configured to play of a game of chance; and
a server in communication with the network, the server including:
a network interface coupled to receive the player identification information from the gaming machine over the network, and
a processor coupled to the interface and configured to:
retrieve from a storage medium one or more friend-finding criteria associated with the identified first player,
identify a second player as a friend or a friend candidate of the player based on the retrieved friend-finding criteria, including identifying a location associated with the second player as being in a designated area of the gaming environment, and
provide output data indicating the identified second player.
27. The system of claim 26, wherein the network is a private network.
28. The system of claim 26, wherein the gaming device is associated with one selected from the group consisting of a table game, a bingo game, a keno game, and a sports game.

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