MULTI-PLAYER BINGO GAME WITH SECONDARY WAGER FOR INSTANT WIN GAME

Inventors: Ali Safari, Reno, NV (US); Bryan Wolf, Reno, NV (US)

Correspondence Address:
BEYER WEAVER & THOMAS, LLP
P.O. BOX 70250
OAKLAND, CA 94612-0250 (US)

Assignee: IGT, a Nevada corporation, Reno, NV (US)

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ABSTRACT

The invention is directed to methods and gaming units for conducting a multi-player wagering game and an associated instant win game having a finite pool of outcomes, with an outcome for the occurrence of the multi-player wagering game being determined, and an outcome for the instant win game being selected from the finite pool of outcomes. The multi-player wagering game may be a multi-player Bingo game wherein each player has a unique game array of game indicia for the occurrence of the multi-player wagering game and individual game indicia are sequentially selected from a range of available game indicia. Players may win an award for the instant win game if the outcome selected from the finite pool is a winning outcome. The players may optionally participate in the instant win game based on input information and wager amounts. In alternative embodiments, the instant win game may be configured to provide a progressive jackpot if one of the available progressive jackpot-winning outcomes is selected from the finite pool. Graphics corresponding to the instant win game may be displayed to the players independently or in conjunction with displays of the outcome of the multi-player wagering game.
MULTIPLAYER BINGO

FIRST PLAYER ENROLLS

SECOND PLAYER ENROLLED?

START ENROLLMENT TIMER

ENROLL ADDITIONAL PLAYERS

ENROLLMENT TIMER EXPIRED?

DETERMINE END GAME PATTERN

ADD % OF WAGERS TO WINNER PRIZE POOL

DRAW NUMBERS UNTIL END PATTERN MATCHED

TRANSMIT NUMBERS & ORDER TO GAME UNITS

FIG. 5A
EVALUATE BINGO CARDS AT GAME UNITS

DISPLAY OUTCOME AT GAME UNITS

START SLEEP TIMER

MARK CARDS FOR DAUBING PLAYERS

WINNER(S) DAUBED?

SLEEP TIMER EXPIRED?

INFINITE SLEEP UNTIL DAUB

LAST PLAYER(S) TO MATCH?

DETERMINE AWARD FOR WINNER(S)

DISPLAY AWARD GRAPHIC AT WINNER(S) DISPLAY

INCREMENT CREDITS WITH AWARD AMOUNT FOR WINNER(S)

END

FIG. 5B
FIG. 7
FIG. 12

1. **IN\_IN\_IN\_INSTANT\_WIN\_GAME\_ENROLLMENT\_ROUTE**

2. **PLAYER\_DEPONITS\_CURRENCY**

3. **PLAYER\_INPUTS\_BINGO\_GAME\_WAGER**

4. **PLAYER\_HITS\_PLAY/DAUB\_BUTTON**

5. **DEDUCT\_BINGO\_WAGER\_FROM\_PLAYER'S\_CREDITS**

6. **PLAYER\_INPUTS\_INSTANT\_WIN\_GAME\_WAGER?**

7. **YES**
   - **DEDUCT\_INSTANT\_WIN\_GAME\_WAGER**

8. **NO**
   - **TRANSMIT\_BINGO\_ENROLLMENT\_MESSAGE**

9. **SELECT\_INSTANT\_WIN\_GAME\_OUTCOME\_FROM\_POOL**

10. **EVALUATE\_INSTANT\_WIN\_GAME\_OUTCOME**

11. **DISPLAY\_INSTANT\_WIN\_GAME\_RESULT**

12. **ADD\_INSTANT\_WIN\_GAME\_AWARD\_TO\_PLAYER'S\_CREDITS**

**END**
FIG. 13

1. **Instant Win Game Enrollment Routine**

2. **Player Deposits Currency**

3. **Player Inputs Bingo Game Wager**

4. **Participate in Instant Win Game?**
   - **Yes**
     - **Player Inputs Wager for Instant Win Game**
   - **No**
     - **Player Hits Play/DAIR Button**

5. **Deduct Bingo Wager from Players Credits**

6. **Player Inputs Instant Win Game Wager?**
   - **Yes**
     - **Deduct Instant Win Game Wager**
     - **Transmit Bingo Instant Win Game Enrollment Message**
     - **Select Instant Win Game Outcome from Pool**
     - **Evaluate Instant Win Game Outcome**
     - **Display Instant Win Game Result**
     - **Add Instant Win Game Award to Players Credits**
   - **No**
     - **Transmit Bingo Enrollment Message**

7. **End**
FIG. 15
MULTI-PLAYER BINGO GAME WITH SECONDARY WAGER FOR INSTANT WIN GAME

BACKGROUND

[0001] The present disclosure relates to gaming networks and, more particularly, to a gaming network providing a multi-player Bingo game in combination with an instant win game, an entry for which may be obtained by placing a secondary or threshold wager, and which may be implemented to award a progressive jackpot.

[0002] Indian 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 and Bingo-like games. Bingo is defined as games played for prizes, including monetary prizes, with cards bearing numbers or other designations in which the holder of the cards covers such numbers or designations when objects, similarly numbered or designated, are drawn or electronically determined, and in which the game is won by the first person covering a previously designated arrangement of numbers or designations on such cards. Class II gaming may also include 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 games of chance (slots, video poker, video blackjack, video Keno, and the like) typically offered in non-Indian, state-regulated casinos.

[0003] Two basic forms of Bingo exist. In traditional Bingo, the players purchase cards after which a draw takes place. The first player to achieve a designated pattern wins. In one type of Bingo game known as Bonanza Bingo, the draw for the game takes place before the players know the arrangements on their Bingo cards. After the draw occurs, the players may either purchase cards or expose previously purchased cards and compare the arrangements on the cards to the drawn numbers to determine whether predetermined patterns are matched. Play continues in Bonanza Bingo until at least one of the players matches a designated game-winning pattern. Bonanza Bingo may also encompass Bingo variations wherein a partial draw is conducted for some numbers (generally fewer than the number of balls expected to be necessary to win the game) prior to selling and/or revealing the Bingo cards. After the Bingo cards are sold and/or revealed, additional numbers are drawn until there is a winner.

[0004] As indicated above, a Bingo game is played until at least one player covers a predetermined game-winning pattern on the player’s Bingo card. The game may also include interim winners of prizes based on matching predetermined interim patterns on the Bingo card using the same ball draw. The interim pattern wins do not terminate the Bingo game. For interim pattern awards, players covering certain interim patterns may receive an additional award as the game continues. Some exceptional Bingo versions may allow Bingo draws beyond those needed to achieve the Bingo game win so as to payout interim pattern wins at a desired rate. The game-winning awards may be partially or fully pari-mutuel in nature. That is, the Bingo win award is based upon the total amount wagered on a given occurrence of the Bingo game. However, interim pattern awards typically are not pari-mutuel.

[0005] For a given game-winning pattern, the expected number of balls drawn for at least one Bingo card to match the game-winning pattern depends on the number of Bingo cards being played in the Bingo game. Bingo is typically played with a variable number of Bingo cards resulting from varying numbers of players and players playing varying numbers of Bingo cards. Consequently, if the interim patterns are evaluated based on the balls drawn until at least one Bingo card matches the game-winning pattern, the odds of awarding interim awards also varies with the number of Bingo cards being played in the Bingo game. If the interim awards are determined based on the ball draw to Bingo, the Bingo game may be restricted to a fixed number of Bingo cards in order to achieve a desired payout rate for the interim pattern awards. However, it may be difficult to use a fixed number of Bingo cards in every occurrence of the Bingo game in a real-time environment wherein the players’ expectation may be to play the Bingo game on demand.

[0006] For example, to achieve a desired interim award payout rate, it may be desirable to play each occurrence of the Bingo game with a fixed number of Bingo cards, such as fifteen. If there are at least two players but less than fifteen Bingo cards are enrolled in the Bingo game within a short period of time, in order to serve the players, the casino may want to start the game for those players available to play. With the fewer number of Bingo cards, the average number of balls drawn for at least one of the Bingo cards to match the game-winning pattern may be expected to be greater than for fifteen Bingo cards. Correspondingly, the number of balls used by the players to match the interim patterns increases, thereby increasing the odds of players matching the interim patterns and increasing the interim award payout rate. Therefore, a need exists for a method for minimizing the impact of the players and/or Bingo cards upon the award structure for a multi-player Bingo game, including the impact on the odds of awarding interim pattern awards.

[0007] In general, players may find games such as slot machines, whether electro-mechanical or video, to be more appealing to Bingo games. In other cases, players may prefer Bingo games to the exclusion of other games. Typically, slot machine outcomes are based upon the resultant patterns of symbols displayed on the reels. However, as mentioned above, slot machines and other similar type games of chance fall into the category of Class III games, which may be subject to stricter approval and regulation.

[0008] As such, there is a recognized need for providing a system wherein a Bingo outcome may be presented to the players with the display simulating the appearance of traditional Class III games, such as with electromechanical reels, but with the outcome of the Bingo game determining the outcome to be displayed instead of the game engine typically used for the selected Class III game. There is also a recognized need for granting the player the option of observing or obscuring an alternate outcome display that simulates a Class III game. For example, a Bingo outcome may be used to determine the positioning of the reels of a display device having the look and feel of a slot machine. Thus, the positioning of the slot reels is based upon the Bingo pattern(s) matched by the player during the Bingo game. Further, the award amounts depicted by the display device may correspond to the award amounts, plus any scatter and bonus awards, represented by the Bingo patterns. The display device, therefore, serves as an alternate display of the
results of the Bingo game. The Bingo card, which may also be displayed, is the ultimate outcome-determining entity, with that outcome determining the outcome that is displayed on the display device. However, should the player prefer to play only the Bingo game, or prefer not to view the alternate display, the player should be granted the option of whether or not to view the alternate display of the results of the Bingo game.

[0009] For slot machines and other games of chance having a single payline (i.e., a single sequence or grouping of game symbols that is evaluated to determine whether a winning combination occurs), mapping between the winning outcomes of the game of chance and patterns in a Bingo game may not be difficult to achieve. Such games of chance typically encompass a couple dozen possible winning combinations and associated payout amounts. Selecting Bingo patterns with odds of occurrence similar to those of each desired winning outcome of the game of chance may be readily achieved by one skilled in the art.

[0010] The current trend in slot machines, for example, is to provide multiple-spinning reel games (i.e., multiple sequences or groupings of game symbols that are evaluated to determine whether one or more winning combinations occur). The award resulting from the final positioning of the reels may be the sum of the awards for all the selected paylines, plus any scatter or bonus awards. Thus, the number of possible award amounts for a given play of the game is increased dramatically and can easily reach several hundred.

SUMMARY OF THE INVENTION

[0011] In one aspect, the invention is directed to a method for conducting a multi-player wagering game and an associated instant win game having a finite pool of outcomes. The method may include receiving a deposit of an amount of a medium of currency by a player at a gaming unit, receiving input for a player’s wager on an occurrence of the multi-player wagering game at an input device of the gaming unit, and subtracting the amount of the player’s wager on the occurrence of the multi-player wagering game from the player’s available credit at the gaming unit in response to receiving the input for the player’s wager. The player’s available credit may correspond to the amount of the medium of currency deposited at the gaming unit. The method may further include subtracting an instant win game wager amount from one of the player’s available credit and the credits subtracted from the player’s available credit, determining an outcome for the occurrence of the multi-player wagering game, and selecting an outcome for the instant win game from the finite pool of outcomes.

[0012] In another aspect, the invention is directed to a method for conducting a multi-player wagering game and an associated instant win game having a finite pool of outcomes. The method may include providing a currency-accepting mechanism at a gaming unit for receiving a deposit of an amount of a medium of currency by a player at the gaming unit, and providing an input device for receiving input for a player’s wager on an occurrence of the multi-player wagering game at the gaming unit. The method may further include configuring the gaming unit to subtract the amount of the player’s wager on the occurrence of the multi-player wagering game from the player’s available credit at the gaming unit in response to receiving the input for the player’s wager at the input device, wherein the player’s available credit corresponds to the amount of the medium of currency deposited at the gaming unit, and configuring the gaming unit to subtract an instant win game wager amount from one of the player’s available credit and the credits subtracted from the player’s available credit. In addition, the method may include configuring the gaming unit to determine an outcome for the occurrence of the multi-player wagering game, and configuring the gaming unit to cause the selection of an outcome for the instant win game from the finite pool of outcomes.

[0013] In a further aspect, the invention is directed to a gaming unit for conducting a multi-player wagering game and an associated instant win game in a gaming network having a computer network and a plurality of gaming units. The gaming unit may include an input device for inputting a plurality of input selections, a gaming unit memory device, a currency-accepting mechanism that is capable of allowing a player to deposit a medium of currency, an output device, a value-dispensing mechanism that is capable of dispensing value to the player, and a gaming unit controller operatively coupled to the input device, the gaming unit memory device, the currency-accepting mechanism, the output device, and the value-dispensing mechanism. The gaming unit controller may be programmed to allow the currency-accepting mechanism to accept a deposit of an amount of a medium of currency by a player at the gaming unit, and to allow the input device to receive input for a player’s wager on an occurrence of the multi-player wagering game at the input device. The gaming unit controller may further be programmed to subtract the amount of the player’s wager on the occurrence of the multi-player wagering game from the player’s available credit at the gaming unit in response to receiving the input for the player’s wager, wherein the player’s available credit corresponds to the amount of the medium of currency deposited at the gaming unit, and to subtract an instant win game wager amount from one of the player’s available credit and the credits subtracted from the player’s available credit. Still further, the gaming unit controller may be programmed to determine an outcome for the player for the occurrence of the multi-player wagering game, and to cause a device of the gaming network to select an outcome for the instant win game from the finite pool of outcomes.

[0014] Additional aspects of the invention are defined by the claims of this patent.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] FIG. 1 is a block diagram of an embodiment of a gaming system in accordance with the invention;

[0016] FIG. 2 is a perspective view of an embodiment of one of the gaming units shown schematically in FIG. 1;

[0017] FIG. 2A illustrates an embodiment of a control panel for a gaming unit;

[0018] FIG. 3A is a block diagram of the electronic components of the gaming unit of FIG. 2;

[0019] FIG. 3B is a block diagram of another embodiment of the electrical components of the gaming unit of FIG. 2;

[0020] FIG. 4 is a block diagram of the electronic components of a network computer of FIG. 1;
FIGS. 5A and 5B are a flowchart of an embodiment of a multi-player Bingo game routine that may be performed by the gaming network;

FIGS. 6-8 are illustrations of visual displays that may be displayed during the performance of the multi-player Bingo game routine of FIGS. 5A and 5B; and

FIG. 9 is an illustration of an embodiment of a video slots display that may be displayed as an alternative outcome display;

FIGS. 10 and 11 illustrate an embodiment of the multi-line paytable corresponding to the video slots display of FIG. 9, along with illustrations of the individual paylines;

FIG. 12 is a flowchart of an embodiment of an enrollment routine for a multi-player Bingo game having optional instant win game wagering;

FIG. 13 is a flowchart of an alternative embodiment of an enrollment routine for a multi-player Bingo game having optional instant win game wagering;

FIG. 14 is an illustration of a visual display of an outcome of a finite pool instant win game; and

FIG. 15 is an illustration of possible slot machine reel stop positions corresponding to combined Bingo game and finite pool instant win game award amounts.

DETAILED DESCRIPTION OF VARIOUS EMBODIMENTS

Although the following text sets forth a detailed description of numerous different embodiments of the invention, it should be understood that the legal scope of the invention is defined by the words of the claims set forth at the end of this patent. The detailed description is to be construed as exemplary only and does not describe every possible embodiment of the invention since describing every possible embodiment would be impractical, if not impossible. Numerous alternative embodiments could be implemented, using either current technology or technology developed after the filing date of this patent, which would still fall within the scope of the claims defining the invention.

It should also be understood that, unless a term is expressly defined in this patent using the sentence “As used herein, the term ‘______’ is hereby defined to mean ______” or a similar sentence, there is no intent to limit the meaning of that term, either expressly or by implication, beyond its plain or ordinary meaning, and such term should not be interpreted to be limited in scope based on any statement made in any section of this patent (other than the language of the claims). To the extent that any term recited in the claims at the end of this patent is referred to in this patent in a manner consistent with a single meaning, that is done for sake of clarity only so as to not confuse the reader, and it is not intended that such claim term by limited, by implication or otherwise, to that single meaning. Finally, unless a claim element is defined by reciting the word “means” and a function without the recital of any structure, it is not intended that the scope of any claim element be interpreted based on the application of 35 U.S.C. § 112, sixth paragraph.

FIG. 1 illustrates one possible embodiment of a Bingo gaming system 10 in accordance with the invention. Referring to FIG. 1, the Bingo gaming system 10 may include a first group or network 12 of casino gaming units 20 operatively coupled to a network computer 22 via a network data link or bus 24. The Bingo gaming system 10 may include a second group or network 26 of casino gaming units 30 operatively coupled to a network computer 32 via a network data link or bus 34. The first and second gaming networks 12, 26 may be operatively coupled to each other via a network 40, which may comprise, for example, the Internet, a wide area network (WAN), or a local area network (LAN) via a first network link 42 and a second network link 44.

The first network 12 of gaming units 20 may be provided in a first casino, and the second network 26 of gaming units 30 may be provided in a second casino located in a separate geographic location than the first casino. For example, the two casinos may be located in different areas of the same city, or they may be located in different states. The network 40 may include a plurality of network computers or server computers (not shown), each of which may be operatively interconnected. Where the network 40 comprises the Internet, data communication may take place over the communication links 42, 44 via an Internet communication protocol.

The network computer 22 may be a server computer and may be configured to control the execution of a multi-player Bingo game played at a plurality of the gaming units 20, and to accumulate and analyze data relating to the operation of the gaming units 20. For example, the network computer 22 may continuously receive data from each of the gaming units 20 indicative of the dollar amount and number of wagers being made on each of the gaming units 20, data indicative of how much each of the gaming units 20 is paying out in winnings, data regarding the identity and gaming habits of players playing each of the gaming units 20, etc. The network computer 32 may be a server computer and may be used to perform the same or different functions in relation to the gaming units 30 as the network computer 22 described above.

Although each network 12, 26 is shown to include one network computer 22, 32 and four gaming units 20, 30, it should be understood that different numbers of computers and gaming units may be utilized. For example, the network 12 may include a plurality of network computers 22 and tens or hundreds of gaming units 20, all of which may be interconnected via the data link 24. The data link 24 may be provided as a dedicated hardwired link or a wireless link. Although the data link 24 is shown as a single data link 24, the data link 24 may comprise multiple data links.

FIG. 2 is a perspective view of one possible embodiment of one or more of the gaming units 20. Although the following description addresses the design of the gaming units 20, it should be understood that the gaming units 30 may have the same design as the gaming units 20 described below. It should be understood that the design of one or more of the gaming units 20 may be different than the design of other gaming units 20, and that the design of one or more of the gaming units 30 may be different than the design of other gaming units 30. Each gaming unit 20 may be any type of casino gaming unit and may have various different structures and methods of operation. For exemplary purposes, various designs of the gaming units 20 are
described below, but it should be understood that numerous other designs may be utilized.

[0036] Referring to FIG. 2, the gaming unit 20 may include a housing or cabinet 50 and one or more input devices, which may include a coin slot or acceptor 52, a paper currency acceptor 54, a ticket reader/printer 56 and a card reader 58, which may be used to input value to the gaming unit 20. A value input device may include any device that can accept value from a customer. Alternatively, the gaming system 10 may be configured to provide player tracking functionality as is known in the art, which may include the provision of a drawing account with previously-deposited funds, electronic funds transfer, automated debraking of bank accounts or credit cards, or any other automated mechanism allowing a player deposit, transfer or otherwise obtain value for wagering on one or more occurrence of the Bingo game. As used herein, the term “value” may encompass gaming tokens, coins, paper currency, ticket vouchers, credit or debit cards, smart cards, and any other object representative of value.

[0037] If provided on the gaming unit 20, the ticket reader/printer 56 may be used to read and/or print or otherwise encode ticket vouchers 60. The ticket vouchers 60 may be composed of paper or another printable or encodable material and may have one or more of the following informational items printed or encoded thereon: the casino name, the type of ticket voucher, a validation number, a bar code with control and/or security data, the date and time of issuance of the ticket voucher, redemption instructions and restrictions, a description of an award, and any other information that may be necessary or desirable. Different types of ticket vouchers 60 could be used, such as bonus ticket vouchers, cash-redemption ticket vouchers, casino chip ticket vouchers, extra game play ticket vouchers, merchandise ticket vouchers, restaurant ticket vouchers, show ticket vouchers, etc. The ticket vouchers 60 could be printed with an optically readable material such as ink, or data on the ticket vouchers 60 could be magnetically encoded. The ticket reader/printer 56 may be provided with the ability to both read and print ticket vouchers 60, or it may be provided with the ability to only read or only print or encode ticket vouchers 60. In the latter case, for example, some of the gaming units 20 may have ticket printers 56 that may be used to print ticket vouchers 60, which could then be used by a player in other gaming units 20 that have ticket readers 56.

[0038] If provided, the card reader 58 may include any type of card reading device, such as a magnetic card reader or an optical card reader, and may be used to read data from a card offered by a player, such as a credit card or a player tracking card. If provided for player tracking purposes, the card reader 58 may be used to read data from, and/or write data to, player tracking cards that are capable of storing data representing the identity of a player, the identity of a casino, the player’s gaming habits, etc.

[0039] The gaming unit 20 may include one or more audio speakers 62, a coin return tray 64, an input control panel 66, upper and lower display units 68, 70 for displaying images relating to the game or games provided by the gaming unit 20, a status display 71 for providing player information, such as number of credits remaining, and a light device, such as, for example, illuminated light bezels 84, a lighted topper 88, a topper 90, and a lighted gaming candle 92, as are well known in the art. The display unit 68 may be color video display capable of displaying graphical images associated with the game or games offered at the gaming unit 20. The display unit 70 may be a mechanical or electromechanical device configured to display game outcomes or other graphics associated with the game(s), such as for slot reels or wheels controlled by stepper motors, or any other desired mechanism. For example, the display unit 68 may display images associated with the multi-player Bingo game, while the display unit 70 may display an alternate presentation of the outcome of the Bingo game in the form of another casino game, such as slots. The lower display unit 70 may also include a video display unit in addition to a mechanical or electromechanical display. Alternatively, both of the displays 68, 70 may be mechanical or electromechanical devices, or both of the display 68, 70 may include video display units. Moreover, the displays 68, 70 may be combined into a single video display device, such as a CRT, LCD or electromechanical device.

[0040] The audio speakers 62 may generate audio representing sounds such as the noise of spinning slot machine reels, a dealer’s voice, music, announcements or any other audio related to a casino game. The input control panel 66 may be provided with a plurality of pushbuttons as shown or as touch-sensitive areas in cabinet 50 or on displays 68, 70 where implemented with video displays with touch-sensitive screens or other input devices that may be pressed or otherwise actuated by a player to select games, make wagers, make gaming decisions, etc. The status display 71 may provide gaming information to the player, such as the number of credits remaining, the outcome of the current game, the payout schedule, or the like. The light bezel(s) 84 may be coupled to the front face of the cabinet 50 and may enclose a plurality of lights, and further may have an aperture, allowing the display unit 70 to be visible there-through. The lighted topper 88, the topper 90, and the lighted gaming candle 92 may be stylistic elements added to the gaming unit 20 to attract a player’s attention, or to provide visual cues to gaming status.

[0041] FIG. 2A illustrates one possible embodiment of the control panel 66, which may be used where the gaming unit 20 is a slot machine having a plurality of mechanical or “virtual” reels. Referring to FIG. 2A, the control panel 66 may include a “See Pays” button 72 that, when activated, causes the display unit 68 to generate one or more display screens showing the odds or payout information for the game or games provided by the gaming unit 20. As used herein, the term “button” is intended to encompass any device that allows a player to make an input, such as an input device that must be depressed to make an input selection or a display area that a player may simply touch. The control panel 66 may include a “Cash Out” button 74 that may be activated when a player decides to terminate play on the gaming unit 20, in which case the gaming unit 20 may return value to the player, such as by returning a number of coins to the player via the coin return tray 64.

[0042] For the multi-player Bingo game, the control panel of the gaming unit 20 may be provided with a plurality of selection buttons 76, each of which may allow the player to select a different number of Bingo cards to play prior to enrolling in the Bingo game. For example, five buttons 76 may be provided, each of which may allow a player to select
one, three, five, seven or nine Bingo cards. Alternatively, where multiple sets of interim patterns are provided as described in more detail below, buttons 76 may allow a player to select one of the available interim pattern sets for use in the Bingo game, each of which may correspond to a different wager amount. The control panel 66 may further be provided with a plurality of selection buttons 78 each of which allows a player to specify a wager amount for each Bingo card selected, or for each interim pattern within a selected pattern set. For example, if the smallest wager accepted by the gaming unit 20 is a quarter ($0.25), the gaming unit 20 may be provided with five selection buttons 78, each of which may allow a player to select one, two, three, four or five quarters to wager for each Bingo card selected, or for each interim pattern in a selected pattern set. In that case, if a player were to activate the “5” button 76 (meaning that five Bingo cards were to be played in the Bingo game, or that an interim pattern set requiring a five credit wager was selected) and then activate the “3” button 78 (meaning that three coins per Bingo card or interim pattern were to be wagered), the total wager would be $3.75 (assuming the minimum bet was $0.25).

Although one possible control panel 66 is described above, it should be understood that different buttons could be utilized in the control panel 66, and that the particular buttons used may depend on the game or games that could be played on the gaming unit 20. Although the control panel 66 is shown to be separate from the display units 68, 70, it should be understood that the control panel 66 could be generated by the display unit 68 or the display unit 70, if provided with a video display unit. In that case, each of the buttons of the control panel 66 could be a colored area generated by the display unit 68 and/or 70, and some type of mechanism may be associated with the display unit 68 and/or 70 to detect when each of the buttons was touched, such as a touch-sensitive screen.

**Gaming Unit Electronics**

Although one possible control panel 66 is described above, it should be understood that different buttons could be utilized in the control panel 66, and that the particular buttons used may depend on the game or games that could be played on the gaming unit 20. Although the control panel 66 is shown to be separate from the display units 68, 70, it should be understood that the control panel 66 could be generated by the display unit 68 or the display unit 70, if provided with a video display unit. In that case, each of the buttons of the control panel 66 could be a colored area generated by the display unit 68 and/or 70, and some type of mechanism may be associated with the display unit 68 and/or 70 to detect when each of the buttons was touched, such as a touch-sensitive screen.
microprocessor 104 without passing through the I/O circuit 108. Moreover, while not illustrated in the figures, the components 71, 88, 90 and 92 may also be operatively coupled to the controller 100. For example, the components 71, 86, 88, 90 and 92 may be connected to the I/O circuit 108 via a respective direct line or other similar connection scheme.

[0051] FIG. 3B is a block diagram of an alternative embodiment to incorporate a number of components in the gaming unit 20 and/or the network computer 22. Referring to FIG. 3B, the gaming unit 20 may include a first controller 120 operatively coupled to a second controller 140 via a data link or bus 118. The first controller 120 may include a program memory 122, a microcontroller or microprocessor (MP) 124, a random-access memory (RAM) 126 and an input/output (I/O) circuit 128, all of which may be interconnected via an address/data bus 130. As above, the controller 120 may include multiple microprocessors 124, multiple RAMs 126, multiple program memories 122, and a number of different types of I/O circuits 128. Likewise, the second controller 140 may include a program memory 142, a microcontroller or microprocessor (MP) 144, a random-access memory (RAM) 146 and an input/output (I/O) circuit 148, all of which may be interconnected via an address/data bus 150. The RAM(s) 126, 146 and program memories 122, 142 may be implemented as semiconductor memories, magnetically readable memories, and/or optically readable memories, for example. One or both of the controllers 120, 140 may be operatively coupled to the network computer 22 via the data link 24.

[0052] The ticket reader/printer 56 and the upper display unit 68 may be operatively coupled to the first controller 120 by either a unidirectional or bidirectional, single-line or multiple-line data link. The speaker(s) 62 may be operatively coupled to a sound circuit 132, which, in turn, may be coupled to the I/O circuit 128. As shown in FIG. 3A, the components 56, 68 and 132 may be connected to the I/O circuit 128 via a respective direct line or conductor, though different connection schemes could be used such as a common bus or other data link that is shared by a number of components. Furthermore, some of the components may be directly connected to the microprocessor 124.

[0053] The second controller 140 may be operatively coupled to the coin acceptor 52, the bill acceptor 54, the card reader 58, the control panel 66, the lower display unit 70 and the light bezel 84. The components 52, 54, 58, 66, 70 and 84 may be connected to the I/O circuit 148 via a respective direct line or conductor, and via different connection schemes such as a common bus or other data link that is shared by a number of components. Some of the components may also be directly connected to the microprocessor 144 without passing through the I/O circuit 148.

[0054] Although not illustrated in the figures, the components 71, 88, 90 and 92 may also be operatively coupled to the first controller 120 via the I/O circuit 128. For example, the components 71, 86, 88, 90 and 92 may be connected to the I/O circuit 128 via a respective direct line or other similar connection scheme. One or more of the components 71, 86, 88, 90 and 92 may likewise be operatively coupled to the second controller 140. The components 52, 54, 58, 66 and 84 may also be operatively coupled to the first controller 120, in addition to or as an alternative to, being coupled to the second controller 140. Likewise, the components 56 and 62 may be operatively coupled to the second controller 140.

Overall Operation of Gaming Unit

[0055] One manner in which one or more of the gaming units 20 (and one or more of the gaming units 30) may operate is described below in connection with a number of flowcharts which represent a number of portions or routines of one or more computer programs, which may be stored in one or more of the memories of the controller 100. The computer program(s) or portions thereof may be stored remotely, outside of the gaming unit 20, and may control the operation of the gaming unit 20 from a remote location. Such remote control may be facilitated with the use of a wireless connection, or by an Internet interface that connects the gaming unit 20 with a remote computer (such as one of the network computers 22, 32) having a memory in which the computer program portions are stored. The computer program portions may be written in any high level language such as C, C++, C#, Java or the like or any low-level assembly or machine language. By storing the computer program portions therein, various portions of the memories 102, 106 are physically and/or structurally configured in accordance with computer program instructions.

Network Computer/Server Electronics

[0056] The network 40, and hence the individual gaming units 20, 30, may be communicatively connected to network computers or servers 22, 32. Using network computer 22 as an example, the network computer 22 may be a single networked computer, or a series of interconnected computers having access to the network 10 via a gateway or other known networking system. Referring to FIG. 4, generally, the network computer 22 may include a central gaming controller 162 configured to manage, execute and control the individual gaming units 20, 30 and the routines used to play the multi-player Bingo games. The network computer 22 may include a memory 164 for storing programs and routines, a microprocessor 166 (MP) for executing the stored programs, a random access memory 168 (RAM) and an input/output bus 170 (I/O). The memory 164, microprocessor 166, RAM 168 and the I/O bus 170 may be multiplexed together via a common bus, as shown, or may each be directly connected via dedicated communications lines, depending on the needs of the network 10.

[0057] Further, the network computer 22 may be directly connected, hardwired, or indirectly connected through the I/O bus 170 to external components such as a display 172, a control panel 174, a network interface device 176 and other peripheral I/O devices 178. Examples of other peripherals device include, but are not limited to, storage devices, wireless adaptors, printers, and the like. In addition, a database 180 may be communicatively connected to the central gaming controller 162 and provide a data repository for the storage and correlation of information gathered from the individual gaming units 20, 30. The information stored within the database 180 may be information relating to individual gaming units 20, 30 such as gaming unit-specific information like a gaming unit identification code and/or location code. The database 180 may further include casino game specific information such as the total amounts wagered and paid out, game outcomes, player selection history information, and the like.
Multi-Player Bingo

[0058] FIGS. 5A and 5B are a flowchart of an example of a multi-player Bingo game operating routine 200 that may have portions stored in the memories of a plurality of gaming units 20 and the network computer 22 to allow a plurality of players to play a Bingo game against each other. Further examples of multi-player Bingo game operating routines and associated displays are disclosed in U.S. application Ser. No. 10/887,111 entitled “Multi-Player Bingo Game with Multi-Level Award Amount Pattern Mapping” which is expressly incorporated by reference herein. However, it should be understood that additional types of games are contemplated which may utilized an alternate outcome display, including additional multi-player games, single-player games and different types of Bingo games.

[0059] Referring to FIG. 5A, the multi-player Bingo routine 200 may begin operation at block 202 at which a first player enrolls in the multi-player Bingo game at one of the gaming units 20. In order to enroll in the multi-player Bingo game, a player may initially deposit value in the gaming unit 20 via the coin slot 52, currency acceptor 54, ticket reader 56, card reader 58, or by any other means by which a player may obtain credits on the gaming unit 20. Once value is deposited and credits are registered on the gaming unit 20, a player may make game-specific selections for the occurrence of the Bingo game via one or more selection buttons at input control panel 66, or by touching designated portions of the video display units 68, 70.

[0060] FIG. 6 illustrates an exemplary first player display 300 that may be shown on, for example, the display unit 68 during the performance of the multi-player Bingo routine 200 at a first gaming unit 20, and an exemplary second player display 320 that may be shown, for example, on the display unit 68 during the performance of the multi-player Bingo routine 200 at a second gaming unit 20. The first player display 300 may include video images 302 of a Bingo card that may represent the first player’s entry in the multi-player Bingo game. In the illustrated embodiment, the Bingo card image 302 may be in the form of a traditional Bingo card as is known in the art and may consist of a 5×5 matrix of numbers, with the first column having five numbers selected from the range of 1 to 15 without repeating numbers, the second column having five numbers selected from the range of 16 to 30 without repeating numbers, the third column having four numbers selected from the range of 31 to 45 without repeating numbers and having a “Free Space” spot disposed in the middle position, the fourth column having five numbers selected from the range of 46 to 60 without repeating numbers, and the fifth column having five numbers selected from the range of 61 to 75 without repeating numbers.

[0061] The first player display 300 may include video images 304-310 corresponding to information relating to the game being executed by the network computer 22 and gaming unit 20. These images may include a game number image 304 for the Bingo game being played by the player at the gaming unit 20, a Bingo win amount image 306 displaying the amount awarded to the first player or players matching the game-winning pattern on the Bingo card 302, a pattern win amount image 308 displaying the amount awarded for matching predefined interim win patterns which will be discussed further hereinafter, and a total win amount image 310 displaying the total amount awarded to the player for the Bingo game indicated at game number 304, and an area 312 that may be used to display the numbers in the ball draw for the Bingo game in a manner illustrated more fully below. In addition, the first player display 300 may include images of buttons that, when touched by the player, may cause additional game-related information to be displayed, or may control execution of the multi-player Bingo routine 200.

[0062] For example, the first player display 300 may include a “See Pays” button 314 that, when activated, may cause the display unit 68 to generate one or more display screens showing the pattern or patterns to be matched, odds of matching the various patterns or winning the available awards, or other payout information for the Bingo game and the interim pattern wins. The first player display 300 may also display a “Play” button 316 that when touched may cause the game unit 20 to enroll the player in the next occurrence of the Bingo game, and a “Daub” button 318 that the player may touch to mark matched numbers on the Bingo card after the ball draw. The term “daub” in Bingo refers to marking or covering by the player, or possibly by an electronic Bingo handset, of the numbers or symbols on the Bingo card(s). With respect to the multi-player Bingo game, “daubing” refers to the player acting to mark or cover the numbers either individually or by initiating a process wherein the gaming unit 20 marks or covers the matched numbers on the Bingo card 302. While not shown, those skilled in the art will understand that a plurality of player-selectable buttons may also be displayed on the first player display 300 of the control panel 66 to allow the player to control the play of the Bingo game. The second player display 320 may be similar to the first player display 300 and display similar images, such as Bingo card 322, game number image 324, Bingo win amount image 326, pattern win amount image 328, total win amount image 330, daub area 332, “See Pays” button 334, “Play” button 336, “Daub” button 338, and other control buttons if necessary.

[0063] While the Bingo game illustrated herein uses a traditional 5×5 matrix of numbers with a free space in the center, those skilled in the art will understand that the Bingo game may be configured to use other configurations of numbers, characters or other game indicia arranged in any fashion wherein numbers, characters, or other indicia may be drawn and compared to the configuration, with the first player or players matching a predetermined pattern of numbers, characters or other indicia being declared the winner. For purposes of this specification, such configurations of numbers, characters or other game indicia may be referred to as “arrays,” and an array may be any configuration or grouping of numbers, characters or other game indicia wherein the game indicia of the array may be compared to game indicia drawn from the range of game indicia available for the multi-player game, and wherein matched indicia of the array may be compared to a predetermined pattern or patterns in order to determine a winner or winners of an occurrence of the multi-player wagering and/or to award game-winning or other awards to the players. Such arrays may be configured as two-dimensional matrices such as, for example, traditional Bingo cards as described above, or in any other arrangement of game indicia wherein matched game indicia of the array may form patterns.
When the first player enrolls in the Bingo game, the Bingo card 302 may be selected at random by the controller 100, or the controller 120, of the gaming unit 20. The player may be required to play the controller-generated Bingo card 302 or, alternatively, the player may be permitted to view other Bingo cards 302 and to select a Bingo card 302 for use in the Bingo game. For example, once the controller-selected Bingo card 302 is displayed to the player at video display 68, the player may be able to cycle through other Bingo cards 302 by touching the area of the video display 68 where the Bingo card 302 is displayed, or by touching other appropriate buttons either displayed on the video display 68 or located at the control panel 66. In addition to being assigned and/or selecting a Bingo card 302, the player may also enter a wager amount for the Bingo game by pressing the appropriate selection buttons on the first player display 300 or control panel 66. Selection of the wager amount is discussed further herein below. Once the Bingo card is selected for the first player, and the player enters a wager for the Bingo game, the player may enroll in a Bingo game by pressing the “Play” button 316. When the controller 100 (or controller 120) detects that the first player has touched the “Play” button 316, the controller 100 (or controller 120) may transmit a message to the network computer 22 indicating that the first player has enrolled in the Bingo game. In the illustrated embodiment, the gaming unit 20 may also transmit information to the network computer 22 regarding the content of the first player’s Bingo card for use by the network computer 22 in a manner discussed more fully below.

Because each Bingo game is played by multiple players, the network computer 22 may be required to wait for the enrollment of additional players before drawing numbers for the occurrence of the Bingo game. Referring back to FIG. 5A, the network computer 22 may determine whether a second player has enrolled in the Bingo game and another gaming unit 20 at block 204. If the network computer 22 has not received a message from another gaming unit 20 indicating that a second player has enrolled in the Bingo game, the network computer 22 will continue to wait until receiving such a message. At the same time, the first gaming unit 20 may display a message on the first player display 300 informing the first player that the system is waiting for additional players to join the Bingo game before beginning the ball draw.

At some point, a second player at a second gaming unit 20 may select a Bingo card and desired wagering amount, and touch the play button 336 of the second player display 320 to enroll in the Bingo game. The second gaming unit 20 may detect the touching of the play button 336 by the second player and transmit the necessary enrollment message to the network computer 22 to enroll the second player. When the network computer 22 detects the enrollment message from the second gaming unit 20, control may pass to a block 206 wherein the network computer 22 may start an enrollment timer for a predetermined period of time within which additional players may enroll in the Bingo game. The enrollment period may be a fixed amount of time for all occurrences of the Bingo game, or may be capable of being changed to a desired time period by a casino employee at the network computer 22. Further, the network computer 22 may be programmed to adjust the time period dynamically as the Bingo game is being played in order to maintain a desired average number of players. For example, the network computer 22 may reduce the time period during heavy play periods to prevent too many players from enrolling, and increase the time period during light play periods to give more players the opportunity to enroll in an occurrence of the Bingo game.

During the enrollment period, the network computer 22 and other gaming units 20 may enroll additional players in the Bingo game at block 208. The enrollment process for the additional players may be similar to the process for the first two players, with each additional player selecting a Bingo card, selecting a wager amount, and touching the play button of the gaming unit 20 and thereby causing an enrollment message to be transmitted from the gaming unit 20 to the network computer 22. If the gaming units 20 include alternate outcome displays for displaying the outcome of the Bingo game in an alternative format, such as a slots display as discussed below, animated graphics or other display, such as the spinning of electro-mechanical reels, may be initiated at the gaming units 20 once the second player enrolls in the Bingo game. At block 210, the network computer 22 evaluates the enrollment timer to determine whether the time for additional players to enroll in the Bingo game has expired. If the enrollment timer has not expired, the network computer 22 continues to wait for additional players to enroll in the Bingo game. Once the enrollment timer expires, the network computer 22 proceeds with conducting the Bingo game for the players that have enrolled in that occurrence of the Bingo game. Any players enrolling after the expiration of the enrollment timer may be enrolled in the subsequent occurrence of the Bingo game in the same manner. Consequently, the network computer 22 may conduct multiple occurrences of the Bingo game simultaneously.

A game-winning pattern or patterns may be predetermined and used for each occurrence of the Bingo game. Alternatively, at block 212 the network computer 22 may determine a game-winning pattern to be used for the occurrence of the Bingo game. The network computer 22 may store a plurality of predetermined game-winning patterns and randomly or serially select one or more of the stored game-winning patterns for each occurrence of the Bingo game. The predetermined game-winning patterns may include game-winning patterns used in traditional Bingo games, such as rows, columns or diagonals of numbers on the Bingo card 302, four corners matches, picture frames, coveralls, and the like. The predetermined patterns may also include nontraditional game-winning patterns such as patterns forming letters, numbers, or other symbols, or any other desired pattern that may be formed by one or more of the numbers, characters, or other game indicia used to form the Bingo card 302 for a player. Alternatively, the game-winning pattern for a given occurrence of the Bingo game may be determined at least in part on the number of players entered for the occurrence of the Bingo game in order to approach a desired distribution of the number of balls drawn for the first player to match the game-winning pattern in a manner described more fully below. Whether based on the number of players or Bingo cards enrolled for the occurrence of the Bingo game or other criteria, the game-winning patterns may be generated randomly but consistent with pre-designated parameters, such as number of spots in the game-winning pattern, number of shared spots between two or more game-winning patterns, and the like. Once the game-winning pattern is determined, the network computer
22 may transmit the game-winning pattern to the gaming units 20 which in turn may display the game-winning pattern to the players on the Bingo displays 300, 320, such as with a shaded area 340 on the Bingo cards 302, 322 corresponding to the game-winning pattern.

[0069] In some implementations of the multi-player Bingo game, the first player or players matching the game-winning pattern may be awarded a fixed prize amount, or a prize amount proportionate to the amount wagered by the player or players on the occurrence of the Bingo game. In this embodiment, a portion of each player’s wager on each occurrence of the Bingo game may be accumulated in a prize pool from which players may be awarded an additional prize amount for matching the game-winning pattern or other patterns in fewer than a predetermined number of balls are drawn for the occurrence of the Bingo game. For example, a player may be awarded an additional prize from the prize pool for matching a five number pattern when ten or fewer balls have been drawn, or by covering the entire Bingo card when fewer than 30 balls have been drawn. The amount of the additional prize from the prize pool may be determined in a manner described more fully below. In this embodiment, control may pass to a block 214, wherein a percentage or other predetermined portion or each player’s wager on the occurrence of the Bingo game may be added to a prize pool. The portion of each player’s wager for the prize pool may be determined at each gaming unit 20 and transmitted to the network computer 22 or other device in the gaming network 10 where at the prize pool is accumulated and stored. Alternatively, the network computer 22 may deduct the portion for the prize pool from each of the players’ wagers after the players enroll in the Bingo game. While block 214 is illustrated as occurring prior to the ball draw, the additions to the prize pool may occur at any appropriate or desired time during the Bingo game.

[0070] In this embodiment, control of the Bingo game routine 200 may pass to a block 216 wherein the network computer 22 draws numbers from the range of 1 to 75 until one or more Bingo card matches the game-winning pattern. The network computer 22 may be configured to randomly select numbers from the range of 1 to 75 without repeating numbers, and to compare the drawn number to the numbers on each player’s Bingo card to find matching numbers. As each number is selected and compared to the player’s Bingo cards, the network computer 22 may also compare the patterns formed by the matching numbers on each game card to the game-winning pattern for the occurrence of the Bingo game. Once the network computer 22 determines that one game card has a pattern of matched numbers matching the game-winning pattern, the network computer 22 may cease selecting numbers for the ball draw and transmit the numbers for the ball draw to the gaming units 20 corresponding to each player entered in the occurrence of the Bingo game at block 218.

[0071] The gaming units 20 receive the numbers for the ball draw from the network computer 22, and compare the drawn numbers to the corresponding players’ Bingo cards at block 220 of FIG. 5B in a similar manner as the network computer 22 to identify matches between the numbers in the ball draw and the numbers on the players Bingo card. After comparing the numbers from the ball draw to the numbers on the player’s card, the gaming unit 20 may further determine whether patterns formed on the player’s Bingo card matches the game-winning pattern for the occurrence of the Bingo game. At block 222, each gaming unit 20 may display the outcome of the ball draw for the Bingo game at the display unit 68. In the illustrated embodiment (FIG. 6), the numbers for the ball draw may be displayed on the Bingo displays 300, 320 in the ball draw areas 312, 832, respectively, with the numbers being displayed in the order the numbers were selected by the network computer 22. The ball draw display may further be enhanced to match the Bingo theme by circumscribing each number, or graphically displaying each number as being printed on the surface of a ball 341, and by further adding the associated letter from the word “Bingo” corresponding to the column of the Bingo card in which the number would appear. Additionally, the numbers on the players’ Bingo cards 302, 322 matching numbers selected by the network computer 22 in the ball draw may be highlighted on the Bingo cards 302, 322, such as by displaying phantom parks 342 to assist the players in identifying which number on the Bingo cards 302, 322 have been matched.

[0072] The multi-player Bingo game may be implemented such that once at least one player matches the game-winning pattern, the game is over and the player or players matching the game-winning pattern receive the corresponding Bingo win award. If the gaming units 20 include alternate outcome displays for displaying the outcome of the Bingo game in an alternative format, the alternate outcome display may also show the player’s outcome for the Bingo game, such as by stopping the reels of slots display in positions corresponding to the outcome of the Bingo game. However, the multi-player Bingo game may be implemented such that the players may be required to perform a physical act to cause the matching numbers to be marked on the players’ Bingo cards. In fact, such a physical act may be a regulatory requirement in the jurisdiction in which the multi-player Bingo game is implemented. In the embodiment of the Bingo game routine 200 illustrated in FIGS. 5A and 5B, players may be required to dub in order to have the matching numbers marked on their Bingo cards, and the winning players may be required to dub their Bingo cards in order to claim the award for the occurrence of the Bingo game. In this embodiment, at block 222, each gaming unit 20 may be configured to display prompts to the players, such as prompts 344, 346 on the Bingo displays 300, 320, respectively, of FIG. 7, instructing the players to dub in order to complete the Bingo game. Additional prompts may be displayed on the lower display unit 70, as described below. The same prompt may be displayed for all players, or different prompts may be displayed to players who may have won a winning Bingo Card. For example, as illustrated in FIG. 7, the first player with Bingo card 302 may be one of the first players to match the game-winning pattern. In this case, the prompt 344 displayed to the first player may instruct the player to dub the Bingo card to claim the Bingo game prize. The Bingo game prize may be claimed by the winning player by touching the “Dub” button 318 to acknowledge the prompt. The remaining players, such as the second player, that have not matched the game-winning pattern may be shown a prompt 346 that may merely instruct the players to dub in order to complete the Bingo game, which may be accomplished by touching the “Dub” button 338.

[0073] Once the initial ball draw is transmitted from the network computer 22 to the gaming units 20, and the ball draw and phantom marks 342, if any, are displayed to the
players at their respective gaming units 20, control may pass to a block 224 wherein a sleep timer may be initiated with a predetermined amount of time within which the winning player or players must daub their Bingo cards in order to claim the Bingo game award. A sleep timer may be set at each gaming unit 20 at which the player matches the game-winning pattern, or a single timer may be set at the network computer 22. During the sleep timer period, the gaming units 20 may mark the matching numbers on the players Bingo cards as the players touch the corresponding “Daub” buttons 318, 338. The phantom marks 342 on the Bingo cards 302, 322 may be changed into daub marks 348 by the gaming units 20 as the gaming units 20 detect the players touching the “Daub” buttons 318, 338. Also during the sleep timer period, the network computer 22 and/or gaming units 20 may evaluate whether one or more players matching the game-winning pattern has daubed the players Bingo card at block 228. If the winner or winners of the occurrence of the Bingo game have daubed their Bingo cards, control passes to a block 230 wherein the Bingo win award may be determined for the winning player or players at either the corresponding gaming units 20, or at the network computer 22. As previously discussed, the Bingo win award may be a fixed award amount, an amount proportionate to the players wager, a portion or all of an accumulated prize pool, or a combination of various award amounts.

After the Bingo game award or awards are determined, control may pass to block 232 wherein an award image, such as the award image 350 illustrated in FIG. 8, may be displayed to the winning players at the corresponding gaming units 20. The award image 350 may include a summary of the award amount, a congratulatory message to the winning player or players, and other images that may enhance the winning experience of the player or players. The award image 350 may be displayed for a predetermined amount of time or until the player touches the display unit 68 to acknowledge the display of the game award. At this time, an alternate outcome display at the gaming unit 20 may also show the player’s outcome for the Bingo game, if so requested by the player, such as by stopping the reels of slots display in positions corresponding to the outcome of the Bingo game. After the award graphic is displayed, control may pass to a block 234 wherein the credits at the gaming units 20 for the winning players are incremented by the award amount.

In certain jurisdictions, regulatory requirements may exist for performing at least two releases of numbers, along with corresponding daubing of the Bingo cards by the players, prior to declaring a winner for the occurrence of the Bingo game. In gaming networks 10 implemented in such jurisdictions, it may be necessary to modify the Bingo game routine 200 such that at least two subsets of randomly selected numbers are transmitted from the network computer 22 to the gaming units 20 in an occurrence of the Bingo game. In such implementations, once the network computer 22 determines that at least one game card matches a game-winning pattern with the drawn numbers at block 216, the network computer 22 may transmit a first subset of the selected numbers to the gaming units 20 including at least one number less than the numbers required for one of the game cards to match the game-winning pattern. For example, if the network computer 22 determines that a game card matches the game-winning pattern on the forty-second selected number, the network computer 22 may transmit the first forty-one or fewer selected numbers to the gaming units 20 in the first subset. Once the gaming units 20 receive the first subset of numbers, the routine 200 may proceed in the same manner, with the gaming units 20 evaluating the game cards, displaying the outcomes and waiting for the players to daub their game cards. After the expiration of the sleep timer, control may return to block 218 wherein the network computer 22 may transmit a second subset of the selected numbers with the remaining numbers required for one of the game cards to match the game-winning pattern, and the routine 200 may proceed in the manner illustrated in FIGS. 5A and 5B and further described herein.

If the network computer 22 and game units 20 do not detect that the winner or winners of the Bingo game have daubed their Bingo cards at block 228, control passes to a block 236 that determines whether the sleep timer has expired. If the sleep timer has not expired, control passes back to block 226 wherein the gaming units 20 continue to mark the Bingo cards of the corresponding players as the players touch the “Daub” button 318, 338. If the sleep timer expires without any winner or winners of the Bingo game daubing their Bingo cards, control passes to a block 238 wherein the network computer 22 may determine whether all the players have slept through their opportunity to win the Bingo game. If players remain that have not slept through their opportunity to win the Bingo game, i.e., players whose Bingo cards have not yet matched the game-winning pattern, control passes to a block 240 wherein the winner or winners, who have failed to daub their Bingo cards are eliminated from being able to claim the prize for the Bingo game. For example, after the potential winner sleeps through the player’s opportunity to win the Bingo game, the network computer 22 may flag or otherwise indicate that the player has slept through the player’s opportunity to win the occurrence of the Bingo game. Additionally, the players sleeping through the period for daubing the players’ winning Bingo cards may be notified that the right to claim an award for the Bingo game has been relinquished by displaying an image on the video display 68 of the corresponding gaming unit 20. However, where multiple game-winning patterns are used in the Bingo game, a player sleeping through a match of one of the game-winning pattern may be eliminated from claiming that Bingo win, but may be permitted to win the Bingo game if the player matches another game-winning pattern later in the ball draw and successfully daubs their Bingo card.

After eliminating the sleeping player or players, control may return to block 216 wherein the network computer 22 may draw additional numbers until at least one Bingo card of the remaining players matches the game-winning pattern. The Bingo game routine 200 continues in the manner previously described, with the game computer 22 transmitting the numbers to the game units 20 at block 218, and the game units evaluating the players Bingo cards at block 220. At block 222, the display of the outcome of the Bingo game displayed at the video display 68 at the game units 20 may be updated to reflect the continuation of the ball draw. The sleep timer may be reinitiated at block 224, and the gaming units 20 may mark the players Bingo cards as the players touch the “Daub” button 318, 338 at block 226 until either all the winners daub (block 228) or the sleep timer expires (block 236). If the remaining player or players matching the game-winning pattern have daubed their Bingo cards, Bingo win awards are determined at block 230 and the
Returning to block 238, if the network computer 22 determines that the last remaining player has slept through daubing the players Bingo card, several alternatives are possible for terminating the Bingo game. In the illustrated embodiment, control passes to a block 242 wherein the gaming units 20 involved in the occurrence of the Bingo game may sleep infinitely until one of the gaming units 20 detects a player daubing their Bingo card by touching the "Daub" button 338. During this time, casino personnel may be alerted to the suspended Bingo game by displaying messages at the gaming units 20, network computer 22, or any other component of the Bingo gaming system 10 used to monitor the activity occurring in the Bingo gaming system 10, by illuminating the candles 92 mounted on the gaming units 20, or by any other mechanism available within the system for alerting casino personnel to abnormal conditions within the Bingo gaming system 10. Alternatively, the occurrence of the Bingo game may be terminated after a predetermined period of time, with the wagers on the terminated game being retained by the Bingo gaming system 10. During the time that the last remaining player sleeps, players that earlier slept through their Bingo wins may be permitted to daub their Bingo cards, collect interim pattern awards if any, and continue playing subsequent Bingo games without waiting for the last remaining player to claim the Bingo win.

While the general flow for the multi-player Bingo game routine is discussed herein, the game play for the multi-player Bingo game may be modified as necessary based on system design and/or regulatory requirements, design preferences and the like. For example, where two or more players may remain in an occurrence of the Bingo game, and wherein each of the remaining players may require the same number of balls to match the game-winning pattern, the Bingo win award may be awarded to the remaining players based whether some or all of the players daub their Bingo cards. If all remaining players daub their Bingo cards, the Bingo win award may be split between the remaining players. If less than all of the remaining players daub their Bingo cards before the expiration of the sleep timer, the routine may be configured either to split the Bingo win award between the remaining players that have daubed their Bingo cards, or to split the Bingo win award between all the remaining players if any of the remaining players daub their Bingo cards before the expiration of the sleep timer. Similarly, if all the remaining players sleep through their Bingos, the Bingo game may sleep infinitely until one of the remaining players daubs their Bingo card. Once one of the remaining players daubs their Bingo card, the routine may be configured either to pay the entire Bingo win award to the remaining player to first daub their Bingo card, or to split the Bingo win award between all the remaining players if any of the remaining players daub their Bingo cards before the expiration of the sleep timer.

The routine may also be modified in implementations where a player may not be required to daub their Bingo cards to receive the Bingo win award. In these implementations, the portions of the routine relating to the sleep timer and daubing, and to eliminating sleeping players and declaring additional winners may be omitted. Even in implementations where players may sleep through a Bingo win, the consequences of sleeping through the Bingo win may be varied as desired. For example, as illustrated, the player who sleeps through a Bingo win may be shut out of collecting the Bingo win even if the player daubs the Bingo card after the sleep timer expires and the player is eliminated. Alternatively, the player initially sleeping through a Bingo win may be provided with the opportunity to claim the Bingo win award if the player daubs the Bingo card before a subsequently declared winning player daubs their Bingo card.

Interim Pattern Bingo Awards

In order to enhance the players' gaming experience while playing the multi-player Bingo game, the Bingo game may be configured with alternative methods for providing additional award payouts to the players, including players that are not the first to match the game-winning pattern. In one embodiment, players may be awarded prizes for matching predefined interim patterns on their Bingo cards having associated award amounts during the course of the Bingo game. The patterns may be termed "interim" because the patterns may be matched during the course of the game, and the patterns do not result in the termination of the game when they are matched. The Bingo game terminates only when one or more players match the game-winning pattern. When a player matches an interim win pattern, the player may be awarded the prize amount corresponding to the matched interim pattern regardless of whether the player matches the game-winning pattern.

The interim pattern sets may vary in terms of the number of interim patterns in the sets, the configuration of the interim patterns in the sets, the complexity of the interim patterns in the sets, the interim pattern award amounts available for matching interim patterns in the sets, and the like. The gaming units 20 may be configured to randomly or sequentially select one of a plurality of available interim pattern sets for use in a given occurrence of the Bingo game. Alternatively, the players may be provided with the ability to select one of the available interim pattern sets based on their own preferences. For example, several interim pattern sets having approximately the same overall interim pattern award payout rates may be provided, but with the interim pattern sets paying out interim pattern awards with varying frequencies. Some interim pattern sets may result in paying out relatively small interim pattern awards relatively frequently, some interim pattern sets may result in paying out relatively large interim pattern awards relatively infrequently, and some interim pattern sets may result in paying out a combination of large and small interim pattern awards. The gaming units 20 may display the interim pattern sets and allow the players to select interim pattern sets corresponding to their preferences in their gaming experience.

Alternatively, the interim pattern sets used for an occurrence of the Bingo game may be determined based on the amount wagered by the players. In slots, the number of winning combinations and the maximum amount that may be won by the player is dependent on number of paylines played and the amount wagered per payline. The maximum prizes may only be available for where the player wagers the maximum amount on the maximum number of available paylines. Similarly in the multi-player Bingo game, the players may be able select one of a plurality of available
interim pattern sets and select a wager amount to be applied to each interim pattern within the interim pattern sets. Where nine interim pattern sets are available, the player may be able to play the first interim pattern set for one credit, play the second interim pattern set for two credits, and so on up to nine credits for the ninth interim pattern set. The first interim pattern set costing the player only a one credit wager may have the lowest probability of paying out an interim pattern award and have the lowest interim pattern award amounts available, while the ninth interim pattern set may have the highest probability of paying out an interim pattern award and have the highest interim pattern award amounts available. Additionally, the player may be able wager from one to five times the credits required for a given interim pattern set. Consequently, in this example the player may be able to wager between one and forty-five credits per game in order to vary the odds of receiving an interim pattern award and of winning a larger interim pattern award based on their preferences for their gaming experience.

Examples of interim patterns and interim pattern Bingo awards are further disclosed in U.S. application Ser. No. 10/887,111, referred to above and expressly incorporated by reference herein.

Multi-Level Award Amount Pattern Mapping

Where relatively few Bingo win and/or interim pattern award amounts may be offered to the players of the multi-player Bingo game, it may be relatively simple to select a set of patterns to achieve a desired probability of paying out each award amount and a desired overall Bingo award payout rate. Moreover, with relatively few Bingo patterns to evaluate, the players may be able to readily identify whether any of the Bingo patterns are matched on their Bingo cards. As the number of award amounts increases, it may become increasingly difficult to map the award amounts to Bingo patterns on a standard Bingo card. As the number of award amounts increases, the amount of interaction between the Bingo patterns, and the corresponding impact on probabilities of matching the Bingo patterns where only the highest award amount is paid out, may increase the difficulty of matching the probabilities of matching the Bingo patterns to the desired probabilities of paying out the award amounts. Moreover, the players may have more difficulty identifying Bingo pattern matches on their Bingo cards as the number of Bingo patterns increases.

The difficulty in matching Bingo patterns to a large number of award amounts may be reduced by applying a multi-level mapping strategy wherein most or all of the desired award amounts may be provided without the necessity of assigning distinct Bingo patterns to each award amount. In one embodiment of a multi-level mapping strategy, the desired award amounts may be divided into a plurality of subsets or pay groups, with each subset or pay group containing one or more of the award amounts, and then assigning primary patterns to each of the pay groups and secondary patterns to each of the award amounts within the pay groups. The mapping strategy may be applied equally to award amounts for Bingo game winners and for interim pattern matches. The award amounts and associated probabilities may be determined in any known manner for calculating paytables to achieve a desired award payout rate. Moreover, as an alternative to determining the award amounts and probabilities from scratch, the awards and probabilities may be derived from known paytables used in other gaming devices to achieve a desired payout rate. The mapping strategy may likewise be used to match one or more known alternate game outcomes to a Bingo game outcome. An example of a multi-level mapping routine is disclosed in U.S. application Ser. No. 10/887,111, referred to above and expressly incorporated by reference herein.

Alternative Displays of Bingo Game Outcomes

As previously discussed, players may find the display of other games, such as slot machines, video poker, video blackjack, video Keno and the like, to be more appealing than the display of Bingo games. Moreover, as the number of award amounts and, correspondingly the number of Bingo patterns, offered in a Bingo game increases, it may become more difficult for players to discern winning outcomes (i.e. pattern matches) in a Bingo game than, for example, a slot machine offering a comparable number of award amounts based on matching reel symbols along a plurality of paylines. The Bingo player’s gaming experience may be enhanced by providing an alternate display of the outcome of the Bingo game determined based on a ball draw and the player’s Bingo card in a format that may be preferential to the player or allow the player to more readily identify winning outcomes of the Bingo game. In one alternative, the outcome determined by the Bingo game may be presented to the players with the display simulating the appearance of a traditional Class III game, such as electromechanical or video slots, video poker, video blackjack, video Keno and the like. In another alternative, the player may be provided with the option of observing the simulated display.

It may be emphasized that the slot reels or other alternate outcome displays used to display the outcome determined by the Bingo game may not themselves determine the outcome of the Bingo game. The Bingo gaming system is conducting a Bingo game that may still be played without providing the supplemental outcome display offered by such alternate outcome displays. The ball draw leads to covered numbers, characters or other game indicia on the Bingo card. Achieving coverage of the predetermined game-winning pattern leads to a Bingo win award. The game-winning patterns and/or interim patterns may be chosen to achieve desired Bingo game dynamics. However, the targeted dynamics (i.e. the Bingo win award values, the relative frequency of occurrence of the awards, the Bingo win and interim pattern payout rates, and the like) may be selected so as to closely mirror the dynamics that a desired alternate outcome display, such as a particular slot machine or other casino game, might produce. The correspondence between the Bingo game dynamics and the casino game dynamics may allow the designer to map the Bingo game awards to the display of the casino game via the alternate outcome display, thereby providing an alternative and potentially more user-appalling display of the Bingo outcome.

In one embodiment, an existing casino game may be used for the alternate outcome display, with the award amounts and the payable for the casino game being used to configure the Bingo game dynamics. For example, the multi-player Bingo game may include an alternate outcome display simulating the appearance of a traditional slot machine, with interim patterns being mapped to the award amounts of the slot machine payable to achieve approxi-
mately the same payout rate for the interim pattern awards as for the slot machine. Where relatively few award amounts are offered in the payable for the slot machine, a set of interim patterns may be mapped to the award amounts, with the interim patterns having approximately the same odds of being matched on a player’s Bingo card as the odds of the slot machine paying out the corresponding award amount.

[0090] The alternate outcome display may be provided at the gaming units 20 in addition to the display of the Bingo game discussed above. For the above example, the outcome of the Bingo game may be displayed at the first display device 68 of the gaming unit 20, and the alternate outcome display may be provided at the second display device 70 as an electromechanical set of slot reels. While the controller 100 may be utilized, the gaming unit 20 may be provided with multiple controllers 120, 140, as discussed above. The first controller 120 may execute the multi-player Bingo game routine 200 of FIGS. 5A and 5B. The first controller 120 may display the outcome determined at block 232 and provide the outcome to the second controller 140. The second controller 140 may determine a corresponding alternate outcome display and cause the display unit 70 to display the alternate outcome display. The first controller 120 may further provide the second controller 140 with data relating to a daub prompt, in response to which the second controller 140 may cause a corresponding daub prompt to be displayed on the display unit 70, as discussed further below.

[0091] FIG. 9 is an exemplary display 450 that may be shown on the display unit 70 if provided as a touch-screen video display as an alternate outcome display. Alternatively, the display unit 70 may consist of plurality of electromechanical reels of the type used in slot machines, and a corresponding control panel, which may be provided as the control panel 66. The display 450 may include a plurality of slot machine reels 452, each of the reels having a plurality of reel symbols 454 associated therewith. Although the display 450 may include a plurality of reel images 452, each of which may have three reel symbols 454 that are visible at a time, other reel configurations could be utilized.

[0092] The display 450 may correspond to a five-reel slot machine having three stop positions per reel such that 15 symbols are displayed as shown in FIG. 9. As shown in FIG. 10, the simulated reels 470 of the slot machine includes nine paylines that may be used to map outcomes of the instant win game to the simulated slot game, and the manner in which the simulated slot game is displayed may be based on selections made using buttons 460. FIG. 11 illustrates each of the individual paylines 511-519 on which winning combinations of symbols 454 may appear for the purpose of clarity. In the actual slot game, each of the paylines 511-519 on which a player wagers is evaluated to determine whether the symbols on the reels match any of the predefined combination of reel symbols for which a prize is awarded when the reels are spun and stop. More than one payline may include a winning combination of reel symbols, and the award amounts for multiple paylines may be added to determine a total award amount for the reel spin.

[0093] To allow the player to control the play of the Bingo game, the display 450 may include a plurality of player-selectable buttons that may map wagering selections for a slot machine to wagers by the players on the Bingo game. The buttons may include a “Cash Out” button 456, a “See Pays” button 458, a plurality of payline-selection buttons 460 each of which allows the player to select a different number of paylines prior to “spinning” the reels, a plurality of bet-selection buttons 462 each of which allows a player to specify a wager amount for each payline selected, a “Spin” button 464, and a “Max Bet” button 466 to allow a player to make the maximum wager allowable.

[0094] If the player requests payout information, such as by activating the “See Pays” button 458, the gaming unit 20 may cause one or more paytables to be displayed on the display unit 68 or the display unit 70. The payable may correspond to a five reel slot machine having three stop positions per reel such that 15 symbols are displayed as shown in FIG. 9. When the reels are spun and stop, each of the paylines on which the player wagers is evaluated to determine whether the symbols on the reels match any of the predefined combination of reel symbols for which a prize is awarded. More than one payline may include a winning combination of reel symbols, and the award amounts for multiple paylines may be added to determine a total award amount for the reel spin.

[0095] Each award amount in the slot machine payable may correspond to one or more combinations of reel stop positions that when hit by the slot machine result in the payout of the associated award amount. The mapping of the interim patterns to the slot machine payable may further include mapping the interim patterns to the combination or combinations of reel stop positions corresponding to the award amount. For each interim pattern and corresponding award amount, the gaming unit 20 may store the available combination or combinations of reel stop positions to be displayed at the alternate outcome display to represent the outcome of the Bingo game. When a given interim pattern is matched on the Bingo card, the gaming unit 20 may randomly or sequentially select one of the available combinations of reel stop positions corresponding to the award amount, and cause the alternate outcome display to display the slot reels in the appropriate positions to display a slot machine outcome that if determined by a slot machine engine would result in the payout of the award amount.

[0096] During the execution of the multi-player Bingo game routine 200 of FIGS. 5A and 5B, or other routines for conducting the Bingo game, the gaming unit 20 may control the alternate outcome display to achieve a realistic simulation of the casino game used to display the outcome of the Bingo game. At blocks 204 and 206, once two or more players enroll in the occurrence of the Bingo game, thereby ensuring that the Bingo game may be played, the gaming unit 20 may cause the display device 70 to display an animated graphic or other display simulating the initiation of the casino game. For example, if a slot machine is being simulated, the gaming unit 20 may cause the display device 70 to start the electromechanical spinning as if a player had hit a “Spin” button or pulled the arm of a slot machine. For video card games, the display device 70 may display a graphic of a deck of cards being shuffled or of hands being dealt face down by a dealer. Still further, for video Keno games, the display device 70 may display a graphic of a blowball-type ball draw mechanism tumbling the Keno balls.

[0097] The animated display may continue until the outcome of the ball draw is displayed to the player, and the player is prompted to daub in order to complete the Bingo
game. At block 222, the gaming units 20 may be configured to display prompts 344, 346 to the player instructing the player to dab in order to complete the Bingo game. The dab prompts 344, 346 may be displayed until the player marks the numbers on the Bingo card after the ball draw by touching the “Dab” button 318, 330 or other appropriate input device. The animated display may continue until the Bingo game winner or winners are determined and the Bingo cards are evaluated for interim patterns and corresponding award amounts. After the awards are determined at block 230, in addition to displaying the Bingo game outcome and award graphics at the display device 68 at block 232, the gaming device 20 may also display and display at the display device 70 an alternate outcome display corresponding to the Bingo game outcome. Using the outcome of the Bingo game and corresponding award amount, the gaming unit 20 may select one of the available alternate outcome displays for the outcome and award amount, and cause the display device 70 to display the selected outcome display. For a slot machine, the gaming unit 20 may cause the display device 70 to stop the reels at the corresponding combination of reel stop positions. Similarly, for video card games, the display device 70 may display player and/or dealer hands that would result in the payout of the award amount by the corresponding video card game.

[0098] While a single level of Bingo patterns may be appropriate to map a payable for a casino game having a relative small number of award amounts, the multi-level pattern mapping strategy discussed above may be necessary to configure the Bingo game dynamics to correspond to a casino game desired to be used as an alternate outcome display having a large number of available award amounts. In one example of a slot machine having five reels with three symbols per reel being displayed, and players being able to wager on up to nine paylines, the payoff may contain hundreds of available award amounts. A further explanation of mapping for an alternate outcome display is disclosed in U.S. patent application Ser. No. 10/887,111, referred to above and expressly incorporated by reference herein.

[0099] While the embodiment of an alternate outcome display illustrated and discussed herein may simulate the appearance of a slot machine, those skilled in the art will understand that other casino games may be simulated in an alternate outcome display, with the award amounts for the casino game’s payable being mapped to single or multiple levels of Bingo patterns. For example, the alternate outcome display may simulate the appearance of a video poker machine. The award amounts for the video poker machines may correspond to one or more poker hands. When particular Bingo patterns are matched by a player in an occurrence of the Bingo game resulting in the payout of an award amount, the gaming unit 20 may select an available poker hand corresponding to the award amount for display at the display device 70. Other casino games may be similarly mapped and simulated by the alternate outcome display in a similar manner. Moreover, the gaming units 20 may be programmed with a plurality of alternate outcome displays corresponding to a plurality of casino games, with the player being provided with the opportunity to select a desired one of the available alternate outcome displays.

Integrated Finite Pool Instant Win Game

[0100] The multi-player Bingo game may be supplemented with an additional pull-tab game or other finite pool instant win game that may be played by a player concurrently with an occurrence of the Bingo game. In general, the finite pool instant win game may be administered in the Bingo gaming system 10 in any known manner wherein a finite pool of outcomes for a wagering game is generated, and the outcomes in the finite pool are made available to players at a plurality of gaming units in a gaming network. One example of a gaming network wherein outcomes for a finite pool wagering game are distributed to gaming units of the gaming network is disclosed in U.S. Pat. No. 5,324,055, issued on Jun. 28, 1994 to Morris et al., entitled “Video Gaming System with Fixed Pool of Winning Plays and Global Pool Access,” which is expressly incorporated by reference herein. Morris et al. discloses a gaming system including a central game processor, a plurality of master processing units and a plurality of slave terminals operable by players to play the game having a finite pool of outcomes. The central game processor communicates with the master processing units and supplies the various games available in the system, including fixed pools of outcomes. The master processing units store and administer the wagering games as they are played on the slave terminals corresponding to each respective master processing unit. Some of the wagering games include fixed pools of game outcomes and a predetermined number of winning outcomes within each pool. A player, through a slave terminal, can purchase plays in each fixed pool stored in the master processing unit to which that terminal is coupled. When a particular pool is exhausted, for example, through the purchase of all plays, the central game processor provides another fixed pool of plays to that master processing unit to enable continuous play. Other methods for distributing outcomes for the instant win games are known and will be apparent to those skilled in the art, and are contemplated as having use with the electronic instant win game in accordance with the present invention. As discussed further below, it may be desirable to provide a player with a chance at winning the instant win game when the player makes a qualifying wager on the occurrence of the Bingo game, or when the player elects to purchase a chance for the instant win game.

[0101] FIG. 12 is a flowchart of a player enrollment routine 600 for a multi-player Bingo game and an accompanying finite pool instant win game wherein a wager or fee for a chance for the instant win game may be automatically deducted from a player’s wager on the occurrence of the Bingo game when the player wagers at least a minimum wager amount on the occurrence of the Bingo game. The player enrollment routine 600 may begin at a block 602 wherein a player may deposit a medium of currency in a currency-accepting mechanism of one of the gaming units 20, such as the coin acceptor 52, bill acceptor 54, ticket reader 56, card reader 58 or other mechanism for receiving currency or other media having or representing value that may be converted into credits for playing a wagering game such as the multi-player Bingo game. When the currency-accepting mechanism detects the deposit of the medium of currency therein, the controller 100 may, in response to the detection of the medium of currency at the currency-accepting mechanism, convert the medium of currency into a corresponding amount of credits available for the player to wager on the gaming unit 20, store the amount of available credit at the memory 102, and display the amount of available credit to the player, such as at one or both of the displays 68, 70. It should be noted that if the player...
previously deposited currency in the gaming unit 20 and has credits remaining after wagering on one or more occurrences of the multi-player Bingo game, the player enrollment routine 600 may proceed without the need for the player to deposit additional currency at block 602.

[0102] Once currency is deposited by the player in the gaming unit 20 and converted into credits for playing the multi-player Bingo game, control may pass to a block 604 wherein the player may input a wager for the occurrence of the Bingo game at the control panel 66 or other input device of the gaming unit 20. The player may be given the opportunity to wager varying amounts of credits on an occurrence of the Bingo game. For example, the player may be permitted to wager any amount of credits from a minimum of one credit to a predetermined maximum number of credits. As discussed above, the amount of credits wagered on an occurrence of the Bingo game may correspondingly impact the player’s probability of winning and/or the amount of any prize awarded to the player during the Bingo game. Consequently, a player wagering twice the number of credits as another player is twice as likely to win the Bingo, and/or may receive double the prize amount for winning the occurrence of the Bingo game. Moreover, depending on the implementation of the Bingo game and an associated alternative outcome display to which the Bingo game may be mapped, the interim patterns available for the player to match in order to win interim pattern awards may vary based on the amount wagered on the occurrence of the Bingo game.

[0103] Those skilled in the art will understand that both the maximum number of credits that may be wagered on an occurrence of a Bingo game and the value of a credit may be varied as desired to implement a desired betting amount and payout for a given implementation of the Bingo game. In the above example, the value of a credit may be equal to $0.01 resulting in a minimum wager of $0.01 and a maximum wager (45 credits) of $4.05 or, if a higher limit game is desired, the value of a credit may be equal to $0.50 resulting in a minimum wager of $0.50 and a maximum wager of $22.50 for an occurrence of the Bingo game. In alternative implementations of the Bingo game, the value of a credit may be varied to any desired amount and the maximum number of credits that may be wagered may be varied to achieve any desired betting and payout structure.

[0104] The player may be provided with the opportunity to change the wager for the occurrence of the Bingo game up until the time that the player confirms entry into the next occurrence of the Bingo game. After the player inputs the desired wager amount, the player may confirm entry in the next occurrence of the Bingo game by pressing the “Play/ Daub” button 82 or otherwise confirming entry at block 606. Once the player confirms entry in the game, the player’s wager on the next occurrence of the Bingo game may not be altered by the player. After the “Play/Daub” button 82 is pressed, control may pass to block 608 wherein the amount of credits wagered by the player may be deducted from the amount of available credits for the player stored at memory 102 of the gaming unit 20. The controller 100 may update the amount of available credits in memory 102, and may cause the displays 68, 70 to update the display of the player’s credits to reflect the updated amount of available credit. Additionally, the controller 100 may transmit a message reflecting the player’s wager to network computer 22 or other host computer of the Bingo gaming system 10 responsible for tracking wagering on the Bingo game and for maintaining any winner prize pool associated with the Bingo game.

[0105] As previously discussed, in the embodiment illustrated in the routine of FIG. 12, the player may receive a chance for the instant win game when the player wagers at least a minimum wager amount on an occurrence of the Bingo game. The minimum wager amount may be any predetermined amount of credits required to be wagered in order to qualify to play the instant win game, and may be the maximum bet allowed for the Bingo game at the gaming unit 20. Moreover, the Bingo game system 10 may be configured such that the minimum wager amount may be changed either automatically or manually to any desired amount, and may be applied uniformly at all gaming units 20 or may be set to desired amounts at individual gaming units 20 or groups of gaming units 20. At block 610, if the player wagers less than the minimum wager amount for entry in the instant win game, control may pass to a block 612 wherein the game unit 20 may transmit an enrollment message to the host computer 22 indicating that the player has enrolled in the next occurrence of the Bingo game.

[0106] If the player wagers at least the minimum wager amount for entry in the progressive jackpot, control may pass to a block 614 wherein an instant win game wager or fee may be diverted from the credits deducted for the player’s wager in order to fund the instant win game. Depending on the implementation, the instant win game wager or fee may be a fixed amount, or may be a predetermined portion or percentage of the player’s wager on the occurrence of the Bingo game. Whether a fixed amount or a portion or percentage of the wager on the Bingo game, the wager or fee for the progressive jackpot may be any desired amount. Moreover, in an embodiment discussed more fully below, the instant win game may be configured to provide a progressive jackpot award, and the wager or fee may be set at an amount to allow the progressive jackpot pool to increase at an acceptable rate while being low enough to motivate the players to make a large enough wager for the chance at winning a larger progressive jackpot.

[0107] In addition to deducting the instant win game wager or fee from the Bingo wager, control may pass to a block 616 wherein the gaming unit 20 may transmit a message to the network computer 22 and/or another computer at which the instant win game is maintained and administered, to enroll the player in an occurrence of the Bingo game and to obtain an outcome for the instant win game for the player. Once the player is enrolled in the occurrence of the Bingo game, the execution of the occurrence of the Bingo game may proceed as implemented, such as by the routine 200 as previously described, by one of the routines described in U.S. patent application Ser. No. 10/887,111 referred to previously, or by any other routine for conducting a multi-player Bingo game.

[0108] The occurrences of the Bingo game and the instant win game may proceed concurrently. Control may pass to a block 618 wherein an outcome of the instant win game may be selected from a pool or pools of available outcomes for the instant win game. The outcome may be selected from the pool randomly, sequentially or by any other desired method for selecting one or more outcomes from the pool. The
instant win game may have a finite pool of known outcomes including a predetermined combination of winning and non-winning outcomes that will yield a desired income and payout rate for the instant win game. The pool of outcomes for the instant win game may reside at any desired location or locations within the gaming system 10, such as at the gaming units 20 individually, at the network computers 22 or at other devices administering the instant win game and, if the pool is located remotely from the gaming units 20, the selected outcomes may be transmitted to the gaming unit 20 at which the player is playing the Bingo game. 

[0109] The information in the outcome records may be in any form necessary based on the configuration of the instant win game for storing the outcome and generating the outcome at the gaming unit 20. For example, the information may correspond to the actual outcome of the instant win game, such as specifically indicating the game symbols or other game indicia for the outcome. Alternatively, the outcome information may be in the form of an outcome seed or other information as is known in the art that may be processed by the gaming unit 20 to arrive at the outcome of the instant win game. In one embodiment, the outcome information may be a random number seed that may be used as input to corresponding random number generation software at the gaming unit 20 that uses the random number outcome to generate the outcome for the instant win game. An example of a gaming network implementing random number seeds to generate outcomes at gaming terminal is disclosed in U.S. Pat. No. 6,533,664, issued on Mar. 18, 2003 to Crumby, entitled “Gaming System with Individualized Centrally Generated Random Number Generator Seeds,” the specification of which is expressly incorporated by reference herein. Other forms of outcome information for transmitting the outcome and performing processing to generate the outcome are known in the art and are contemplated as having use with the instant win game in accordance with the present invention. 

[0110] After the outcomes are selected and, if necessary, transmitted to the gaming unit 20, control may pass to a block 620 wherein the outcome record may be processed by the gaming unit 20 and evaluated to determine whether the outcome is a winning or losing outcome. The format of the outcome records may dictate the amount of processing required to convert the information from the outcome records into the corresponding outcomes for the instant win game. Where information corresponding to the symbols for the instant win game is stored in the outcome record, the gaming unit 20 may only be required to look up the symbols and compare the combination of symbols to predetermined winning combinations of symbols to determine whether the outcome is a winning outcome. In implementations where the outcome record contains a seed such as a random number generator seed as discussed above, the controller 100 of the gaming unit 200 may input the seed into the random number or other outcome generating software to generate the corresponding outcome for the instant win game. Other methods for converting an outcome record from a pool of outcome records into the actual outcome for a wagering game are known in the art and are contemplated as having use in the electronic instant win game in accordance with the present invention. 

[0111] After the instant win game outcome record is selected and processed, and as the occurrence of the Bingo game is proceeding, control may pass to a block 622 where the outcome of the instant win game is displayed to the player at the corresponding gaming unit 20. The outcome of the instant win game may be displayed at one or both of the displays 68, 70 either independently or in conjunction with the displays of the Bingo game and the alternate outcome display. Alternatively, the outcome of the instant win game may be displayed to the player in the form of a ticket or voucher dispensed by the gaming unit 20. Alternative embodiments for displaying the outcome of the instant win game are discussed more fully below. If the instant win game outcome is a winning outcome, an award amount for the winning outcome may be added to the player’s credits on the gaming unit 20 at a block 624 or otherwise dispense the award for the instant win game to the player. 

[0112] FIG. 13 is a flowchart of an alternative player enrollment routine 650 for a multi-player Bingo game wherein the player may input a wager or fee for a chance in a finite pool instant win game, such as a pull-tab game, at the time the player inputs a wager on the occurrence of the Bingo game. The player enrollment routine 650 may begin in a similar manner as routine 600 at block 602 wherein the player deposits a medium of currency in a currency-accepting mechanism at the gaming unit 20, and at block 604 wherein the player inputs a wager on an occurrence of the Bingo game. In addition to the wager on the Bingo game, the player may elect to purchase a chance for the instant win game. At block 652, if the player elects to participate in the instant win game, control may pass to a block 654 wherein the player may input a wager or fee for the instant win game. The gaming unit 20 may provide a prompt at the displays 68, 70 to participate in the instant win game, and the control panel 66 may be configured to allow the player to indicate an election to participate in the instant win game, such as by entering a wager or fee amount. Alternatively, the player may be prompted to provide an affirmative response regarding instant win game participation or otherwise indicating the player’s desire to participate in the instant win game. 

[0113] If the player does not elect to participate in the instant win game, or after the player inputs a wager or fee or otherwise elects to participate, control may pass to block 606 wherein the player may hit the “Play/Deab” button 82, and to block 608 wherein the player’s wager may be deducted from the player’s available credits as previously discussed. At a block 656, if the player input a wager or fee for the instant win game or otherwise indicated the election to purchase a chance for the instant win game, control may pass to blocks 614-524 as discussed above where the player may receive a chance for the instant win game and have the outcome displayed concurrently with the occurrence of the Bingo game. If the player does not elect to participate in the instant win game, control may pass to block 612 wherein the gaming unit 20 transmits the enrollment message to the host computer 22 as discussed above. In either routine 600 or 650, or any generating enrollment routine, the gaming unit 20 may be configured to display graphics relating to the instant win game at the displays 68, 70 when the player obtains a chance for the instant win game, and may not display the instant win game graphics when the player is not playing the instant win game. 

[0114] While the routines 600 and 650 are described as being implemented with a multi-player Bingo game as the base wagering game, those skilled in the art will understand
that other base wagering games may incorporate instant win games that are optionally played by the player during an occurrence of the base wagering game. Moreover, the instant win games having optional wagering may be implemented at gaming networks connecting multiple casino locations, including casinos located in different gaming jurisdictions. In multi-location gaming networks, instant win game wagering may be offered at some but not all of the casino locations. A casino operator may elect not to offer the instant win game in a particular location within the gaming network. Moreover, instant win games may only be offered for some gaming units within a particular casino location. In such instances, the gaming units may be configured to avoid displaying any information relating to the instant win game, such as suppressing an instant win game wagering prompt, and may not display graphics related to instant win game when the outcomes of the occurrences of the wagering game are displayed. In these implementations, the gaming units, wagering game network computers and/or the instant win game network computer may be configurable to disable the instant win game at particular gaming units, network computers, casino locations or jurisdictions.

In another implementation, the Bingo game and associated instant win game may be configured such that, in addition to diverting the final wagering increment to fund the instant win game, a portion of each wager may be diverted to fund the instant win game even if the wager does not qualify the player for a chance for the instant win game. Using the above example, in addition to diverting $1.00 from each $5.00 maximum wager, 5% of each $1.00 wagered on the Bingo game may be diverted to fund the instant win game. It should be noted that it is known in the gaming industry to divert a portion of wagers on a primary wagering game to fund a secondary wagering game, such as a progressive jackpot, even though the wager on the primary wagering game may not qualify the player to participate in the secondary game. Due to the additional diversion from the non-instant win game qualifying wagers, the players’ expected return is partially reduced since the amount of the wager used for the Bingo game is reduced to 95% of the player’s wager. For each $1.00 wagered, $0.05 is diverted to the instant win game and $0.95 is wagered on the Bingo game, giving the player a net expected payback rate of 85.5% on non-qualifying wagers ($0.95×90%=0.855), and a player wagering $4.00 on the Bingo game would expect to receive $3.42 over time as opposed to the $3.60 expectation of the preceding examples.

As with the previous example, a player making a maximum wager of $5.00 receives a chance for the instant win game, and the final $1.00 of the maximum wager is diverted to the instant win game along with the $0.20 diverted from the first $4.00 of the maximum wager ($4.00×5%=0.20), giving the player a total wager on the instant win game of $1.20. The increase in the wager on the instant win game over the amount in the preceding example increases the player’s expected payback amount to $1.176 versus $0.98 as discussed above for a 98% payback rate instant win game. Overall, the player’s expected payback on the $5.00 maximum wager on the Bingo game increases from $4.58, or 91.60%, to $4.596, or 91.92%. By increasing the portion of the player’s wager diverted to the instant win game offering the greater payback than the Bingo game, the player may be further rewarded for taking advantage of the opportunity to participate in the instant win game. Other strategies and proportions for allocating the player’s wagers on the Bingo game to fund the Bingo game and the instant win game will be apparent to those skilled in the art to achieve a desired overall payback rate for the Bingo game and instant win game, and are contemplated by the inventors as having use with the present invention.

As discussed above, at block 622 of routines 600 and 650, the results of the instant win game may be displayed to the player, such as by printing a ticket at the gaming unit 20 or displaying the outcome at one or both of the displays 68, 70. In one embodiment, the outcome of the instant win game may be displayed graphically at one or both of the displays 68, 70 in addition to the display of the Bingo game and/or game of the alternate outcome display, respectively. FIG. 14 illustrates an exemplary display 700 of an outcome of a finite pool instant win game with a graphical simulation of a pull-tab instant win game. The instant win game outcome display 700 may be displayed by the gaming unit 20 at a separate portion of the displays 68, 70 as the Bingo game displays 300, 320 or alternate outcome display 450, respectively, such as to the side of or below the Bingo game.
game display or alternate outcome display, or in a separate window that may partially overlay the other displays.

[0120] As indicated above, the instant win game display 700 may graphically simulate a pull-tab instant win game. The display 700 may include graphics of a pull-tab ticket 702 having a plurality of pull-tabs 704-708 that may be selected and opened to reveal game indicia 710 for the pull-tab game. When the instant win game is first displayed, each of the pull-tabs may be displayed as closed pull-tabs 704 overlaying and covering the corresponding pull-tab game indicia 710. The closed pull-tabs 704 may include instruction graphics 712 informing the player that a closed pull-tab 704 may be opened by selecting the closed pull-tab 704 either by touching the video display proximate the closed pull-tab 704 or by pressing a corresponding button on the control panel. When the controller 100 detects the selection of a closed pull-tab 704 by the player, the controller 100 may cause the corresponding display 68, 70 to graphically illustrate the closed pull-tab 704 being pulled open through a partially-opened pull-tab graphic 706 to an open pull-tab graphic 708, thereby simulating the pulling open of a physical pull-tab by the player. As the display 700 changes from the closed pull-tab 704 to the partially-opened pull-tab 706 and open pull-tab 708, the display 700 may uncover the corresponding game indicia 710 underlying the open pull-tab 708.

[0121] The game indicia 710 of the display 700 may be selected such that an outcome of a pull-tab game based on the combination of game indicia 710 corresponds to the instant win game outcome selected for the player at block 618 of routines 600, 650. After the instant win game outcome is evaluated at block 620, the controller 100 may map the results of the instant win game outcome to the display 700 at block 622. In one embodiment, the information in the instant win game outcome record may include the combinations of game indicia 710 to be displayed, and the controller 100 may transmit the game indicia 710 to the display 68, 70 and cause the display 68, 70 to display the game indicia 710 from the instant win game outcome record in the display 700. Alternatively, because the finite pool of instant win game may have a limited number of known winning and non-winning outcomes, the controller 100 may store a plurality of combinations of pull-tab game indicia 710 corresponding to each known outcome of the instant win game. In this embodiment, the controller 100 may select one of the stored combinations of game indicia corresponding to the instant win game outcome sequentially, randomly or by some other method, and cause the display 68, 70 to display the selected combination of game indicia 710 when the player selects the pull-tabs 704.

[0122] In a further alternative embodiment, the controller 100 may be programmed with an algorithm for determining combinations of game indicia 710 corresponding to the selected outcome of the instant win game in lieu of storing predetermined combinations of game indicia 710 either in the instant win game outcome record or at the controller 100 as discussed in the preceding embodiments. The award amount for the instant win game outcome may be input into the algorithm by the controller 200 to determine a combination of game indicia 710 corresponding to the award amount for the instant win game outcome. The algorithm may be configured to such that a plurality of combinations of game indicia 710 for the simulated pull-tab game may be determined for a particular outcome for the instant win game. The particular combinations of game indicia 710 for the pull-tab game outcome may be determined based on other information input to the algorithm, such as a counter or a random number generator like a timestamp, to ensure that the same combinations of game indicia 710 do not occur consecutively, or at least do so coincidentally.

[0123] As an alternative to providing a separate display 700 for the instant win game outcome, the instant win game outcome may be combined with the outcome for the player for the occurrence of the multi-player Bingo game and displayed at the alternate outcome display 450. In this embodiment, the single or multi-level pattern mapping of the award amounts for the Bingo game to the paytables corresponding to the wagering game of the alternate outcome display may be modified to incorporate the known winning and non-winning outcomes for the instant win game such that combinations of symbols and reel stop positions for the display 450 reflect the Bingo award amounts and the instant win game award amounts. In one implementation, the Bingo award amount and instant win game award amount may be summed to determine a total award amount for the player for the occurrence of the wagering games. For each total award amount, the gaming unit 20 may store the available combination or combinations of reel stop positions to be displayed at the alternate outcome display to represent the total award amount for the Bingo game. When a given total award amount is determined, the controller 100 may randomly or sequentially select one of the available combinations of reel stop positions corresponding to the total award amount, and cause the display device 70 to display the slot reels in the appropriate positions to display a slot machine outcome that if determined by a slot machine engine would result in the payout of the award amount. Alternatively, the total award amount may be input into an algorithm that may determine a combination of symbols and reel stop positions resulting in the total award amount.

[0124] Several example reel stop positions 750-756 corresponding to total award amounts for the Bingo game and instant win game are illustrated in FIG. 15, and may be stored at gaming units 20 for display at the alternative outcome display. As discussed above, the example slot machine may include five reels with three symbols of each reel that would be generated by a slot machine engine if the slot machine were being played. Moreover, up to nine paylines may be used to evaluate combinations of symbols. The reel stop positions 750, in which five “7”s are matched on paylines 2 and payline 3, may correspond to a 900 credit award amount for an occurrence of the Bingo game and, if also played, the instant win game. The 900 credit award amount may correspond to a match of an interim pattern on the player’s Bingo card resulting in a 900 credit award amount, and a losing outcome for the instant win game. The 900 credit award amount may correspond to no patterns being matched on the player’s Bingo card, and a 900 credit winning outcome for the instant win game, or any other combination of winning results from the Bingo and instant win games totaling 900 credits. The controller 100 of the gaming unit 20 may then select the reel stop positions 750 from the pool of slot machine outcomes, or generate the reel stop positions 750 via a selection algorithm, and cause the second display device 70 to stop the slot reels at the reel stop positions 750 to simulate the appearance of a slot machine, and to display the outcome determined in the Bingo game.
The reel stop positions 752, 754 may both correspond to a 902 credit award amount, and both may be stored at the gaming units 20 in the pool of available slot machine outcomes. The cherry may be a wild card symbol combinable with other symbols to match the predetermined combination of symbols, or may pay an award of two credits even if no combinations are matched. Consequently, the cherry in the top row may complete the five “7’s” for payline 2, and result in additional two credit awards on paylines 5 and 4, respectively, giving a total award of 902 credits. When a combination of matched patterns on the player’s Bingo card and the outcome of the instant win game results in a total award amount of 902 credits, the controller 100 of gaming unit 20 may randomly or sequentially select or otherwise generate one of the reel stop positions 752, 754 for display at the second display device 70. The reel stop positions 756 may correspond to a 906 credit total award amount, with the wild card cherry resulting in two credit awards on each of pay lines 1, 4 and 5. If none of the winning patterns are matched on the Bingo card and the instant win game outcome is a losing outcome, no credits are awarded to the player and the controller 100 may randomly or sequentially select or otherwise generate an outcome from a pool of non-winning reel stop positions for display at the second display device 70.

In other implementations, it may be desired to present a combined display 450 of the Bingo game and instant win game outcomes that allows the player to visually distinguish between the Bingo game and instant win game outcomes. In the illustrated display 450 of the slot reels, the outcomes of the Bingo game and instant win game may be delineated by reserving specific paylines on the display 450 for each game. For example, in the illustrated nine payline slot reel display, the fifth payline 515 of FIG. 11 may be designated as the payline corresponding to the outcome of the instant win game, and the remaining paylines 511-514, 516-519 may be used to present the outcome of the Bingo game.

As with the previously-discussed implementation, the gaming unit 20 may store a plurality of symbol combinations and reel stop positions corresponding to the possible combinations of outcomes of the Bingo game and instant win game, or may be programmed with an algorithm for determining the appropriate symbol combinations once the Bingo game and instant win game outcomes are determined. After determining the outcomes of the games, the controller 100 may use the Bingo game award amount and the instant win game award amount to select or determine the corresponding symbol combinations for the game of the alternate outcome display. Returning to FIG. 15 and designating the fifth payline 515 as the combination of symbols representing the outcome of the instant win game, reel stop positions 750, 754 may represent occurrence of the games in which a player may receive a Bingo game award amount for matching a pattern or patterns on the player’s Bingo card, while the instant win game is either not played by the player or results in a losing outcome. Conversely, reel stop positions 752, 756 in which a winning combination of symbols is displayed along the fifth payline 515 may correspond to winning outcomes for both the Bingo game and the instant win game.

Those skilled in the art will understand that other symbol combinations and paylines may be used to distinguish between the Bingo game award and the instant win game award, and are contemplated as having use in a wagering game in accordance with the present invention. For example, where a player may be required to place a maximum wager or at least a minimum wager to participate in the instant win game, the instant win game outcome may be represented by the highest number payline in the display 450, such as the ninth payline 519 of FIG. 11. As a further alternative, in lieu of designating a specific payline or paylines for the outcome of the instant win game, the various winning outcomes of the instant win game may have corresponding unique combinations of reel symbols that may be displayed when the winning outcomes are selected for the players. The reel symbol combinations for the winning outcomes may be displayed to the player when the player selects one of the “See Pays” buttons 72, 314, 334, 458 so that the player may recognize the reel symbol combinations as instant win game winning outcomes when the combinations of symbols appear on the reels of the alternate outcome display.

When the instant win game is offered in conjunction with the multi-player Bingo game, the instant win game may be configured to provide a progressive jackpot for the players participating in the instant win game. In one embodiment, a portion of the player’s wager diverted to the instant win game may be added to the progressive jackpot pool for the instant win game to fund the progressive jackpot such that the progressive jackpot pool increases as players purchase instant win game outcomes while participating in the Bingo game. The finite pool of instant win game outcomes may include a predetermined number of progressive jackpot-winning outcomes that may result in a player receiving all or a portion of the progressive jackpot pool when the outcome is selected for the player. The instant win game may further be configured to ensure that each progressive jackpot-winning player receives at least a minimum progressive jackpot award, and that the entire progressive jackpot pool is awarded to the players to maintain a desired payout rate for the instant win game, such as by rolling any remaining funds in the progressive jackpot pool to subsequent finite pools of instant win game outcomes when the last progressive jackpot-winning outcome is purchased, or by paying out the amount in the progressive jackpot pool plus any funds to be added to the pool from the remaining instant win game outcomes in the finite pool when the last progressive jackpot-winning outcome is selected for a player.

In a further embodiment, the instant win game may be configured as a progressive jackpot having a fixed number of progressive jackpot-winning outcomes and a minimum progressive jackpot award. If the final progressive jackpot-winning outcome is selected while other outcomes remain, the player may receive a progressive jackpot award equal to the current amount in the progressive jackpot plus the additional progressive jackpot funds to be generated by the remaining non-progressive jackpot-winning outcomes in the finite pool. In order to ensure that each player purchasing an instant win game outcome has a chance to win the progressive jackpot award, multiple finite pools of instant win game outcomes may be used by the gaming system 10 so that at least one pool contains a progressive jackpot-winning outcome, and the gaming system 10 may be configured to first choose the finite pool from which to select an outcome, and then to select an outcome from within the selected finite pool using any desired method. One example of a gaming device including one or more pools for provid-
ing outcomes to players is disclosed in U.S. Patent Publication No. 2004/0063489, entitled "Gaming Device Including Outcome Pools for Providing Game Outcomes" which is expressly incorporated by reference herein.

[0131] In the present example, a finite pool may consist of 10,000 instant win game outcomes, three of which may be progressive jackpot-winning outcomes for which a player may win at least a minimum progressive jackpot award of $1,000, thereby giving the player a 1-in-3,333.3 chance of winning a progressive jackpot award. When a player makes a maximum wager of $5.00 on the Bingo game, $1.00 may be diverted to the instant win game. Further, the instant win game may have a 50% payback rate for the progressive jackpot such that $0.50 of each wager is used to fund the progressive jackpot ($5,000 for the 10,000 instant win game outcomes in a finite pool), with the remaining $0.50 going to the progressive jackpot sponsor ($5,000 profit per finite pool). With three progressive jackpot awards each requiring a minimum payout of $1,000, $3,000 of the $5,000 diverted to the progressive pool may directly fund the minimum progressive jackpot awards, with the remaining $2,000 being used to increase the progressive jackpot pool as players purchase instant win game outcomes. As a result, $0.30 of the $0.50 diverted to the instant win game ($5,000/10,000 outcomes) may be used to fund the minimum progressive jackpot awards, while the remaining $0.20 may be added to the progressive jackpot pool to increase the progressive jackpot award that may be won by a player with every wager made on the instant win game.

[0132] Configured in the manner described, the amount of the progressive jackpot award won by a player is dependent on the number of instant win game outcomes purchased since the gaming system 10 began selecting outcomes from the finite pool, or since the previous progressive jackpot-winning outcome was selected from the finite pool, and whether the progressive jackpot-winning outcome is the last progressive jackpot-winning outcome remaining in the finite pool. In one extreme scenario, the progressive jackpot-winning outcomes may be the first three outcomes selected from the finite pool. For the first selected outcome, the progressive jackpot award for the player is the $1,000 minimum progressive jackpot award amount plus the $0.20 diverted to the progressive jackpot pool for the single instant win game outcome that has been selected, for a total award of $1,000.20. Similarly, for the second selected outcome, the progressive jackpot award for the player is the $1,000 minimum progressive jackpot award amount plus the $0.20 diverted to the progressive jackpot pool for the single instant win game outcome that has been selected since the previous progressive jackpot-winning outcome was selected, for a total award of $1,000.20. For the third selected outcome and the final progressive jackpot-winning outcome in the finite pool, the player may receive the remaining funds to be diverted to the progressive jackpot in order to guarantee the 50% payout rate for the progressive jackpot. Consequently, the player’s award for receiving the third progressive jackpot-winning outcome on the third outcome selected from the finite pool is equal to the $5,000 expected payout minus the $2,000.40 already paid out for the first two progressive jackpot-winning outcomes, or $2,999.60. In this scenario, the sponsor of the progressive jackpot may be required to advance the money for the award amounts for the short term until the remaining instant win game outcomes in the finite pool are purchased and the funds are diverted from the wager accordingly. In one embodiment, once all three progressive jackpot-winning outcomes are selected from the finite pool, another finite pool may be introduced such that progressive jackpot-winning outcomes are available to the players as discussed above.

[0133] In another extreme scenario, the progressive jackpot-winning outcomes may be the final three outcomes selected from the finite pool. When the first progressive jackpot-winning outcome is selected as the 9,998$^{th}$ outcome selected, the player may receive a progressive jackpot award equal to the $1,000 minimum award amount plus the accumulated amount in the progressive jackpot pool of $1,999.60 ($0.20 per outcome x 9,998 outcomes) for a total award of $2,999.60, equal to that of the award for the third progressive jackpot-winning entry selected in the preceding scenario. For the second selected progressive jackpot-winning outcome, the progressive jackpot award for the player is the $1,000 minimum progressive jackpot award amount plus the $0.20 diverted to the progressive jackpot pool for the single instant win game outcome that has been selected since the previous progressive jackpot-winning outcome was selected, for a total award of $1,000.20. For the final selected outcome and the final progressive jackpot-winning outcome in the finite pool, the player may receive the remaining $1,000 minimum progressive jackpot award amount plus the $0.20 diverted to the progressive jackpot pool for the final instant win game outcome from the finite pool, for a total award of the remaining $1,000.20 to be paid out from the progressive jackpot pool for the finite pool. It should be noted in this scenario that the progressive jackpot sponsor may not be required to advance any funds to cover the progressive jackpot awards since the cost of paying out the progressive jackpot awards was raised after the first 5,000 instant win game outcomes were selected from the finite pool.

[0134] In a more common scenario, the selection of the progressive jackpot-winning outcomes may be spread out over the selection of the 10,000 outcomes in the finite pool of outcomes. For purposes of example, the progressive jackpot-winning outcomes may be the $500$^{th}, 5,000$^{th}$ and 7,500$^{th}$ outcomes selected from the finite pool of outcomes. When the first progressive jackpot-winning outcome is selected as the 500$^{th}$ outcome selected from the finite pool of outcomes, the player may be awarded the $1,000 minimum progressive jackpot award amount plus the $0.20 contribution to the progressive jackpot pool for each of the first 500 selected outcomes for a total award amount of $1,100. When the second progressive jackpot-winning outcome is selected as the 5,000$^{th}$ outcome selected from the finite pool of outcomes, the player may be awarded the $1,000 minimum progressive jackpot award amount plus the $0.20 contribution to the progressive jackpot pool for each of the first 4,500 outcomes selected since the first progressive jackpot-winning outcome was selected as the 500$^{th}$ selected outcome for a total award amount of $1,900. When the third and final progressive jackpot-winning outcome is selected as the 7,500$^{th}$ outcome selected from the finite pool of outcomes, the player may receive the minimum progressive jackpot award plus the contributions to the progressive jackpot pool for the 2,500 outcomes selected since the second progressive jackpot-winning outcome was selected plus the future contributions to be made to the progressive jackpot pool for the remaining 2,500 outcomes to be selected from the finite pool to ensure the 50% payout rate for the instant win game.
Consequently, the player receiving the third progressive jackpot-winning outcome may receive a total award amount of $2,000 for the instant win game.

[0135] Those skilled in the art will understand that the instant win game accompanying the Bingo game may be implemented with other configurations to provide a progressive jackpot for the Bingo game players. As discussed above, the instant win game may be implemented with multiple finite pools simultaneously available for selection of outcomes to ensure that at least one progressive jackpot-winning outcome is available each time a player wagers on an occurrence of the Bingo game. Further, each finite pool of outcomes may include more or fewer than the three progressive jackpot-winning outcomes from the examples discussed above. The finite pools of outcomes may include other winning outcomes for the instant win game that result in the player receiving a fixed award amount or an award amount that is a smaller percentage of the progressive jackpot pool. Other variations in the configuration of the instant win game to provide a progressive jackpot, such as variations in the percentage of the instant win game diverted to the progressive jackpot pool, the minimum progressive jackpot award amount, the payback rate for the instant win game, and the like, are contemplated by the applicants as having use in the Bingo game and instant win game in accordance with the present invention.

[0136] While the preceding text sets forth a detailed description of numerous different embodiments of the invention, it should be understood that the legal scope of the invention is defined by the words of the claims set forth at the end of this patent. The detailed description is to be construed as exemplary only and does not describe every possible embodiment of the invention since describing every possible embodiment would be impractical, if not impossible; Numerous alternative embodiments could be implemented, using either current technology or technology developed after the filing date of this patent, which would still fall within the scope of the claims defining the invention.

What is claimed is:

1. A method for conducting a multi-player wagering game and an associated instant win game having a finite pool of outcomes, wherein each player has a unique game array of game indicia for an occurrence of the multi-player wagering game and individual game indicia are sequentially selected from the range of game indicia, and wherein one of the players wins the occurrence of the multi-player wagering game by matching a predetermined game winning pattern of game indicia on the player’s unique game array with the sequentially selected game indicia, comprising:

receiving a deposit of an amount of a medium of currency by a player at a gaming unit;

receiving input for a player’s wager on an occurrence of the multi-player wagering game at an input device of the gaming unit;

subtracting the amount of the player’s wager on the occurrence of the multi-player wagering game from the player’s available credit at the gaming unit in response to receiving the input for the player’s wager, wherein the player’s available credit corresponds to the amount of the medium of currency deposited at the gaming unit;

subtracting an instant win game wager amount from one of the player’s available credit and the credits subtracted from the player’s available credit;

determining an outcome for the player for the occurrence of the multi-player wagering game; and

selecting an outcome for the instant win game from the finite pool of outcomes.

2. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 1, wherein the instant win game wager amount is equal to a predetermined fixed wager amount.

3. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 1, wherein the instant win game wager amount is equal to a predetermined percentage of the player’s wager for the occurrence of the multi-player wagering game.

4. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 1, comprising:

comparing the amount of the player’s wager on the occurrence of the multi-player wagering game to a minimum wager amount; and

subtracting the instant win game wager amount and selecting the outcome for the instant win game if the player’s wager is greater than or equal to a minimum wager amount.

5. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 4, wherein the minimum wager amount is equal to the maximum wager that the player may make for an occurrence of the multi-player wagering game.

6. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 1, comprising:

receiving input for a player’s instant win game wager for the occurrence of the wagering game at the input device of the gaming unit;

subtracting the amount of the player’s instant win game wager from the player’s available credit at the gaming unit in response to receiving the input for the player’s instant win game wager; and

selecting the outcome for the instant win game in response to receiving the input for the player’s instant win game wager.

7. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 1, wherein the multi-player wagering game pays out awards at a first payout rate and the instant win game pays out awards at a second payout rate that is greater than the first payout rate, wherein the net payout rate to players is greater than the first payout rate.

8. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 1, comprising:

displaying the outcome for the player for the occurrence of the multi-player wagering game at the gaming unit; and
displaying the outcome for the player for the instant win game at the gaming unit.

9. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 8, comprising displaying the outcome of the multi-player wagering game as an outcome of a second wagering game at the gaming unit, wherein the displayed outcome of the second wagering game corresponds to the outcome of the multi-player wagering game.

10. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 8, comprising displaying the outcome of the multi-player wagering game and the outcome of the instant win game as an outcome of a second wagering game at the gaming unit, wherein the displayed outcome of the second wagering game corresponds to the outcomes of the multi-player wagering game and the instant win game.

11. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 10, wherein the outcome of the multi-player wagering game is displayed in a first portion of the displayed outcome of the second wagering game and the outcome of the instant win game is displayed in a second portion of the outcome of the second wagering game.

12. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 1, comprising:

- adding at least a portion of the instant win game wager amount to a progressive jackpot pool; and
- awarding at least a portion of the progressive jackpot pool to the player if the selected outcome for the instant win game is a progressive jackpot-winning outcome.

13. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 12, comprising awarding to the player an amount equal to the portion of the instant win game wagers added to the progressive jackpot pool multiplied by the number of instant win game outcomes remaining in the finite pool of outcomes if the progressive jackpot-winning outcome is the last available progressive jackpot-winning outcome in the finite pool of outcomes.

14. A method for conducting a multi-player wagering game and an associated instant win game having a finite pool of outcomes, wherein each player has a unique game array of indicia each for the occurrence of the multi-player wagering game and individual game indicia are sequentially selected from the range of game indicia, and wherein one of the players wins the occurrence of the multi-player wagering game by matching a predetermined game winning pattern of game indicia on the player’s unique game array with the sequentially selected game indicia comprising:

- providing a currency-accepting mechanism at a gaming unit for receiving a deposit of an amount of a medium of currency by a player at the gaming unit;
- providing an input device for receiving input for a player’s wager on an occurrence of the multi-player wagering game at the gaming unit;
- configuring the gaming unit to subtract the amount of the player’s wager on the occurrence of the multi-player wagering game from the player’s available credit at the gaming unit in response to receiving the input for the player’s wager at the input device, wherein the player’s available credit corresponds to the amount of the medium of currency deposited at the gaming unit;
- configuring the gaming unit to subtract an instant win game wager amount from one of the player’s available credit and the credits subtracted from the player’s available credit;
- configuring the gaming unit to determine an outcome for the player for the occurrence of the multi-player wagering game; and
- configuring the gaming unit to cause the selection of an outcome for the instant win game from the finite pool of outcomes.

15. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 14, wherein the instant win game wager amount is equal to a predetermined fixed wager amount.

16. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 14, wherein the instant win game wager amount is equal to a predetermined percentage of the player’s wager for the occurrence of the multi-player wagering game.

17. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 14, comprising:

- configuring the gaming unit to compare the amount of the player’s wager on the occurrence of the multi-player wagering game to a minimum wager amount; and
- configuring the gaming unit to subtract the instant win game wager amount and to cause the selection of the outcome for the instant win game in response to the player’s wager being greater than or equal to a minimum wager amount.

18. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 17, wherein the minimum wager amount is equal to the maximum wager that the player may make for an occurrence of the multi-player wagering game.

19. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 14, comprising:

- configuring the gaming unit to receive input for a player’s instant win game wager for the occurrence of the wagering game at the input device of the gaming unit;
- configuring the gaming unit to subtract the amount of the player’s instant win game wager from the player’s available credit at the gaming unit in response to receiving the input for the player’s instant win game wager; and
- configuring the gaming unit to cause the selection of the outcome for the instant win game in response to receiving the input for the player’s instant win game wager.

20. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 14, wherein the multi-player wagering game pays out awards at a first payout rate and the instant win game pays out awards at a second payout rate that is greater than the first payout rate, wherein the net payout rate to players is greater than the first payout rate.
21. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 14, comprising:

providing a display device at the gaming unit;
configuring the gaming unit to cause the display device to display the outcome for the player for the occurrence of the multi-player wagering game; and
configuring the gaming unit to cause the display device to display the outcome for the player for the instant win game.

22. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 14, comprising:

providing a display device at the gaming unit;
configuring the gaming unit to cause the display device to display the outcome of the multi-player wagering game as an outcome of a second wagering game at the gaming unit, wherein the displayed outcome of the second wagering game corresponds to the outcome of the multi-player wagering game.

23. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 14, comprising:

providing a display device at the gaming unit;
configuring the gaming unit to cause the display device to display the outcome of the multi-player wagering game and the outcome of the instant win game as an outcome of a second wagering game at the gaming unit, wherein the displayed outcome of the second wagering game corresponds to the outcomes of the multi-player wagering game and the instant win game.

24. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 23, wherein the outcome of the multi-player wagering game is displayed in a first portion of the displayed outcome of the second wagering game and the outcome of the instant win game is displayed in a second portion of the outcome of the second wagering game.

25. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 14, comprising:

configuring the gaming unit to cause at least a portion of the instant win game wager amount to be added to a progressive jackpot pool; and
configuring the gaming unit to cause at least a portion of the progressive jackpot pool to be awarded to the player in response to determining that the selected outcome for the instant win game is a progressive jackpot-winning outcome.

26. A method for conducting a multi-player wagering game and an associated instant win game in accordance with claim 25, comprising configuring the gaming unit to cause the player to be awarded an amount equal to the portion of the instant win game wagers added to the progressive jackpot pool multiplied by the number of instant win game outcomes remaining in the finite pool of outcomes if the progressive jackpot-winning outcome is the last available progressive jackpot-winning outcome in the finite pool of outcomes.

27. A gaming unit for conducting a multi-player wagering game and an associated instant win game in a gaming network having a network computer and a plurality of gaming units, wherein each player has a unique game array of game indicia for the occurrence of the multi-player wagering game and individual game indicia are sequentially selected from a range of available game indicia by one of the network computer and a wagering game server of the gaming network, and wherein one of the players wins the occurrence of the multi-player wagering game by matching a predetermined game winning pattern of game indicia on the player's unique game array with the sequentially selected game indicia comprising:

an input device for inputting a plurality of input selections;
a gaming unit memory device;
a currency-accepting mechanism that is capable of allowing a player to deposit a medium of currency;
an output device;
a value-dispensing mechanism that is capable of dispensing value to the player;
a gaming unit controller operatively coupled to the input device, the gaming unit memory device, the currency-accepting mechanism, the output device, and the value-dispensing mechanism,
the gaming unit controller being programmed to allow the currency-accepting mechanism to accept a deposit of an amount of a medium of currency by a player at the gaming unit,
the gaming unit controller being programmed to allow the input device to receive input for a player's wager on an occurrence of the multi-player wagering game at the input device,
the gaming unit controller being programmed to subtract the amount of the player's wager on the occurrence of the multi-player wagering game from the player's available credit at the gaming unit in response to receiving the input for the player's wager, wherein the player's available credit corresponds to the amount of the medium of currency deposited at the gaming unit,
the gaming unit controller being programmed to subtract an instant win game wager amount from one of the player's available credit and the credits subtracted from the player's available credit,
the gaming unit controller being programmed to determine an outcome for the player for the occurrence of the multi-player wagering game, and
the gaming unit controller being programmed to cause a device of the gaming network to select an outcome for the instant win game from the finite pool of outcomes.

28. A gaming unit for conducting a multi-player wagering game and associated instant win game in accordance with claim 27, wherein the instant win game wager amount is equal to a predetermined fixed wager amount.

29. A gaming unit for conducting a multi-player wagering game and associated instant win game in accordance with
claim 27, wherein the instant win game wager amount is equal to a predetermined percentage of the player's wager amount for the occurrence of the multi-player wagering game.

30. A gaming unit for conducting a multi-player wagering game and an associated instant win game in accordance with claim 27, wherein:

the gaming unit controller is programmed to compare the amount of the player's wager on the occurrence of the multi-player wagering game to a minimum wager amount; and

the gaming unit controller is programmed to subtract the instant win game wager amount and to cause the selection of the outcome for the instant win game in response to determining that the player's wager is greater than or equal to a minimum wager amount.

31. A gaming unit for conducting a multi-player wagering game and an associated instant win game in accordance with claim 30, wherein the minimum wager amount is equal to the maximum wager that the player may make for an occurrence of the multi-player wagering game.

32. A gaming unit for conducting a multi-player wagering game and an associated instant win game in accordance with claim 27, wherein:

the gaming unit controller is programmed to allow the input device to receive input for a player's instant win game wager for the occurrence of the multi-player wagering game;

the gaming unit controller is programmed to subtract the amount of the player's instant win game wager from the player's available credit in response to receiving the input for the player's instant win game wager at the input device; and

the gaming unit controller is programmed to cause the selection of the outcome for the instant win game in response to receiving the input for the player's instant win game wager at the input device.

33. A gaming unit for conducting a multi-player wagering game and an associated instant win game in accordance with claim 27, wherein the multi-player wagering game pays out awards at a first payout rate and the instant win game pays out awards at a second payout rate that is greater than the first payout rate, wherein the net payout rate to players is greater than the first payout rate.

34. A gaming unit for conducting a multi-player wagering game and an associated instant win game in accordance with claim 27, wherein:

the gaming unit controller is programmed to cause the output device to display the outcome for the player for the occurrence of the multi-player wagering game; and

the gaming unit controller is programmed to cause the output device to display the outcome for the player for the instant win game.

35. A gaming unit for conducting a multi-player wagering game and an associated instant win game in accordance with claim 27, wherein the gaming unit controller is programmed to cause the output device to display the outcome of the multi-player wagering game as an outcome of a second wagering game at the gaming unit, wherein the displayed outcome of the second wagering game corresponds to the outcome of the multi-player wagering game.

36. A gaming unit for conducting a multi-player wagering game and an associated instant win game in accordance with claim 27, wherein the gaming unit controller is programmed to cause the output device to display the outcome of the multi-player wagering game and the outcome of the instant win game as an outcome of a second wagering game at the gaming unit, wherein the displayed outcome of the second wagering game corresponds to the outcomes of the multi-player wagering game and the instant win game.

37. A gaming unit for conducting a multi-player wagering game and an associated instant win game in accordance with claim 36, wherein the outcome of the multi-player wagering game is displayed in a first portion of the displayed outcome of the second wagering game and the outcome of the instant win game is displayed in a second portion of the outcome of the second wagering game.

38. A gaming unit for conducting a multi-player wagering game and an associated instant win game in accordance with claim 27, wherein:

the gaming unit controller is programmed to cause at least a portion of the instant win game wager amount to be added to a progressive jackpot pool; and

the gaming unit controller is configured to cause at least a portion of the progressive jackpot pool to be awarded to the player in response to determining that the selected outcome for the instant win game is a progressive jackpot-winning outcome.

39. A gaming unit for conducting a multi-player wagering game and an associated instant win game in accordance with claim 38, wherein the gaming unit controller is programmed to cause the player to be awarded an amount equal to the at least a portion of the instant win game wagers added to the progressive jackpot pool multiplied by the number of instant win game outcomes remaining in the finite pool of outcomes if the progressive jackpot-winning outcome is the last available progressive jackpot-winning outcome in the finite pool of outcomes.

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