An Entertainment Gaming Machine

FIELD OF INVENTION

The present invention relates broadly to an entertainment gaming machine, and to a method for managing operation of an entertainment gaming machine.

BACKGROUND

Arcade-type gaming centres have long enjoyed a high popularity, in particular as an entertainment activity for the youth. With the increased computer power available for arcade-type gaming machines, today a large variety of highly sophisticated arcade games are available, ranging from the more traditional games of skill such as multi-level progressive screen and console based games, to more physically interactive games of skill such as dancing games.

As an additional attraction, arcade-type gaming centres often implement the game of skill machines so that prizes can be awarded as a result of the game of skill. For example, toy-capture games fall into that category, as well as game of skill machines where tokens are being awarded depending on particular scores achieved in the game of skill, such as for reaching a current high-score. Such tokens can then be redeemed, typically at a redemption desk within the arcade-type gaming centre, for prizes such as toys or electronic equipment, or vouchers or the like.

On the other hand, game of chance-type entertainment machines are often provided in a separate environment from arcade-type gaming centres, in particular where the relevant laws prohibit the awarding of prizes based on results in a game of chance entertainment machine.

As a result, currently the operation and implementation of gaming machines is quite distinct between game of skill machines and game of chance-type entertainment machines, with for example separate card systems being implemented for purchasing

and managing game of skill and game of chance-type entertainment machines respectively, as well as a strict separation of the awarding of rewards or prizes, if any, from the respective entertainment machines.

SUMMARY

In accordance with a first aspect of the present invention, there is provided an entertainment gaming machine comprising a card reader module coupled to the gaming machine and configured for performing read and write functions from and to a data storage medium of a card coupled to the card reader module; and an exchange module coupled to the card reader module for converting amounts between different categories stored in the data storage medium of the card based on player input and according to respective exchange rates.

The gaming machine may further comprise a win module for awarding wins based on an entertainment game executed on the gaming machine; the win module being configured for selectively awarding the wins as respective amounts in one or more of the categories.

The win module may be configured for selectively awarding the wins based on player input.

The win module may comprise a determination unit for selectively awarding the gaming points based on operator input.

The card reader module may write respective current balances of the different categories onto the data storage medium of the card, onto a central data storage medium coupled to the gaming machine, or both.

The categories may comprise one or more of a group consisting of a cash value category, a game of chance (GOC) points category for playing a GOC entertainment game, a game of skill (GOS) points category for playing a GOS entertainment game, a redemption points category, a free play points category and a loyalty points category.

The exchange module may be configured for setting variable exchange rates based on an operator input.

The exchange module may comprise a rules database for storing data selectively indicating respective pairs of categories between which an exchange is enabled.

The exchange module may further comprises a player interface for selecting amounts to be exchanged between the different categories based on the player input.

In accordance with a second aspect of the present invention, there is provided a method for managing operation of an entertainment gaming machine, the method comprising the steps of providing a card reader module coupled to the gaming machine and configured for performing read and write functions from and to a data storage medium of a card coupled to the card reader module; and providing an exchange module coupled to the card reader module for converting amounts between different categories stored in the data storage medium of the card based on player input and according to respective exchange rates.

The categories may comprise one or more of a group consisting of a cash value category, a game of chance (GOC) points category for playing a GOC entertainment game, a game of skill (GOS) points category for playing a GOS entertainment game, a redemption points category, a free play points category and a loyalty points category.

The method may further comprise providing a rules database for storing data selectively indicating respective pairs of categories between which an exchange is enabled.

The method may further comprising setting variable exchange rates based on an operator input.

In accordance with a third aspect of the present invention, there is provided a computer readable data storage medium comprising code means for instructing a computer to execute a method for managing operation of an entertainment gaming machine, the method comprising the steps of providing a card reader module coupled to the gaming machine and configured for performing read and write functions from and to a data storage medium of a card coupled to the card reader module; and providing an exchange module coupled to the card reader module for converting amounts between different categories stored in the data storage medium of the card based on player input and according to respective exchange rates.

BRIEF DESCRIPTION OF THE DRAWINGS

Embodiments of the invention will be better understood and readily apparent to one of ordinary skill in the art from the following written description, by way of example only, and in conjunction with the drawings, in which:

Figure 1a) shows a schematic drawing of system components according to an example embodiment.

Figure 1b) shows a table illustrating a point conversion matrix implemented according to an example embodiment.

Figure 2a) shows a schematic drawing of an entertainment gaming machine according to an example embodiment.

Figure 2b) shows a schematic drawing of an entertainment gaming machine according to an example embodiment.

Figure 3 shows a schematic diagram illustrating a conversion rate based point system for implementation according to an example embodiment.

Figure 4 shows a schematic diagram of a computer device to implement the method and system according to example embodiments.

Figure 5 shows a schematic drawing of the structural elements of an entertainment gaming machine according to an example embodiment.

Figure 6 shows a flowchart illustrating a method for managing operation of an entertainment gaming machine, according to an example embodiment.

DETAILED DESCRIPTION

The embodiments described provide a method and system for implementing a cross-over between e.g. game of chance-type entertainment machines and game of skill-type entertainment machines to increase the overall attraction of such machines to the public, within the context of the prevailing laws.

Some portions of the description which follows are explicitly or implicitly presented in terms of algorithms and functional or symbolic representations of operations on data within a computer memory. These algorithmic descriptions and functional or symbolic representations are the means used by those skilled in the data processing arts to convey most effectively the substance of their work to others skilled in the art. An algorithm is here, and generally, conceived to be a self-consistent sequence of steps leading to a desired result. The steps are those requiring physical manipulations of physical quantities, such as electrical, magnetic or optical signals capable of being stored, transferred, combined, compared, and otherwise manipulated.

Unless specifically stated otherwise, and as apparent from the following, it will be appreciated that throughout the present specification, discussions utilizing terms such as "calculating", "determining", "generating", "initializing", "outputting", or the like, refer to the action and processes of a computer system, or similar electronic device, that manipulates and transforms data represented as physical quantities within the computer system into other data similarly represented as physical quantities within the computer system or other information storage, transmission or display devices.

The present specification also discloses apparatus for performing the operations of the methods. Such apparatus may be specially constructed for the required purposes, or may comprise a general purpose computer or other device selectively activated or reconfigured by a computer program stored in the computer. The algorithms and displays presented herein are not inherently related to any particular computer or other apparatus. Various general purpose machines may be used with programs in accordance with the teachings herein. Alternatively, the construction of more specialized apparatus to perform the required method steps may be appropriate. The structure of a conventional general purpose computer will appear from the description below.

In addition, the present specification also implicitly discloses a computer program, in that it would be apparent to the person skilled in the art that the individual steps of the method described herein may be put into effect by computer code. The computer program is not intended to be limited to any particular programming language and implementation thereof. It will be appreciated that a variety of programming languages and coding thereof may be used to implement the teachings of the disclosure contained herein. Moreover, the computer program is not intended to be limited to any particular control flow. There are many other variants of the computer program, which can use different control flows without departing from the spirit or scope of the invention.

Furthermore, one or more of the steps of the computer program may be performed in parallel rather than sequentially. Such a computer program may be stored on any computer readable medium. The computer readable medium may include storage devices such as magnetic or optical disks, memory chips, or other storage devices suitable for interfacing with a general purpose computer. The computer readable medium may also include a hard-wired medium such as exemplified in the Internet or Intranet systems, or wireless medium such as exemplified in the GSM mobile telephone system. The computer program when loaded and executed on such a general-purpose computer effectively results in an apparatus that implements the steps of the preferred method.

The invention may also be implemented as hardware modules. More particular, in the hardware sense, a module is a functional hardware unit designed for use with other components or modules. For example, a module may be implemented using discrete electronic components, or it can form a portion of an entire electronic circuit such as an Application Specific Integrated Circuit (ASIC). Numerous other possibilities exist. Those skilled in the art will appreciate that the system can also be implemented as a combination of hardware and software modules.

Figure 1a) shows a schematic drawing illustrating system components of an example embodiment. More particular, a game of chance-type entertainment machine 100 in a first location 102 is coupled to a card reader module 104. The card reader module is adapted to co-operate with a chip-card (or "smart card") 106 provided to a

user. The card 106 comprises a chip 108 in the example embodiment, for storing a plurality of gaming values in different functional categories, as will be described in more detail below. It will be appreciated by a person skilled in the art that a user can initially purchase the card 106, typically with pre-stored value(s), and/or repeatedly re-purchase value(s) to be added to the card.

In the example embodiment, the card 106 is configured such that values associated with the card are stored in a number of different categories. Any initially paid or top-up cash value is stored in a cash value category. Also provided on the card are Game of Chance (GOC) gaming points category, and Game of Skill (GOS) gaming points category, redemption points category, free play point category and loyalty points category. Upon presenting the card 106 via the card reader module 104, in the example embodiment an exchange module 107 coupled to the card reader 104 is triggered. More particular, the user is prompted to initiate, if desired, exchange transactions for converting between the different categories, based on certain rules implemented on the exchange module 107.

Figure 1b) shows an example point conversion matrix 150 according to an example embodiment. The point conversion matrix here includes database entries for a cash value category 152, a GOS gaming points category 152, a GOC gaming points category 156, a redemption point category 158, a loyalty point category 160 and a free play point category 162. It will be appreciated that exchange rules can thus be implemented using the point conversion matrix 150, illustrated by light shaded fields e.g. 164 indicating enabled exchange possibility, while non-filled fields e.g. 166 indicate that an exchange is not enabled, i.e. unavailable. The darker shaded fields e.g. 168 indicate the same category, thus no exchange is meaningful. Also illustrated in the conversion matrix 150 is the conversion from cash 170 to the cash value 152 category (only) in the example embodiment.

Also illustrated in the point conversion matrix 150 in this example embodiment is a scenario where certain exchange opportunities are only selectively enabled, for example depending on a jurisdiction in which the gaming machine 100 is being employed. In the example shown in Figure 1b), for example the conversion between the GOC point category 156 and the redemption point category 158 is indicated as enabled

except where the gaming machine 100 is employed in certain markets where such a conversion may be contrary to legislation, for example in Japan.

It will be appreciated that the example embodiment can thus provide a number of advantages, including increasing the attraction of the entertainment machine to the player, for example where favorable conversion rates are implemented between the different categories, for example during a promotional period. At the same time, the example embodiment can provide a convenient customization opportunity through implementation of the exchange module such that the entertainment machine can be readily adapted to deployment in different markets and different legislative environments.

Figure 2a) shows a more detailed view of the GOC entertainment machine 100 of the example embodiment. More particular, an example schematic screen display 200 is shown, representing a screen displayed upon presenting the card 106 to the card reader 104 coupled to the exchange module 107. The user is presented with the current amounts in the respective categories, including e.g. the cash value category 202. Also displayed are current exchange rates e.g. 204, for exchange between different categories, for example between the cash value category 202, and the GOC gaming points category 206. User input for selection and effecting of the relevant exchanges can be implemented in a number of ways understood in the art, including through e.g. a touch-screen based interface 210, or other input means such as a keyboard (not shown).

Returning to Figure 1a) the user can use e.g. the exchanged GOC gaming points and GOS gaming points for playing on the GOC entertainment machine 100, and a GOS entertainment machine 110 respectively. The GOS entertainment machine 110 may be located at a different location 112 compared with the GOC entertainment machine 100. In Figure 1a), the GOS entertainment machine 110 is in the form of a dancing machine. The operation and manufacturing of the GOC entertainment machine 100 and the GOS entertainment machine 110 are understood in the art, and will not be described herein in any detail.

In use, the same card 106 thus provides for separate use of points categories exchanged by the user e.g. for playing the GOC entertainment machine 100 and GOS

entertainment machine 110 respectively. As described in the background section, the GOS entertainment machine 110 can be configured such that prizes may be awarded depending on the result of the relevant game of skill, for example the dancing game of skill in the example embodiment. In the example embodiment, a card reader 114 coupled to the GOS entertainment machine 110 is configured to issue redemption points for storage in the redemption points category database of the card 106 for example when the player sets a new high score for the dancing game. However, it will be appreciated that the awarding of prizes can be implemented in different ways, and can be dependent upon different result scenarios, such as reaching a predetermined score, or different pre-determined score levels. In another implementation, redemption points may be awarded randomly.

In another embodiment, additionally or as an alternative to issuing redemption points to the card 106, the machine 110 can be configured to issue printed redemption tokens.

Figure 2b) shows a more detailed view of the GOS entertainment machine 110 of the example embodiment. More particular, an example schematic screen display 250 is shown, representing a screen displayed after a win or reward issuing has been determined in the game of skill associated with the GOS entertainment machine 110. The user is presented with a selection of either a certain number of redemption points, indicated at 252 on a touch screen 254, or a particular number, which may be the same or a different number, of GOC gaming points, indicated at 256 on the touch screen 254, or a particular number, which may be the same or a different number, of GOS gaming points (or free play points), indicated at 258 on the touch screen 254.

Accordingly, in the example embodiment the user is provided with a selection between winning GOC gaming points for use on GOC entertainment machines such as GOC entertainment machine 100 (Figure 1a), or to be awarded GOS gaming points, or to be awarded redemption points. It will be appreciated that in different embodiments, the GOS entertainment machine 110 may additionally or alternatively be configured to pre-determine what type of points are awarded for any particular winning reward scenario in the relevant game of skill. Furthermore, alternatively or additionally the GOS gaming machine 110 may be configured to allow the user to divide points in a particular

winning reward scenario selectively between GOC, GOS gaming points, and redemption points.

In the configuration as illustrated in Figure 2b), if the user selects the GOC gaming points 256 as his option, the GOC gaming points will be added to a current balance of GOC gaming points category, displayed at 259 on the screen 254 in the example embodiment. If the user selects the GOS gaming points 258, the won GOS gaming points will be added to the GOS gaming points category displayed at 260. Similarly, if the user selects the redemption points category, displayed at 252 on the screen 254, the redemption points will be added to the redemption points category, displayed at 262. Selected win conversions can advantageously be implemented by way of a win module 251, for example based on implementation of a win conversion matrix similar to the point conversion matrix described above with reference to Figure 1b).

In another embodiment, as an alternative to the selected win conversion, the entertainment machine may be configured to award wins in only one category, e.g. GOC points for a GOC entertainment machine, GOS points for a GOS entertainment machine, etc. In such an embodiment, the player can still utilize the exchange module 117 to convert between different points categories, based on a conversion matrix (compare Figure 1b)).

When the user terminates playing on the GOS entertainment machine 110, the current balances of the respective points will be updated in the specific category on the card 106, as well as performing any updates to the specific category points on the card 106.

It will be appreciated by a person skilled in the art, that the example embodiment thus provides a single card system for use e.g. between a GOC entertainment machine and a GOS entertainment machine, without compromising the integrity of separation between conversion of points depending on relevant rules or laws in the environment in which the system is implemented. As mentioned in the background section, the relevant laws may e.g. require that prizes are only being awarded for game of skill entertainment machines, but not for game of chance entertainment machines. As described above, this can be implemented in the example embodiment through specific rules implemented

in the exchange module and the win module, and as illustrated e.g. in Figure 1b) for enabling or disenabling exchanges/awarding of prizes between different points categories. Furthermore, the example embodiment, in providing the relevant exchange rates as an additional, controllable parameter of the gaming machine, effectively adds an additional characteristic or feature to the entertainment machine, which can be utilized to differentiate between machines, for example by providing favorable exchange rates during promotional periods, or between machines from competing operators.

Figure 3 shows a schematic diagram illustrating the conversion rate based point system 300 for implementation in an example embodiment. At the cash entry level 300, any initially purchased or top-up cash amount is added to the cash value category stored on the card, indicated at 302. Upon presentation of the card to a gaming machine including a card reader coupled to an exchange module, a user interface is provided for exchanging from the cash value category (see 302), to a GOS points category (see 304), or to a GOC points category (see 306), each based on respective exchange rates. It is noted that in some jurisdictions, cash value directly from the cash value category (see 302) may be used to play GOS-type games, or alternatively play points from the GOS points category (see 304) may be used. It is noted here that GOS games include any type of games that are not categorized as GOC games, which may depend also on the relevant law in different countries, and may include redemption game machines, or other games such as video games, toy catchers, or kiddy rides etc. Those games are indicated generally at 308 in Figure 3, whereas GOC games are indicated at 310.

From the GOS-type games (see 308), wins or rewards may be awarded using a win module of the gaming machine in an example embodiment. Here, redemption points at 312, and/or loyalty points at 314 may be awarded. As described above, the win module may enable user input in the choice of the awarded points. Alternatively, again as described above, the win module may be configured for automatic selection of the awarded points or single awarded point category, and using relevant rate(s). Redemption points (see 312) rewarded by the GOS-type games (see 308) can also be exchanged using the exchange module of the or another entertainment machine, e.g. to GOC points (see 306). Depending on the jurisdiction, GOC points (see 306) may also be allowed to be exchanged back to redemption points (see 312). Similarly, loyalty points (see 314) awarded for playing the GOS-type games (see 308) or for exchange of

GOC points (see 316) may be exchanged using the exchange module of the or another gaming machine.

In the example embodiment, loyalty points (see 314) are allowed to be exchanged to any other points, at respective exchange rates. Redemption points (see 312) can by "physically" exchanged for prizes e.g. from a redemption wall (see 317). Loyalty points (see 314) can be physically exchanged for rewards such as voucher-based rewards for food and beverages outlets (see 318) or merchandise outlets (see 320). It will also be appreciated that the relevant exchange rates are again controllable, for example as implemented by a card-based redemption counter, such that favorable rates may for example be offered during promotional periods.

In the example embodiment shown in Figure 3, a separate free play point category (see 322) is provided, which may be awarded by Advertising and Promotion (A & P) activities (see 324) such as a Jackpot or Event, etc. However, it will be appreciated that instead of a separate category, the points may be awarded and processed directly using the GOS point category (see 304) in different embodiments. The free play points (see 322) can be used to play the GOS-type games (see 308), depending on respective play rates. In the example embodiment, the rate for using the free play points (see 322) is equivalent to the rate for using the GOS points (see 304).

The GOC entertainment machine 100 and the GOS entertainment machine 110 may each include a computer device 400, schematically shown in Figure 4.

The computer module 402 in an example implementation includes a processor 404, a Random Access Memory (RAM) 406 and a Read Only Memory (ROM) 408. The computer module 402 also includes a number of Input/Output (I/O) interfaces, for example I/O interface 410 to a display 412, I/O interface 418 to a card reader 420, I/O interface 422 to an exchange module 424, and I/O interface 426 to a win module 428. As mentioned above, each of the card reader 420, exchange module 424 and win module 428 may be implemented using discrete electronic components, or can form a portion of an entire electronic circuit such as an application specific integrated circuit (ASIC).

The components of the computer device 402 typically communicate via an interconnected bus 414 and in a manner known to the person skilled in the relevant art.

The application program is typically supplied to the operator of the gaming machine encoded on a data storage medium such as a CD-ROM or a flash memory module such as a memory card/stick and read utilizing a corresponding data storage medium drive of a data storage device 416. The application program is read and controlled in its execution by the processor 404. Intermediate storage of program data may be accomplished using RAM 406.

Figure 5 shows a schematic drawing of an entertainment gaming machine 500 in an example embodiment, including a screen 501 for displaying and executing an entertainment game. The entertainment gaming machine 500 comprises a card reader module 502 configured for performing read and write functions from and to a data storage medium 508 of a card 504 coupled to the card reader module 502, and an exchange module 506 coupled to the card reader 502 for converting amounts between different categories stored in the data storage medium 508 of the card 504 according to respective exchange rates. The exchange module 506 is configured for setting variable exchange rates based on an operator input.

The gaming machine 500 further comprises a win module 510 for awarding wins based on an entertainment game executed on the gaming machine 500; the win module 510 being configured for selectively awarding the wins as respective amounts in one or more of the categories. The card reader module 502 writes respective current balances of the different categories onto the data storage medium 508 of the card 504, onto a central data storage medium 512 coupled to the gaming machine 500, or both. The exchange module 506 comprises a rules database 514 for storing data selectively indicating respective pairs of categories between which an exchange is enabled.

Figure 6 shows a flowchart 600 illustrating a method for managing operation of an entertainment gaming machine according to an example embodiment. At step 602, a card reader module configured for performing read and write functions from

and to a data storage medium of a card coupled to the card reader module is provided. At step 604, an exchange module coupled to the card reader for converting amounts between different categories stored in the data storage medium of the card based on player input and according to respective exchange rates is provided.

It will be appreciated by a person skilled in the art that numerous variations and/or modifications may be made to the present invention as shown in the specific embodiments without departing from the spirit or scope of the invention as broadly described. The present embodiments are, therefore, to be considered in all respects to be illustrative and not restrictive.

CLAIMS

1. An entertainment gaming machine comprising:

a card reader module coupled to the gaming machine and configured for performing read and write functions from and to a data storage medium of a card coupled to the card reader module; and

an exchange module coupled to the card reader module for converting amounts between different categories stored in the data storage medium of the card based on player input and according to respective exchange rates.

2. The gaming machine as claimed in claim 1, further comprising a win module for awarding wins based on an entertainment game executed on the gaming machine; the win module being configured for selectively awarding the wins as respective amounts in one or more of the categories.

3. The gaming machine as claimed claim 2, wherein the win module is configured for selectively awarding the wins based on player input.

4. The gaming machine as claimed claims 2 or 3, wherein the win module comprises a determination unit for selectively awarding the gaming points based on operator input.

5. The gaming machine as claimed in any one of the preceding claims, wherein the card reader module writes respective current balances of the different categories onto the data storage medium of the card, onto a central data storage medium coupled to the gaming machine, or both.

6. The gaming machine as claimed in any one of the preceding claims, wherein the categories comprise one or more of a group consisting of a cash value category, a game of chance (GOC) points category for playing a GOC entertainment game, a game of skill (GOS) points category for playing a GOS entertainment game, a redemption points category, a free play points category and a loyalty points category.

7. The gaming machine as claimed in any one of the preceding claims, wherein the exchange module is configured for setting variable exchange rates based on an operator input.

8. The gaming machine as claimed in any one of the preceding claims, wherein the exchange module comprises a rules database for storing data selectively indicating respective pairs of categories between which an exchange is enabled.

9. The gaming machine as claimed in any one of the preceding claims, wherein the exchange means further comprises a player interface for selecting amounts to be exchanged between the different categories based on the player input.

10. A method for managing operation of an entertainment gaming machine, the method comprising the steps of:

providing a card reader module coupled to the gaming machine and configured for performing read and write functions from and to a data storage medium of a card coupled to the card reader module; and

providing an exchange module coupled to the card reader module for converting amounts between different categories stored in the data storage medium of the card based on player input and according to respective exchange rates.

11. The method as claimed in claim 10, wherein the categories comprise one or more of a group consisting of a cash value category, a game of chance (GOC) points category for playing a GOC entertainment game, a game of skill (GOS) points category for playing a GOS entertainment game, a redemption points category, a free play points category and a loyalty points category.

12. The method as claimed in claims 10 or 11, further comprising providing a rules database for storing data selectively indicating respective pairs of categories between which an exchange is enabled.

13. The method as claimed in any one of claims 10 to 12, further comprising setting variable exchange rates based on an operator input.

14. A computer readable data storage medium comprising code means for instructing a computer to execute a method for managing operation of an entertainment gaming machine, the method comprising the steps of:

providing a card reader module coupled to the gaming machine and configured for performing read and write functions from and to a data storage medium of a card coupled to the card reader module; and

providing an exchange module coupled to the card reader module for converting amounts between different categories stored in the data storage medium of the card based on player input and according to respective exchange rates.