

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ACTIVISION BLIZZARD, INC.,  
Petitioner

v.

MILESTONE ENTERTAINMENT, LLC,  
Patent Owner

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Case No. IPR2025-00709  
U.S. Patent No. 10,650,635

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**DECLARATION OF DWIGHT CREVELT IN SUPPORT OF  
PETITION FOR *INTER PARTES* REVIEW OF  
U.S. PATENT NO. 10,650,635**

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## I. INTRODUCTION

1. I, Dwight Crevelt, have been retained by Activision Blizzard, Inc. (“Activision”) to provide an analysis of the scope and content of U.S. Patent No. 10,650,635 (Ex. 1001, “’635 patent”) relative to the state of the art at the time of the earliest application to which the ’635 patent claims priority. My analysis relates to claims 1, 2, 4, 6, 8-10, 14-18, 21-23, 25, 27, and 29. I have also been retained to provide analysis regarding what a person of ordinary skill in the art (“POSITA”) would have understood at the time of the earliest application underlying the ’635 patent.

2. This declaration summarizes the opinions I have formed to date. I reserve the right to modify or amend my opinions, if necessary, based on further review and analysis of information that I receive subsequent to the filing of this declaration, including in response to positions taken by Milestone Entertainment, LLC (“Milestone” or “Patent Owner”) or its experts that I have not yet seen, including any secondary considerations evidence that Milestone or its expert may consider and present.

3. It is my opinion that claims 1, 2, 4, 6, 8-10, 14-18, 21-23, 25, 27, and 29 of the ’635 patent are invalid based on the following grounds.

Ground 1	Schneier143 (Ex. 1008) Renders Obvious The Challenged Claims
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Ground 2	Schneier143 (Ex. 1008) In View Of Okita (Ex. 1009) Renders Obvious The Challenged Claims
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## **II. EXPERIENCE, QUALIFICATIONS, AND STATUS AS AN INDEPENDENT EXPERT**

4. I am an expert in the field of design and operation of gaming machines and systems for the casino industry.

5. I am the founder and presently president of Crevelt Computer System, Inc., a gaming business consulting and engineering development company that is located and incorporated in Las Vegas, Nevada. I founded Crevelt Computer in 1977. Although I discuss my expert qualifications in more detail below, I also attach as Ex. 1004 a recent and complete curriculum vitae, which details my educational and professional background.

6. My formal, post-high school education started at the University of Las Vegas in 1973. I continued my education at the U.S. Naval Academy from 1975 to 1977. I then attended Iowa State University, where I received my Bachelor of Science degree in Computer Engineering in 1979.

7. My professional experience in the casino gaming industry started in 1974, when I joined Gamex Industries as a software engineer. As a software engineer, I designed and developed casino game management systems, including an



on-line slot accounting and monitoring system, and I also maintained Gamex's online casino table game accounting system. I was also responsible for maintaining the system that monitored the play of table games and slot machines as installed in Caesar's Palace, Las Vegas.

8. In 1977, I started my own consulting company, Crevelt Computer System, Inc., and near the end of 1977 I worked at United Audio Visual as a software engineer developing audio/video controllers for multimedia shows.

9. From 1979 to 1980, I continued to work in the gaming industry as a computer engineer for Sircoma (later becoming IGT). At Sircoma, I developed various gaming machines, including video Poker, video Blackjack, video Red Dog and Whirlwin. I also had responsibility for maintaining the software for the video slot machines. I also acted as a technical gaming control liaison, which involved providing the Nevada Gaming Control Board staff with technical information regarding the company's gaming devices. The Nevada Gaming Control Board regulates the gaming industry in Nevada, overseeing the licensing and compliance of casinos as well as manufacturers and the equipment used in gaming.

10. In 1981, I worked for Mills-Jennings as a Director of Corporate Research. In this role, I assembled and supervised a research and development team that designed a complete line of video casino gaming machines and an on-line casino

accounting system. 13. From 1984 to 1986, as a consultant with Crevelt Computer System Inc., I worked with Electronic Data Technologies, where I designed and developed the first complete on-line Player Tracking System.

11. From 1988 to 1996, I worked for Electronic Data Technologies (EDT) and International Game Technologies (IGT). I was responsible for design, development and implementation of player tracking and accounting systems for casino games. Specifically, I was responsible for the development, deployment and support for over 150 installations of the SMART system and the first cashless system utilized by Caesar's Palace, Las Vegas. In 1995, I was promoted to Product Manager for Cashless Applications. In this role, I prepared business plans and strategies for implementing cashless gaming products, including IGT's first SMART card-based cashless gaming system installed at SBM in Monte Carlo. I also spent time evaluating casino-related intellectual property, particularly patents, especially those pertaining to cashless gaming and progressive systems.

12. As a consultant with Crevelt Computer Systems, I have worked with many gaming equipment manufacturers on the design and development of casino gaming devices, including slots, video games, Keno and Bingo systems. I also have provided independent laboratory analysis of games for regulators in New South

Wales, Australia and the state of Mississippi. Additionally, I have conducted mathematical analyses for casino gaming devices.

13. From 1998-2013, Crevelt Computer System was a Partner in FootTraffic Promotional Gaming LLC. As a Partner with FootTraffic Promotional Gaming LLC, I have designed, developed, managed and marketed a series of promotional games for casinos, retailers and trade shows. These are free-play games that are designed to bring or attract patrons to the casino with an opportunity to win cash and prizes. These games have been very successful and several have been incorporated into permanent promotions at several casinos, including Peppermill Casino (Reno), Casino Fandango (Carson City), and Silver Legacy (Reno).

14. In sum, I have over forty years of engineering and management experience in the gaming industry, both as a consultant and an employee. During this time, I have worked extensively with OEMs, casinos, casino gaming regulators and agencies worldwide, including the Nevada Gaming Control Board. I am also the co-author of two books that relate to the casino gaming industry – Slot Machine Mania and Video Poker Mania – which are still in publication twenty years after they were first published. Additionally, I have been interviewed for numerous magazines, radio programs and television shows regarding gaming machines and the casino industry, including appearances on Secrets Revealed (a documentary on The

Learning Channel) and High Rollers (a documentary on the Discovery Channel). Throughout my career, I have kept up to date with the latest developments in the casino industry by subscribing to casino-related trade publications and attending casino gaming shows. In addition, I am a named inventor on six United States patents related to casino gaming systems (i.e., cashless and progressive gaming systems).

15. I am being compensated at the rate of \$400 per hour for my work on this declaration. My fee is not contingent on the outcome of any matter or on any of the technical positions I explain in this declaration.

16. I have no financial interest in Activision. I have been informed that Milestone claims ownership of the '635 patent. I have no financial interest in Milestone.

### **III. MATERIALS REVIEWED AND CONSIDERED**

17. My opinions in this declaration are based on working in the field of computer and software engineering and the casino gaming industry, including my research and consulting. I have an established understanding of the relevant field at the relevant timeframe and I have an understanding of the skill set, capabilities, and knowledge of a POSITA as of September 1, 2004.

18. My opinions are also based on investigation and study of the patent at issue, its file history, and the prior art. In the course of forming my opinions, I have

reviewed the exhibits submitted with the Petition, which are specifically identified in Appendix A.

19. I may rely upon these materials and/or additional materials to rebut arguments raised by Milestone. Further, I may also consider additional documents and information in formulating any necessary opinions including documents that may not yet have been provided to me.

#### **IV. UNDERSTANDING OF RELEVANT LEGAL PRINCIPLES**

20. I understand that statutory and judicially created standards must be considered to determine the validity of a patent claim. I am not an attorney and, consequently, will offer no opinion on the law itself. My understanding of the pertinent law is described in this section and is the result of explanations provided by counsel. I have applied this understanding in my analysis.

21. I understand that a patent claim is unpatentable if it is obvious in view of the prior art. I further understand that the frame of reference for determining whether a claim is obvious is from the perspective of a POSITA at the time of invention. I have been asked to assume that the effective priority date is September 1, 2004. I have not been asked to determine whether this date is appropriate.

**A. Anticipation**

22. I have been informed that for a patent claim to be anticipated by the prior art, each and every limitation of the claim must be found, expressly or inherently, in a single prior art references as recited in the claim. I have been informed that a claim limitation not expressly found in a prior art references is inherent if the prior art necessarily functions in accordance with, or includes, the claim limitation. Mere probability that a limitation is included is not sufficient to establish inherency.

**B. Obviousness**

23. In analyzing obviousness in light of the prior art I have been informed that it is important to understand the scope of the claims, the level of skill in the relevant art, the scope and content of the prior art, the differences between the prior art and the claims, and any objective indicia of non-obviousness (also called secondary considerations).

24. I have been informed that a patent claim is unpatentable for obviousness if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a POSITA to which said subject matter pertains. I have been informed that obviousness may be based on one reference or a combination of

references. I have been informed that the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.

25. I have been informed that when a patented invention is a combination of known elements, the Board must determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue by considering the teachings of prior art references, the effects of demands known to people working in a field or present in the marketplace, and the background knowledge possessed by a POSITA.

26. I have been informed that the Supreme Court has recognized several rationales for combining references or modifying a reference to show obviousness of the claimed subject matter. I understand that several of these rationales are: (1) combining prior art elements according to known methods to yield predictable results; (2) simple substitution of one known element for another to obtain predictable results; (3) use of a known technique to improve a similar device (method or product) in the same way; (4) applying a known technique to a known device (method or product) ready for improvement to yield predictable results; (5) choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; (6) and some teaching, suggestion, or motivation in the prior

art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

27. I have been informed that in order to prove that a claimed invention is not patentable for obviousness, a petitioner must (1) identify the differences between the claim and particular disclosures in the prior art references, singly or in combination, (2) specifically explain how the prior art references could have been combined in order to arrive at the subject matter of the claimed invention, and (3) specifically explain why a POSITA would have had reasons to so combine the prior art references.

## **V. TECHNOLOGY OVERVIEW**

28. Virtual money has been a mainstay in electronic gaming for decades. One of the benefits of virtual money is enhanced player engagement through player tracking and the perception of bigger wins. By 1990, most major casinos had player tracking systems with virtual money. Virtual money could take the form of promotions, points, and cashless gaming. Such features often permitted players to transfer credits between a gaming machine and an account on a host computer system so that the player could play gaming machines in a casino without carrying currency and coins from game to game. The player could receive virtual currency as part of a promotion or increase the payouts if the player meets certain game play



goals. The objective of such systems was to encourage the players to play more due to the perception of big wins, or wager the virtual money and ultimately real money as well.

**A. Basic Electronic Gaming**

29. It was well-known to have gaming systems that included a processor coupled to memory. Electronic gaming systems, such as slot machines, arcade games, and home video consoles, have been known for decades. These systems would necessarily need memory to store the code for the game program and a processor to execute that code.

30. For example, home video game consoles in the 1980s and 1990s had a processor coupled to memory as did personal computers during that era on which users could play games. Early generations of gaming consoles used 8-bit processors, but later generations used 16-bit processors. These early generations of gaming systems had processors coupled with memory that was measured in kilobytes and later in megabytes. Both video games and personal computers had a variety of ways to receive input from a user, which included keyboards and mice, joysticks, and gaming pads, as well as other forms of input. It was also well-known for such gaming devices to output information to the player on a display, such as a computer monitor for personal computers or a household television for home video game consoles.

Images would need to be created to output this information to the display and communicate this information to the player.

31. It was also well-known to have games with multiple levels where players could advance from one level to the next. For example, side scroller games in the 1980s involved worlds with different themes that players could advance through. Other well-known games were role-playing games, in which players could control a character, such as a sprite or avatar, navigating through virtual worlds. In such games, dungeons often had multiple levels that players could advance through. Similarly, users could control these sprites or avatars and have them gain experience points in order to advance levels in a multi-level game.

#### **B. Virtual Money**

32. There is a long history of using virtual money in the context of electronic game environments. *See, e.g.*, Ex. 1022 at 8 (discussing the use of virtual money in Virtual World in the late 1990s); Ex. 1023 at 1 (discussing virtual economies in the late 1990s).

33. For decades, games have used different forms of virtual money. For example, games had gold coins, rings, or platinum pieces that players could collect. In role-playing games, users could obtain that virtual money through gameplay, such as by completing quests, defeating enemies, or opening treasure chests. In these

games, it was well-known for users to buy special in-game items, such as weapons, armor, tools, keys, power-ups, potions, and elixirs. *See, e.g.*, Ex. 1022 at 25; Ex. 1025 at 1. These special items, in turn, allowed users to access new areas, complete new challenging quests, and obtain even greater rewards. It was well-known for these special items to be depicted through an image on screen.

34. This virtual money in games could be obtained through cash purchase. *See, e.g.*, Ex. 1022 at 30-31; Ex. 1023 at 33-34; Ex. 1024 at 2. For example, it was well-known in arcade games to insert coins into arcade machines to purchase “lives” which represented the ability to play the arcade game for a limited period. In the early 1990s, there were arcade games where users could use additional credits to purchase in-game items.

35. By 2003, there were multiple well-known massive multiplayer online role-playing games (MMORPGs), in which a large number of players would control avatars or sprites in a persistent online world. In these MMORPGs, there were common themes such as obtaining special items and virtual money, such as gold or platinum pieces, through gameplay, such as by killing monsters, completing quests, or defeating bosses. Additionally, since these MMORPGs involved multiple users playing in a common, persistent world, it was a well-known functionality for users to be able to trade special items and/or virtual money with each other.

36. This in turn led to “foreign trade” by which users could enter into a transaction in the real world with a corresponding transaction in the virtual world. Specifically, there were a number of well-known MMORPGs before 2003, in which there were well-known public web auction sites where users could purchase virtual money, such as virtual gold or virtual platinum pieces, in game. The buyer would pay real money (*i.e.*, U.S. dollars) to the seller through a third party, and then the buyer and seller would meet in the virtual world too, and an avatar controlled seller would transfer a virtual money or a special item to the buyer. In these auctions, the purchase price of the virtual money was subject to a multiplier. For example, a user might purchase 9,328 platinum pieces for \$100 for an exchange rate of 93.28 platinum pieces per dollar, or conversely, \$0.01072 per platinum piece.

**C. Online Gaming Using A Gaming Server And Gaming Clients**

37. Online gaming in virtual worlds trace their history back to on-line games on the ARPAnet, a precursor of the modern internet, in the 1980s. Ex. 1022 at 6. Thus, online gaming that involved a centralized gaming server and one or more gaming clients was also well-known by 2004.

38. For example, one reference from 2003 discussed a “video game system comprises client terminal devices 1 that are each equipped with a monitor and have associated identification information, arcade-based server devices 2 that are

connected to the client terminal devices 1 in a data-communicable fashion that manage the game that is played by a plurality of players using the client terminal devices 1, and a management server device 3 that is connected to the plurality of arcade-based server devices 2 such that data communication can take place therebetween.” Ex. 1009, ¶ 0044 (emphasis added).

39. Another reference from 2003 similarly discussed “[a] gaming machine of the invention may be connected to an accounting and gaming information system operatively coupled to a central server computer.” Ex. 1022 at ¶ 0023. That same reference later disclosed: “. . . a bank of networked gaming machines and further contemplated that the game may be implemented as a linked progressive game among a plurality of networked gaming machines at a single or plurality of different sites.” Ex. 1026 at ¶ 0023.

#### **D. Input Controls and Displays for Gaming Clients**

40. It was also known in the art for gaming clients to receive input from users as well as to use displays to output game information back to the users.

41. For example, one reference from 2003 discussed a variety of input devices for the “client terminal device” including a “touch panel” and “buttons” that could be pressed by a user. Ex. 1009, ¶ 0051; *see also id.*, ¶ 0018 (discussing touch panel and buttons in depth).

42. That same reference from 2003 also discussed a “monitor” that could be a “liquid crystal display” that “displays images.” Ex. 1009, ¶ 0052; *see also id.*, ¶ 0049 (discussing the use of a “household television” as the display).

43. Another reference from 2003 disclosed “discrete inputs” such as “coin acceptors, game buttons, mechanical hand levers, key and door switches and other auxiliary inputs.” Ex. 1026 at ¶ 0033. That same reference also disclosed interfaces “for game display device 178,” as well as connecting to “a high-resolution monitor 162” as well as “a touch screen 166 (which may also serve as a game display device) . . . .” Ex. 1026 at ¶ 0034; *see also id.* at ¶ 0040 (“The games support input and output between the player and the game for such devices as heads up display, joystick, keyboard, mouse and data glove via interface modules connected through the expansion bus or buses 182 and SCSI port 188.”).

**E. Gaming Clients Had Processors Coupled To Memory To Process Data For Generating Gameplay Information**

44. It was also known in the art for gaming devices to have processors coupled to memory generating gameplay information.

45. For example, one reference from 2003 discussed saving gameplay data to RAM, and “[p]rocessing is then performed by the CPU 161 based on the control program and various data (image data such as polygons and texture for displayed objects and other character images, as well as sound data) stored on the RAM 162,

as well as on detection signals from the detection units. In other words, based on detection signals and the like, the CPU 161 generates appropriate commands for the tasks of image draw and sound output.” Ex. 1009, ¶ 0060.

46. Another reference from 2003 discussed how a “gaming machine may include a single processor or group of processors that effect play of the base game and the bonus game . . . .” and how the device also included “memory in the form of ROM, RAM, flash memory and EEPROM (electrically erasable programmable read only memory).” Ex. 1026 at ¶¶ 0022, 0032.

**F. Using Real Money To Purchase Virtual Money**

47. It was known in the art for users to acquire virtual money through cash purchase.

48. For example, one reference from 2003 discussed two “conversion means” the first of which was the “conversion between the virtual money and real money using a prescribed conversion rate,” and the second was “conversion between the virtual money and the prescribed pseudo-values using a prescribed conversion rate.” Ex. 1009, ¶ 0185.

49. That 2003 reference explained that once converted the system tracked the amount of virtual money associated to each user: “The management server device 3 is connected to the plurality of arcade-based server devices 2 in a data

communicable fashion. It stores player information including player fingerprint characteristic data needed for fingerprint verification described below, as well as the amount of virtual money possessed by each player, in association with the player's user ID, and also transmits and receives data to and from each client terminal device 1 via the applicable arcade-based server device 2.” Ex. 1009, ¶ 0047. The 2003 reference walked through the conversion of real money into virtual money in detail: “Additional coins are then received via the coin receiving unit 15 from the player based on the addition request screen not shown in the drawings (step ST211), the real money conversion unit 161m converts the additional inserted coins into virtual money (step ST213), and data regarding the amount of virtual money obtained after conversion is sent to the management server device 3 via the network, the arcade-based server device 2 and the network communication unit 18.” Ex. 1009, ¶ 0129 (emphasis added).

50. Another 2003 reference explained that the gaming machine or device included a “card reader 192 (debit/credit, player card, etc.) . . . .” Ex. 1026 at ¶ 0035. That reference explained that: “A player begins play on gaming machine 100 by first placing cash, at reference character 406 of FIG. 4, into the machine via a coin acceptor 152, a dollar bill validator S4 or by credits 102 transferred from a player card 125, which may be a so-called ‘smart card’.” Ex. 1026 at ¶ 0047. The reference



explained that players could then wager “credits” so-purchased, and could also receive credits as payouts from winning a game: “Payouts of any credit winnings, at reference character 506 of FIG. 5, may be roughly proportional to the wagered credits 104 and are incremented to the player’s net credits 102.” Ex. 1026 at ¶ 0047.

**G. Acquiring Virtual Money Through Gameplay**

51. It was known in the art for users to acquire virtual money through gameplay.

52. For example, one reference from 2003 discussed a “game result integration unit” that “performs addition or subtraction of the amount of increase or decrease in the counters represented by points that occurred during the game played by the player, now represented in the form of virtual money, to or from the amount of the player’s current virtual money stored prior to the commencement of the game in the player information storage means 371, and updates the player information stored in the player information storage unit 371 accordingly.” Ex. 1009, ¶ 0074 (emphasis added).

53. As another example, one reference from 2003 discussed awarding “resources” during gameplay, where such resources include “credits or specific resources that may be used in an attempt to enter bonus event play or for use in the bonus event.” Ex. 1026 at ¶ 0012 (emphasis added); *see also id.* (“A player may

collect . . . credits, during play of the base game and/or during play of the bonus event.”); *id.*, ¶ 0017 (“A player may also receive an award (e.g., game credits, money, other awards) upon receiving certain tools.”) (emphases added); *id.*, ¶ 0055 (“Advancing to the next bonus level may also result in the player being provided with additional credits 102”).

54. That reference goes on to wagering credits in order to gain “credit winnings” as well as incrementing and decrementing credits during gameplay: “Credits 102 and tools 110 are decremented from the players toolbar and net credits 110 as they are wagered during play of the base game and bonus event.” Ex. 1026 at ¶ 0047; *see also id.* at 0059 (discussing how wagering credits during gameplay “may result in the possibility of increased credit winnings, as well as other prizes.”) (emphasis added).

#### **H. Purchase Of Virtual Money Subject To A Multiplier**

55. It was known in the art for virtual money acquired by purchase to be subject to a multiplier.

56. For example, one reference from 2003 discussed the conversion of real money to virtual money “using a prescribed exchange rate. The prescribed exchange rate here is a rate used in order to perform conversion between virtual money and real money. In this embodiment, 10,000 virtual money units is equivalent to one

coin, but this exchange rate is arbitrary, and the exchange rate may be set such that 10,000 virtual money units is equivalent to two coins.” Ex. 1009, ¶ 0071 (emphasis added).

**I. Using Virtual Money To Purchase Special Items**

57. It was known in the art to convert virtual money into virtual special items.

58. For example, one reference from 2003 discussed “pseudo-values” that could be for example, “the number of points earned based on the number of enemy characters that have been defeated . . . .” U.S. Patent Pub. 2003/0078102 (“Okita”) at ¶ 0004. These “pseudo-values” or “earned points” that were “earned via a game protagonist” could be used to “buy supplies, equipment, items or the like during the game.” Ex. 1009, ¶ 0004.

59. As another example, a reference from 2003 discussed how a player use virtual money in order to purchase “tools”: “Additional tools may be purchased with credits.” Ex. 1026 at ¶ 0017 (emphasis added); *see also id.* at 0051 (“If desired, the player may purchase one or more tools 110 that may be wagered in play of a subsequent, bonus event level, or in seeking to advance to a first level of the bonus event.”) (emphasis added).

60. The “tools” were depicted by an image: “Winning tools 110 are selected from a pool of five different tools 110, herein exemplified as TNT 710, SPADE 712, PICK 714, LASER 716 and PHASER 718.” Ex. 1026 at ¶ 0056.

**J. Using Special Items To Advance Levels In A Multi-Level Game**

61. It was known in the art to have multi-level games, and to use virtual special items for advancement to another level within the game.

62. For example, one reference from 2003 discussed “computer gaming methods that have discrete levels of play.” Ex. 1026 at ¶ 0011.

63. That reference discussed the awarding of “specific resources that may be used in an attempt to enter bonus event play or for use in the bonus event.” Ex. 1026 at ¶ 0012 (emphasis added). Moreover, those resources may comprise “indicia, representative of corresponding resource items, such as tools, of various types associated with a theme of the bonus event.” Ex. 1026 at ¶ 0012 (emphasis added). Users may then wager the “indicia” in order to be “granted entry into a next level of a plurality of sequential bonus levels of the bonus event.” Ex. 1026 at ¶ 0012 (emphasis added); *see also id.* at ¶ 0016 (“The bonus event may include a plurality of levels.”); *id.* at 0051 (“If desired, the player may purchase one or more tools 110 that may be wagered in play of a subsequent, bonus event level, or in seeking to advance to a first level of the bonus event.”) (emphasis added).

64. That reference also discussed how users could collect a “collect a library of indicia, such as tools” during gameplay. Ex. 1026 at ¶ 0012 (emphasis added).

65. That reference later discussed a particular embodiment called “Tut’s Treasure” where there were multiple levels in “sequentially breaking through walls or sealed doors in tomb passages” in order to gain access to “gain access into Tut’s Tomb.” Ex. 1026 at ¶ 0017. During gameplay, the player would use “tools” in order to advance levels: “During play of the base game, tools may be collected by the player and subsequently used in the bonus event to break down walls and/or doors in the tomb.” Ex. 1026 at ¶ 0017 (emphasis added). That reference went on to explain in detail:

Tut’s Tomb has six bonus levels . . . . In this game, a player’s objective is to obtain tools 110 for breaking down walls or sealed doors within Tut's Tomb and advance sequentially, level by level, toward the final bonus level 706, in which a crypt holding Tut's Treasure is located.

Ex. 1026 at ¶ 0055 (emphasis added).

## **VI. THE '635 PATENT**

### **A. Overview**

66. The '635 Patent is directed to known systems to enhance player engagement. Specifically, the '635 patent discloses systems “for effecting user

experience in an electronic game environment through use of virtual currency or vCoins.” Ex. 1001, Abstract. The ’635 patent recognized that “various forms of game play, as well as the suggestions for implementing those games on a mass communication network, such as through the telephone or Internet,” exist. *Id.*, 4:61-64. But the ’635 patent endeavored to address “a need for improved games of chance, which provide excitement for the player.” *Id.*, 4:65-67. The patent did so using vCoins.

67. “vCoins provide the player with the perception of a big win since the numbers are larger than any corresponding monetary amount.” *Id.*, 46:41-43. The ’635 patent also explains that “by being virtual and corresponding to electronic amounts, they may be altered or varied as desired.” *Id.*, 46:43-45. Further, “[b]y being able to track specific coins, the vCoins technique leads to vastly expanded possibilities.” *Id.*, 46:45-48.

68. The ’635 patent explains: “In a multi-level game, the systems and methods include memory for storing information on game play, the information including input received from the user, information relating to levels within the multi-level game and game display information for output to the user.” *Id.*, Abstract. In addition to memory storing information on game play, the system includes “[a]

processor [that] is coupled to the memory for generating game play information, preferably including game play with virtual money.” *Id.*, Abstract.

69. As to the virtual money, it “is acquired through game play or cash purchase.” *Id.*, Abstract. Also, “[t]he virtual money is convertible into a non-cash good comprising advancement to another level within the game.” *Id.*, Abstract.

**B. The Challenged Claims**

70. I understand that the challenged claims are entitled to an effective filing date of no earlier than September 1, 2004. The ’635 patent has 29 claims, 1 independent claim and 28 dependent claims. Independent system claim 1 is broadly directed to a system that includes 3 generic components:

- (1) memory storing information on game play;
- (2) a processor coupled to the memory generating game play information; and
- (3) memory storing account information.

The processor includes 4 requirements:

- (1) game playing information including game play with virtual money;
- (2) virtual money is acquired through game play and cash purchase;
- (3) virtual money acquired through purchase is subject to a multiplier; and
- (4) conversion of the money into a non-cash good to advance to another level.

**C. The Prosecution History**

71. I understand that the '635 patent issued with limited consideration, with no rejections nor office actions generally. In the Notice of Allowance, the Examiner stated that “the closest prior art ... fails to disclose, suggest or render obvious, in combination with the other claimed limitations, conversion of virtual money into a non-cash good comprising an image to permit advancement to another level within the game.” Ex. 1002, 13.

**VII. LEVEL OF SKILL IN THE ART AND PERSPECTIVE APPLIED IN THIS DECLARATION**

72. I understand that certain issues relating to validity must be judged from the perspective of a person of ordinary skill in the relevant art, as I discussed below.

73. The purported invention of the '635 patent generally relates to well-known systems and methods of incorporating virtual money in games.

74. In determining the level of ordinary skill, I have been asked to consider, for example, the types of problems encountered in the field, prior solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. In my opinion, it would have taken at least three years of experience in the field for a person to become familiar with the problems encountered in the field and the prior and current solutions to those problems.



75. Taking those factors into consideration, a person of ordinary skill in the art at the time of the claimed priority date of the '635 patent would have had at least a bachelor's degree in computer science or computer engineering, with at least three years of experience in game development. Additional experience could substitute for less education, and additional education could likewise substitute for less experience.

76. My opinions do not turn on the precise definition, and the challenged claim would be unpatentable from the perspective of any reasonable POSITA.

77. I believe that I would have qualified as a person of at least ordinary skill in the art as of the earliest claimed September 1, 2004 priority date on the face of the '635 patent. I believe that I have a sufficient level of knowledge, experience, and education to provide an expert opinion in the field of the '635 patent.

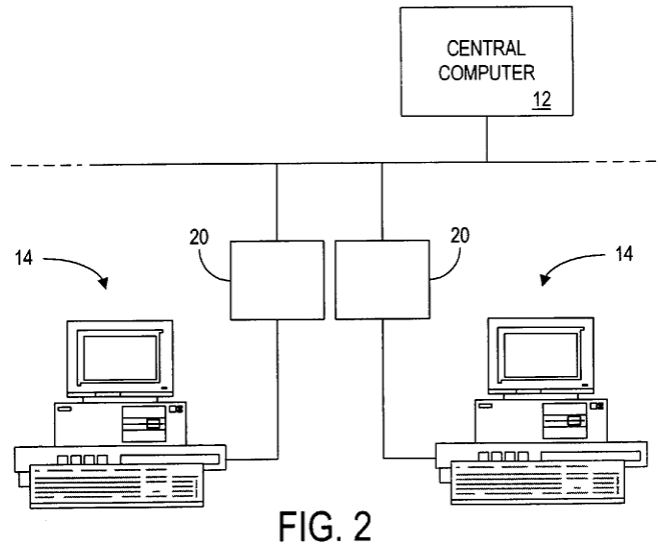
## **VIII. OVERVIEW OF THE PRIOR ART**

### **A. U.S. Patent No. 5,970,143 ("Schneier143") (Ex. 1008)**

78. I understand that U.S. Patent No. 5,970,143 ("Schneier143"), was filed on August 8, 1996 and issued on October 19, 1999. The various embodiments of Schneier143 discloses each limitation in the challenged claims of the '635 patent.

79. In my opinion, Schneier143 discloses a system that "enables computer generated game tournaments in which players play the games on game computers

and compete against each other by submitting the outcomes for those tournament games to the central computer, which certifies the outcomes and rates and ranks the players.” Ex. 1008 at 1:25-30. Schneier<sup>143</sup> depicts “game computers 14 may communicate with the central computer 12 via a modem 20.” *Id.*, 11:56-58.



Schneier<sup>143</sup> further explains that “each game computer 14 includes game software 15 which resides in memory generally identified by the reference numeral 23.” *Id.*, 10:35-37.

80. Schneier<sup>143</sup> discloses that “game programs generate games that are typically segregated into various levels, where the player advances from level to level as the game proceeds.” Ex. 1008 at 24:43-45. These games also provide “‘pay-per-use’ in the home video game environment, where any game computer may be turned into a video game arcade machine by metering usage of the game computer

and/or game programs that run on the game computer. Players simply pay per game, or for play over a specified period of time in accordance with different pricing protocols.” Ex. 1008 at 1:40-45. One such metering protocol disclosed by Schneier143 is “credit requests to enable arcade-type play.” Ex. 1008 at 61:54. Specifically, in my opinion, Schneier143 discloses “[i]n an arcade-type embodiment, the player purchases ‘credits’ to enable game play. This enables players to call the central computer 12 and obtain codes for a specified number of game plays, as in an arcade environment.” Ex. 1008 at 62:50-53. Schneier143 discloses that “[a] purchase of ten credits may cost \$0.50 each while a purchase of twenty credits may cost \$0.30 each.” Ex. 1008 at 63:33-34. Such game credits can also be acquired through game play: “The number of credits available may also be incremented after achieving a certain level of performance in the game.” Ex. 1008 at 63:23-25.

81. Schneier143 also discloses how game credits can be used to advance levels in a game: “A player might be charged one credit to explore any of the first ten levels of a game, while any of the additional five bonus levels could be explored at a cost of one credit each.” Ex. 1008 at 63:13-16. Schneier143 also discloses how game credits can be used to obtain special items to advance levels: “while exploring a ten-level dungeon, the player could be charged an additional credit for the use of a

special weapon, access to a map of the dungeon, or hints on avoiding traps.” Ex. 1008 at 63:16-19.

82. Schneier<sup>143</sup> discloses that running out of credits limits the user from continuing game play: “Each play results in the credit amount being decremented in the meter 502. When the purchased credit amount is exhausted, if the player desires to continue to play, he must purchase more credits from the central computer 12 via the Authorization from Central Computer protocol.” Ex. 1008 at 62:67-63:5; *see also* 51:20-25 (“When the Limit-- Time or Limit-- Cost for metered usage is reached, the meter 502 disables operation of the game computer 14 by no longer providing the at least one output parameter crucial to the Insecure Software Component 708 of the operating system on the game computer 14 the next time it is required”).

**B. U.S. Patent Pub. No. 2003/0078102 (“Okita”) (Ex. 1009)**

83. I understand that U.S. Patent Pub. No. 2003/0078102 (“Okita”), was filed on October 9, 2002 and published on April 24, 2003. To the extent that *virtual money* excludes the credits of Schneier<sup>143</sup>, Okita discloses this limitation.

84. In my opinion, Okita teaches a “virtual money conversion unit 161n that performs conversion between virtual money and prescribed pseudo-values.” Ex. 1009, Abstract. Okita explains that pseudo-values “refer[] to the player’s performance results in the game, and these points or results have values during the

game.” *Id.*, [0004]. Okita further explains that with “pseudo-values (earned points) earned via a game protagonist, the player can buy supplies, items or the like during the game.” Although pseudo-values “have meaning only within the game space in the time duration from a time a player (or players) begins to a time player ends playing the game,” Okita teaches converting the pseudo-values to virtual money that will be stored on a management server and will be accessible by other games. *Id.*, [0005]. Because the pseudo-values can be exchanged for virtual money that can be used in other tournaments, arcades, or the like, “a game can be provided that generates tension for the player due to the fact that the virtual money is earned or is confiscated based on the game results.” Ex. 1009 at ¶[0009].

## **IX. CLAIM CONSTRUCTION**

85. I have applied the plain meaning of the terms and phrases in the claims in my analysis, as a POSITA would have understood those terms and phrases at the relevant time (around 2004). I understand that the Board will construe the claims using the same claim construction standard that would be used in district courts. My declaration will establish that the prior art meets each of the claim limitations under any reasonable construction. I have not been asked to consider any express constructions.

**X. GROUND 1: SCHNEIER143 RENDERS OBVIOUS THE CHALLENGED CLAIMS**

86. The various embodiments of Schneier143 discloses each limitation in the challenged claims of the '635 patent. A POSITA would have combined those embodiments resulting in a system that renders obvious each limitation of the challenged claims.

87. Schneier143 presented these features as options in implementing its system. See, e.g., Ex. 1008 at 14:28-33 (“For typical scored games, execution of the game software 15 by the game computer 14 results in an outcome representing the player's score and, optionally, additional game related information such as the number of levels attained, amount of time spent at each level, number of lives lost, number of enemies eliminated and the like.”), 14:33-34 (“A game may also have multiple outcomes associated with it.”); 46:27-33 (“The meter 502 can be configured as part of the internal structure of the game computer 14...Alternatively, the meter 502 can be simply be a separate box that communicates with the game computer 14 via data cable.”). Accordingly, a POSITA implementing would have motivated to combine the various features of these embodiments together.

**A. Independent Claim 1**

- 1. Preamble:** *“A system for effecting user experience on a user communication device in a multi-level electronic game environment comprising:”*

88. In my opinion, to the extent limiting, Schneier143 discloses the preamble. As depicted in Figure 2, Schneier143 discloses a system that includes a “central computer 12” as well as “game computers 14.” Ex. 1008 at 11:56-58. Schneier143 discloses *a user communication device* by explaining that the “game computer” is “intended to include personal computers (‘PCS’), personal digital assistants, coin-operated arcade video gaming machines, television units coupled to game units (e.g., game consoles such as Nintendo, Sega, etc.) and portable game devices (e.g., GAME BOY, GAME GEAR, NOMAD and the like).” *Id.*, 10:13-20. Schneier143 discloses *a system for effecting user experience* on such a *user communication device* in that Schneier143 discloses “[t]he practice of playing games on the game computer 14.” Ex. 1008 at 10:23-25. Specifically, Schneier143 discloses a “system is principally comprised of a central computer 12 associated with a central authority, and a plurality of game computers 14” on which supports such game playing. *Id.*, 10:10-13.

89. Schneier143 discloses that the game play is segregated into various levels (*in a multi-level electronic game environment*). “Since game programs

generate games that are typically segregated into various levels, where the player advances from level to level as the game proceeds, this ‘code’ may be used to instruct the game software 15 to continue from any given point.” *Id.*, 24:43-47. In one example of a *multi-level electronic game environment*, Schneier<sup>143</sup> discloses: “In MORTAL KOMBAT, for example, the computer opponent for the first level fight is relatively weak. As players win fights and proceed to higher levels, the opponents become increasingly powerful.” *Id.*, 42:59-62; *see also* 13:41-43, 14:40-45, 34:23-29, 34:29-32. Schneier<sup>143</sup> goes on to explain how game credits can be used to advance levels *in a multi-level electronic game environment*. *Id.*, 63:12-23 (“Extra credits can be required to complete restricted stages of a game. A player might be charged one credit to explore any of the first ten levels of a game, while any of the additional five bonus levels could be explored at a cost of one credit each.”).

2. [1.a]: “*memory storing information on game play, the information including input received from the user, information relating to levels within the multi-level game and game display information for output to the user,*”

90. In my opinion, Schneier<sup>143</sup> discloses this limitation. Schneier<sup>143</sup> discloses that each game computer includes memory that stores game programs (*memory storing information on game play*). Ex. 1008 at 7:1-4 (“each game computer includes associated **memory** and a processor for executing programs from its associated memory”), 10:35-37 (“each game computer 14 includes game software



15 which resides in memory generally identified by the reference numeral 23”), 10:37-42 (“The **memory** 23 includes read-write memory RAM, read-only memory ROM, and any non-volatile data source of programs associated with the game computer 14, such as a game cartridge, hard-disk, CD-ROM, PCMCIA card or special flash ROM chip.”), 12:51-52, Fig. 4a. Schneier<sup>143</sup> explains that “[t]he term ‘associated memory’ is intended to include the internal read only memory ROM and read-write memory RAM of the game computer, as well as external devices such as hard disk drives, CD-ROM drives, floppy disk drives, game cartridges and the like.” *Id.*, 7:4-9; *see also* 12:35-38, 12:38-42. The central computer also “includes an associated memory, a processor for executing programs from the central computer associated memory.” *Id.*, 7:50-53.

91. Schneier<sup>143</sup> discloses that the information stored on memory includes user input from input control device 17 (*the information including input received from the user*). Schneier<sup>143</sup> discloses “[t]he game computer may also have an associated input control device 17, such as a joystick (shown) as is well known in the art.” Ex. 1008 at 10.:44-46. Schneier<sup>143</sup> further explains that “[t]he input/output device 17 may comprise multiple joysticks or controls for players to play against each other.” *Id.*, 10.:44-46. A *user* provides *input* through the use of input control device 17, such as a keyboard or joystick. For example, Schneier<sup>143</sup> explains that

for an illustrative golfing game, “[a] human figure is superimposed on this background, and swings a golf club in response to player inputs via a keyboard or joystick.” Ex. 1008 at 19:20-28.

92. Schneier<sup>143</sup> discloses that the game program in memory includes information relating to various levels (*information relating to levels within the multi-level game*). As discussed for the preamble, Schneier<sup>143</sup> discloses that “game programs generate games that are typically segregated into various levels, where the player advances from level to level as the game proceeds.” Ex. 1008 at 24:43-47; *see also* Section X.A.1.

93. Schneier<sup>143</sup> discloses that the game programs include information to be displayed on a screen on the game computer to the user (*game display information for output to the user*). Specifically, Schneider discloses that the “game computer” is “intended to include personal computers (‘PCS’), personal digital assistants, coin-operated arcade video gaming machines, television units coupled to game units (e.g., game consoles such as Nintendo, Sega, etc.) and portable game devices (e.g., GAME BOY, GAME GEAR, NOMAD and the like)” —each of which includes a display for outputting information to the user. Ex. 1008 at 10:13-18; *see also* Fig. 2 (display on game computer 14).

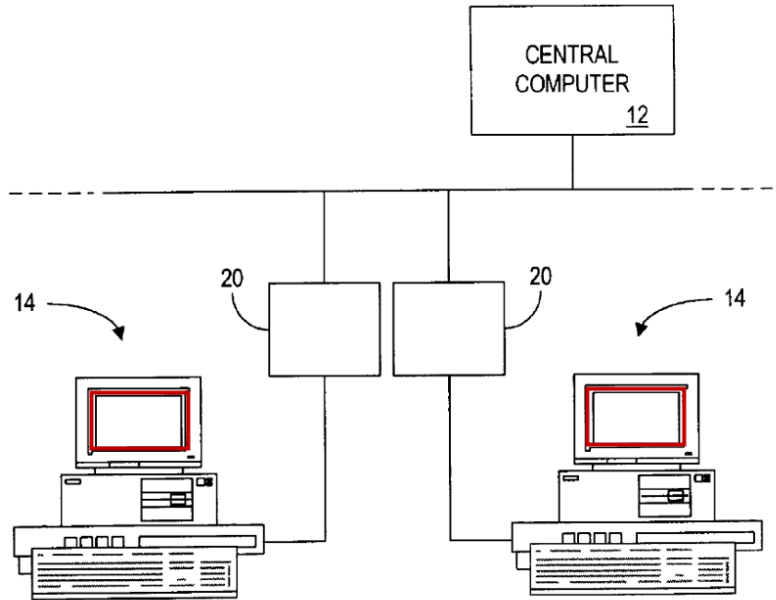


FIG. 2

94. For the illustrative golf game, Schneier143 discloses that “a digital image of a golf game is rendered on the game computer 14.” Ex. 1008 at 19:23-27. Schneier143 explains how “[a]fter the player swings the club, the *display* may depict the new ball location relative to the hole.” *Id.*, 19:38-40. Schneier143 further explains that after the golf ball’s new position is computed, that position “is then communicated back to the CPU 27 of the game computer 14 where it is displayed on screen.” *Id.*, 19:52-55.

3. [1.b]: “a processor coupled to the memory generating game play information,”

95. In my opinion, Schneier143 discloses this limitation. Specifically, Schneier143 discloses that a system that “generally comprises, in one embodiment,

a plurality of game computers, where each game computer includes associated memory and a processor for executing programs from its associated memory.” Ex. 1008 at 7:1-4; *see also* Section X.A.2. Schneier<sup>143</sup> further explains “[t]he game computer contains game software including at least one game program that is executed by the processor to enable a player to play a game on the game computer.” Ex. 1008 at 7:10-13. Schneier<sup>143</sup> also discloses “[t]he central computer includes an associated memory, a processor for executing programs from the central computer associated memory.” Ex. 1008 at 7:50-52.

**4. [1.b.i]:** *“the game play information including game play with virtual money,”*

96. In my opinion, Schneier<sup>143</sup> discloses this limitation. Schneier<sup>143</sup> discloses that the *game play information* generated by the processor includes game play with credits (*game play with virtual money*). I have been asked to consider a position where money is considered “virtual” because it “has no real world counterpart, and no consistently defined relationship with real currency.” Under this interpretation, it is my opinion that Schneier<sup>143</sup> discloses this limitation.

97. The credits of Schneier<sup>143</sup> are alternative currency with no real world counterpart and no consistently defined relationship with real currency. Schneier<sup>143</sup> discloses “‘pay-per-use’ in the home video game environment, where any game computer may be turned into a video game arcade machine by metering usage of the

game computer and/or game programs that run on the game computer.” Ex. 1008 at 1:40-43, 6:50-53 (“It is yet another object of the present invention to provide a pay-per-use system for enabling video arcade type play on home game computers”); *see also* 70:53 (“Credits: Payment units used in a pay-per-use system.”). Schneier<sup>143</sup> uses the credits as alternative currency, that can be used in accordance with different pricing protocols. *Id.*, 1:44-45 (“Players simply pay per game, or for play over a specified period of time in accordance with different pricing protocols.”).

**5. [1.b.ii]: “the virtual money being acquired through:”**

98. In my opinion, Schneier<sup>143</sup> discloses this limitation. As discussed for [1.b.ii.A]-[1.b.ii.B], the credits (*virtual money*) may be acquired by achieving certain levels of performance during the game (*being acquired through...game play*) or purchase (*being acquired through cash purchase*). *See* Sections X.A.5-7.

**6. [1.b.ii.A]: “(1) game play and”**

99. In my opinion, Schneier<sup>143</sup> discloses this limitation. Specifically, Schneier<sup>143</sup> discloses that “[t]he number of credits available may also be incremented after achieving a certain level of performance in the game.” Ex. 1008 at 63:23-25. In one example game, “scoring over a million points in DONKEY KONG might result in an extra credit being added to the available credit balance.”

Ex. 1008 at 63:25-27; *see also* 63:27-29 (“Finding a secret room within a game might add five credits. Hitting a home run may earn ten credits.”).

7. [1.b.ii.B]: “(2) *cash purchase*,”

100. In my opinion, Schneier<sup>143</sup> discloses this limitation. Schneier<sup>143</sup> discloses that “[i]n an arcade-type embodiment, the player purchases ‘credits’ to enable game play.” Ex. 1008 at 62:50-51; *see also* 63:1-5 (“When the purchased credit amount is exhausted, if the player desires to continue to play, he must purchase more credits from the central computer 12 via the Authorization from Central Computer protocol.”). Schneier<sup>143</sup> discloses that credits correspond to a monetary value (*cash purchase*). For example, “[a] *purchase* of ten credits may cost \$0.50 each while a purchase of twenty credits may cost \$0.30 each.” Ex. 1008 at 63:31-34. A POSITA would have understood that in these two examples, one dollar equals 20 credits and three dollars equals 200 credits, respectively.

8. [1.b.iii]: “*the virtual money acquired by cash purchase being subject to a multiplier*,”

101. In my opinion, Schneier<sup>143</sup> discloses this limitation. The ’635 patent explains that “a vCoin will typically be a multiplier times the corresponding numeric monetary value, e.g. one dollar equals 500 vCoins.” Ex. 1001 at 14:15-17. Like the ’635 patent, Schneier<sup>143</sup> discloses that credits correspond to a monetary value (*the virtual money acquired by cash purchase being subject to a multiplier*). For example,

“[a] purchase of ten credits may cost \$0.50 each while a purchase of twenty credits may cost \$0.30 each.” Ex. 1008 at 63:31-34. A POSITA would have understood that in these two examples, one dollar equals 20 credits and three dollars equals 200 credits, respectively.

102. The '635 patent further explains: “The multiplier may be fixed over time and over games, or it may vary based on factors, such as time, game or player status.” Ex. 1001 at 45:64-66. Like the '635 patent, Schneier<sup>143</sup> discloses an example of the multiplier varying based on game or player status. Ex. 1008 at 63:34-37 (“Credit discounts can be offered to select players who have obtained certain certified titles. A five-star MORTAL KOMBAT player may receive a 10% discount on all credits.”).

103. I have been asked to consider a position where a multiplier means that “the amount of virtual currency that may be purchased using larger amounts of real money is disproportionately greater than in comparison to lower real money amounts.” Under this interpretation, Schneier<sup>143</sup> discloses that many more credits can be purchased in comparison to real money amounts (200 credits for \$3.00). Ex. 1008 at 63:31-34.

9. [1.b.iv]: “conversion of the virtual money into a non-cash good comprising an image to permit advancement to another level within the game, and”

104. In my opinion, Schneier<sup>143</sup> discloses this limitation. Schneier<sup>143</sup> discloses *advancement to another level within the game* because “game programs generate games that are typically segregated into various levels, where the player advances from level to level as the game proceeds.” Ex. 1008 at 24:43-47.

105. Schneier<sup>143</sup> discloses that credits can purchase items that allow the player to advance in the game (*conversion of the virtual money into a non-cash good comprising an image to permit advancement to another level within the game*). For example, Schneier<sup>143</sup> discloses “[e]xtra credits can be required to complete restricted stages of a game” or “the player could be charged an additional credit for the use of a special weapon, access to a map of the dungeon, or hints on avoiding traps.” Ex. 1008 at 63:12-19. Schneier<sup>143</sup> also discloses how “[e]ach credit might also buy a certain number of lives.” *Id.*, 63:37-38, 63:8-11.

106. I have been asked to consider a position that this limitation is met when “the virtual money can be spent on bonus items that help the player to win their current level, thereby permitting advancement to another level.” I note that the ’635 patent does not use the term *image* in relation to virtual money, non-cash purchase, or advancement to another level.



107. Under this interpretation, it is my opinion that a POSITA would have understood that the purchase of a non-cash good such as access to restricted portions of the game, game items, or lives, would include an image. Each purchase would need to be reflected in the display of the game through an image, so that the user could use that purchase to advance to another level. For example, the game would necessarily need to display an image indicating “level unlocked” to explore additional levels. Similarly, the game would necessarily need to display a special weapon to allow the player to use it to advance to the next level. The game would also necessarily need to display the map or hints to navigate to an advanced stage of the game, respectively. Further, the game would necessarily need to display the number of lives to continue playing the game to the next level.

**10. [1.c]:** *“memory storing account information which is increased and decreased through the user experience.”*

108. In my opinion, Schneier<sup>143</sup> discloses this limitation. Schneier<sup>143</sup> discloses how the number of credits, reward points, and player ratings that are part of the player’s account information increase and decrease through the player’s game play (*account information which is increased and decreased through the user experience*).

109. Schneier<sup>143</sup> teaches “‘pay-per-use’ in the home video game environment, where any game computer may be turned into a video game arcade

machine by metering usage of the game computer and/or game programs that run on the game computer. Players simply pay per game, or for play over a specified period of time in accordance with different pricing protocols.” Ex. 1008 at 1:40-45. Schneier<sup>143</sup> explains that one such metering protocol is “credit requests to enable arcade-type play” Ex. 1008 at 61:51-55; *see also* 62:50-51 (“In an arcade-type embodiment, the player purchases ‘credits’ to enable game play.”).

Schenier<sup>143</sup> discloses how account information is incremented (*increased*):

The number of credits available may also be *incremented* after achieving a certain level of performance in the game. For example, scoring over a million points in DONKEY KONG might result in an extra credit being *added* to the available credit balance. Finding a secret room within a game might *add* five credits. Hitting a home run may earn ten credits.

Ex. 1008 at 63:23-29. Schneier<sup>143</sup> also discloses how account information is decremented (*decreased*): “Each play results in the credit amount being *decremented* in the meter 502.” Ex. 1008 at 62:67-63:5; *see also* 65:54-56 (“The source meter 502 then decrements the credit balance in its non-volatile *memory* 506 by the corresponding amount requested.”).

110. I have been asked to consider the position that tracking virtual money (here, credits) as part of the account information meets *account information which*

*is increased and decreased through the user experience.* In my opinion, Schneier143 discloses this limitation under this interpretation.

111. Schneier143 further discloses how *account information* in the form of rewards points can be *increased and decreased through the user experience.*

Specifically, Schneier143 explains:

*As a result of game play*, reward points may be *accumulated* in a manner similar to a frequent flyer reward program. In this connection, each game played or each unit of time played generates one or more reward points. Players may also *accumulate* points *for achieving certain results in a game*, such as, for example, one reward point per each million scored points in a particular game.

Ex. 1008 at 65:1-7. This rewards points balance can be *increased* or “increment[ed]” *through the user experience*: “The central computer 12 reads and authenticates the Authenticatable Point Redemption Message APRM and *increments* the player’s reward point balance by the appropriate number.” Ex. 1008 at 65:22-25. Conversely, the rewards points balance can be *decreased* when the user redeems those rewards points: “These reward points may be subsequently utilized to purchase prizes or gifts, which purchases may be made in combination with additional payment if desired.” Ex. 1008 at 65:25-28.

112. Schneier143 further discloses how *account information* in the form of player ratings can be *increased and decreased through the user experience.* Specifically, Schneier143 explains that “[c]omputation of player ratings is

implemented by the rating/ranking module 55 in the central computer 12 using known principles. Alternatively, ratings may be calculated on the player's game computer 14." Ex. 1008 at 41:15-18. Both the central computer 12 and each game computer 14 in Schneier143 have "associated memory." Schneier143 explains how player ratings are *increased and decreased through the user experience*: "After each game, points are **added** to the winner's rating and subtracted from the loser's rating." Ex. 1008 at 41:37-38.

113. Schneier143 discloses that this account information is stored in memory associated with meter 502 (*memory storing account information*). As discussed for [1.b.v], meter 502 can be a separate computer or "part of the internal structure of the game computer 14." Ex. 1008 at 46:27-29. Schneier143 further discloses that "meter 502 includes ... some non-volatile memory 506 such as a hard disk or flash ROM, ROM 508, RAM 510" Ex. 1008 at 46:35-39. Schneier143 explains that credits, reward points, and player ratings (*account information*) is stored in this memory. Ex. 1008 at 62:65-67 ("[T]he meter ... copies the credit amount Limit Cost into its non-volatile memory"); 65:12-14 ("During play, the meter 502 tracks reward points and stores such points in a reward point database in its non-volatile memory 506."); 41:56-60 ("After new ratings are computed, the rating/ranking module directs the central computer 12 to update the player

information database 48 and/or outcome database 50 to reflect the changes.”); 29:47-49 (“[T]he central computer 12 includes a memory 42 containing several relationship databases. These include a ... player information database 48.”).

**B. Dependent Claims 2, 4, 6, 8, 9, 10, 14-16, 17, 18, 21-23, 25, 27, and 29**

**1. Claim 2:** “*wherein the non-cash good is an image to permit advancement to another level within the game.*”

114. In my opinion, Schneier<sup>143</sup> discloses this limitation. Schneier<sup>143</sup> discloses “[e]xtra credits can be required to complete restricted stages of a game” or “the player could be charged an additional credit for the use of a special weapon, access to a map of the dungeon, or hints on avoiding traps.” Ex. 1008 at 63:12-19. Schneier<sup>143</sup> also discloses how “[e]ach credit might also buy a certain number of lives.” *Id.*, 63:37-38, 63:8-11; *see also* Section X.A.9 (Ground 1, Limitation [1.b.iv]).

**2. Claim 4:** “*wherein the virtual money is further acquired by non-cash purchase.*”

115. In my opinion, Schneier<sup>143</sup> discloses this limitation. The ’635 patent explains “vCoins may be acquired by purchase, or may be awarded in a non-cash purchase manner such as provided for a credit, an inducement or a promotion.” Ex. 1001 at 14:25-27. The ’635 patent further explains that “amounts obtained from an initial non-cash purchase such as where the vCoins came as a credit or started as

airline miles, may be playable but not exchanged for other forms of goods or services.” Ex. 1001 at 46:30-33.

116. Schneier143 discloses the credits may also be acquired by scoring points in a game or as a bonus or award (*virtual money is further acquired by non-cash purchase*). In one example, Schneier143 explains:

The number of credits available may also be incremented after achieving a certain level of performance in the game. For example, scoring over a million points in DONKEY KONG might result in an extra credit being added to the available credit balance. Finding a secret room within a game might add five credits. Hitting a home run may earn ten credits.

Ex. 1008 at 63:23-29. Schneier143 further discloses that credits may be awarded as a prize for a favorable outcome at a game tournament: “Prizes may also take the form of credits toward future game play, or may represent non-material rewards such as recognition.” Ex. 1008 at 74:15-21.

**3. Claim 6:** “*wherein the non-cash purchase utilizes an inducement.*”

117. In my opinion, Schneier143 discloses this limitation. Schneier143 discloses *the non-cash purchase utilizes an inducement*. For example, Schneier143 discloses that “[e]ach game to be played may decrease the total credit value by a specified amount. *Popular games* may be made to require *two or more ‘credits’ per*

*play.*” Ex. 1008 at 63:6-8. By charging more credits to play popular games, the players are induced to play less popular games.

118. Schneier<sup>143</sup> also discloses that “[g]ames may cost a different number of credits depending upon the difficulty setting. For example, the easiest setting may cost two credits while the most difficult setting may cost one credit per play.” Ex. 1008 at 63:38-41. By charging more on easy settings, the players are induced to play on harder settings.

Schneier<sup>143</sup> also discloses:

As a result of game play, reward points may be accumulated in a manner similar to a frequent flyer reward program. In this connection, each game played or each unit of time played generates one or more reward points. Players may also accumulate points for achieving certain results in a game, such as, for example, one reward point per each million scored points in a particular game.

Ex. 1008 at 65:1-7. Schneier<sup>143</sup> goes on to explain that “[t]hese reward points may be subsequently utilized to purchase prizes or gifts...” Ex. 1008 at 65:25-28. Schneier<sup>143</sup> goes on to disclose that “[p]rizes may also take the form of credits toward future game play....” Ex. 1008 at 74:18-20. By rewarding frequent players with rewards points that can be used to buy prizes, including credits for additional game play, those frequent players are induced to continue playing.

**4. Claim 8:** “*wherein the virtual money is used for advancement to another level in the game.*”

119. In my opinion, Schneier143 discloses this limitation. Schneier143 discloses “[e]xtra credits can be required to complete restricted stages of a game” or “the player could be charged an additional credit for the use of a special weapon, access to a map of the dungeon, or hints on avoiding traps.” Ex. 1008 at 63:12-19. Schneier143 also discloses how “[e]ach credit might also buy a certain number of lives.” *Id.*, 63:37-38, 63:8-11; *see also* Section X.A.9 (Ground 1, Limitation [1.b.iv]).

**5. Claim 9:** “*wherein the multiplier is variable over time.*”

120. In my opinion, Schneier143 discloses this limitation. Schneier143 discloses that *the multiplier is variable over time*. Specifically, Schneier143 discloses that “[t]he number of credits that a player receives *per dollar* may also be *variable*. A purchase of ten credits may cost \$0.50 each while a purchase of twenty credits may cost \$0.30 each.” Ex. 1008 at 63:31-34.

Schneier143 explains that:

As described above, the meter 502 can determine the price per game credit from the data or instructions associated with Software Control Block 706 of the game program 26. The price per game may be stored within the meter's 502 non-volatile memory and can be manipulated with codes from the central computer 12 to *alter or change the pricing*



*structure for particular games via the Updating Cost Information protocol* described above.

Ex. 1008 at 63:45-52. Figure 19 of Schneier143 discloses “a flow chart of an *updating* cost information protocol for the meter.” Ex. 1008 at 9:48-49; *see also* Fig. 19. In a section titled “*Updating Cost* Information (Optional--*Variable Costs*) (FIG. 19),” Schneier143 discloses that “[t]his protocol is used when the meter 502 requires *updated cost information* from the central computer 12 for metered programs 503 that the player is currently using.” Ex. 1008 at 55:66-56:3; *see also* 55:18-20 (“At step 552, the meter 502 runs the *Updating Cost Information* protocol if the *variable cost* option is being used.”); Fig. 17 (“Meter runs updating cost information protocol 552”).

121. Schneier143 also discloses that “[i]n lieu of purchasing one game, each credit may entitle the player to play *for a certain period of time*. The multiplier can change based on dollars spent. For instance, one credit may buy five minutes of play while two credits may buy *twelve minutes* of play.” Ex. 1008 at 63:63:42-45. In addition, the multiplier can change based on time. For instance, the multiplier may be reduced during a period of high demand, while also increased during a period of low demand.

**6. Claim 10:** “*wherein the multiplier is variable based on player status.*”

122. In my opinion, Schneier<sup>143</sup> discloses this limitation. Schneier<sup>143</sup> discloses that *the multiplier is variable based on player status*. Specifically, Schneier<sup>143</sup> discloses that:

The number of *credits that a player receives per dollar* may also be *variable*. A purchase of ten credits may cost \$0.50 each while a purchase of twenty credits may cost \$0.30 each. Credit discounts can be offered to select players who have *obtained certain certified titles*. A five-star MORTAL KOMBAT player may receive a 10% discount on all credits.

Ex. 1008 at 63:31-37.

**7. Claim 14:** “*wherein the game play information further includes a leader board.*”

123. In my opinion, Schneier<sup>143</sup> discloses this limitation. Schneier<sup>143</sup> discloses *game play information further includes a leader board*. Schneier<sup>143</sup> further discloses that:

The central computer 12 may also operate a “*central scoreboard*,” i.e., a database where all certified scores and statistical information on players and teams are maintained. Statistics for a given player may include information on opponents, the time of play, ratings, rankings and the like.

Ex. 1008 at 11:9-13; *see also* 70:11-12 (“Central scoreboard: A centralized database where all certified scores are maintained.”). Schneier<sup>143</sup> further explains that “the central computer 12 generates an updatable database of player scores and statistics, which may be accessed by players through an on-line service, over the telephone or the like. Statistics could include lists of past prize winners, or *lists of the top players* in the current tournament.” Ex. 1008 at 34:52-57. Furthermore, Fig. 10a of Schneier<sup>143</sup> depicts “a flow-chart of an outcome certification sequence in a tournament embodiment.” Ex. 1008 at 34:47-49. Note that “[o]utcomes” include “[a] score, time to completion, and/or any play-related data that was the result of all or part of playing the game” but can alternatively include “all the game data for the entire game, i.e., the entire game is recorded in memory, including all of the player's actions, responses, moves and the like.” Ex. 1008 at 73:64-74:6. During the outcome certification sequence, Schneier<sup>143</sup> explains that “[a]t step 181, the central computer 12 may generate an Authenticated Outcome Confirmation Message AOCM which, when communicated to the game computer 14, can be used by the game software 15 to cause the game computer 14 to display a certified scoreboard with language to the effect that a particular outcome (e.g., score) was certified by the central computer 12.” Ex. 1008 at 35:55-62.

**8. Claim 15:** *“further including a player registration system.”*

124. In my opinion, Schneier143 discloses this limitation. Schneier143 includes a system that implements “a registration process whereby personal information such as his or her name, address, phone number, age, etc., is provided to the central computer 12 and stored in the player information database 48.” Ex. 1008 at 30:20-65.

**9. Claim 16:** *“wherein the player registration is an on line registration system.”*

125. In my opinion, Schneier143 renders obvious this limitation. As discussed in claim 15, Schneier143 includes a system *that implements a registration process*. See Section X.B.8. Schneier143 further teaches that a player communicates with the central computer 12 using the game computer 14 through an on-line connection as shown in Figures 2 and 3. Ex. 1008 at 31:11-21 (“[I]t will be appreciated by persons skilled in the art that messages may be communicated between the game computer 14 itself and the central computer 12 by establishing a direct link or on-line connection as shown in FIGS. 2 and 3.”). Although Schneier143 does not expressly state that these communications include the registration process, a POSITA would have understood that the player registration is necessarily an on-line registration system in order for the player to provide

personal information to the central computer 12 to be stored in the player information database 48.

**10. Claim 17:** “*further including a game play analysis system.*”

126. In my opinion, Schneier<sup>143</sup> discloses this limitation. Schneier<sup>143</sup> discloses “a system for authenticating the outcomes of computer generated games played on game computers, and for certifying those outcomes as being accurately reported and fairly achieved.” Ex. 1008 at 6:62-66. Specifically, Schneier<sup>143</sup> discloses that “[i]n a game of skill, the game has an outcome as a result of game play, where the outcome is defined as the entire set of results of the game, including a score, time to completion, all data relating to the game itself, and any play related data.” Ex. 1008 at 7:16-20. Schneier<sup>143</sup> further explains:

. . . the outcome may be comprised of *all data relating to the game itself* (i.e., data stored in memory that enables the entire game to be recreated). In a golf game, for example, such data may include *each shot that the player takes*, which represents a combination of *parameters* such as *current wind speed, club selected, foot placement, force with which the ball is hit*, etc. If these parameters are stored to a disk as the game proceeds, it is possible to subsequently recreate the entire game by replaying the stored parameters.

Ex. 1008 at 14:17-24. Schneier<sup>143</sup> discloses that one purpose behind the *game play analysis system* is for auditing purposes and to prevent cheating:

The above secure devices are particularly well suited to the storage of game related data for auditing purposes. In a computer golf hole-in-one tournament, for example, it may be desirable to track each swing that a player takes since large prizes for a hole-in-one would attract hackers interested in forging such an event. To prevent such cheating, game parameters (*swing speed, club used, etc.*) would be sent to the secure CPU 302 where they would be encrypted. ... Alternatively, the encrypted *game parameters* could be communicated back to the central computer 14 and stored on the hard drive or copied to a floppy disk (insecure memory). In the event of a claim for a large prize, the player would simply mail in the disk to the managing authority and the encrypted data would be decrypted and *analyzed* by the central computer 12 by recreating the game with such data to determine whether the claimed score was actually achieved.

Ex. 1008 at 18:66-19:20. Schneier<sup>143</sup> goes on to explain that to prevent cheating, “[o]ne technique is to authenticate not only the score of the game but several key characteristics of the game.” Ex. 1008 at 27:55-57. Schneier<sup>143</sup> goes on to provide an example of these characteristics in the context of defeating a dragon in a game, and goes on to explain that non-cheaters “would take a longer amount of time and would likely sustain more damage as a result.” Ex. 1008 at 27:53-63. Hence, these

characteristics (“e.g., number of seconds elapsed and units of damage sustained”) are analyzed by the *game play analysis system*: “. . . the central computer 12 can compare it to known information to determine whether it was within ‘normal’ bounds.” Ex. 1008 at 27:63-28:1.

127. Schneier<sup>143</sup> also discloses “the system provides for players of computer games to obtain a certified ranking and rating without participation in a tournament.” Ex. 1008 at 1:30-32; *see also* 2:48-52 (“Therefore, there exists a need for a system whereby players of such games can register their scores with a central computer that certifies the scores and enables players to receive their ranking/rating with respect to other players on a national or even worldwide scale.”). Schneier<sup>143</sup> goes on to explain that: “Computation of player ratings is implemented by the rating/ranking module 55 in the central computer 12 using known principles. Alternatively, ratings may be calculated on the player's game computer 14. These ratings are dependent upon past player and opponent performance and skill.” Ex. 1008 at 41:15-19. Schneier<sup>143</sup> further explains that:

After each game, points are added to the winner's rating and subtracted from the loser's rating. The number of points won or lost is dependent upon the rating differential. Therefore, defeating a "weaker" player in lieu of a "better" player causes relatively fewer points to be added to

the winner's rating. The present invention provides for generating ratings for players of computer games.

Ex. 1008 at 41:37-43. Finally, “[a]fter new ratings are computed, the rating/ranking module directs the central computer 12 to update the player information database 48 and/or outcome database 50 to reflect the changes.” Ex. 1008 at 41:56-60.

**11. Claim 18:** “*wherein the game play analysis system tracks user specific play.*”

128. In my opinion, Schneier<sup>143</sup> discloses this limitation. Schneier<sup>143</sup> discloses how *the game play analysis system tracks user specific play*. For example, Schneier<sup>143</sup> explains that the system tracks “all data relating to the game itself” and provides examples in the context of a golf game of “each shot that the player takes, which represents a combination of parameters such as current wind speed, club selected, foot placement, force with which the ball is hit.” Ex. 1008 at 14:17-24. Schneier<sup>143</sup> further explains how the system would *track[] user specific play* to prevent cheating, such as “swing speed, club used.” Ex. 1008 at 18:66-19:20. Schneier<sup>143</sup> also discloses how user specific play, such as “number of seconds elapsed and units of damage sustained” is compared to “normal” values to prevent cheating. Ex. 1008 at 27:63-28:1; *see also* 11:12-13 (“Statistics for a given player may include information on opponents, the time of play, ratings, rankings and the like.”); 31:5-7 (“The statistics database 51 may include game ID data in memory



area 51a, player and team data in memory area 51b, and various statistical information in memory area 51c.”); 34:52-55 (“In that case, the central computer 12 generates an updatable database of player scores and statistics, which may be accessed by players through an on-line service, over the telephone or the like.”). Schneier143 discloses how player ratings are calculated depending on the past player and their opponent’s performance and skill. Ex. 1008 at 41:15-60.

**12. Claim 21:** *“further including a game application to be downloaded to a communications device.”*

129. In my opinion, Schneier143 renders obvious this limitation. In the Background, Schneier143 discloses that:

It is also known in the art to remotely control and monitor the use of video game software as disclosed in U.S. Pat. No. 5,497,479 to Hornbuckle. This patent teaches a system whereby rental software is downloaded from a central computer to a remote control module (RCM) which is operably associated with a game computer. The RCM operates to receive rental software packages from the central computer, and to control and verify the use of such software on the game computer.

Ex. 1008 at 4:13-18.

130. A POSITA would have modified the game system of Schneier143 to include the downloadable feature described in the Background section. Figure 2 of

Schneier143 depicts how “the game computers 14 may communicate with the central computer 12 via a modem 20.” Ex. 1008 at 11:56-58.

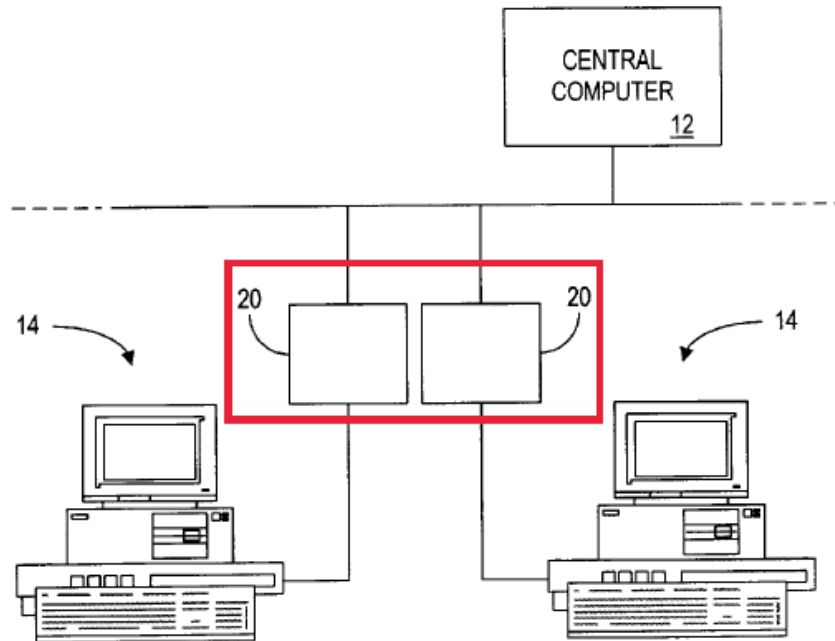


FIG. 2

Ex. 1008 at Fig. 2 (annotated). Schneier143 further explains that:

In this connection, it is anticipated that the central computer 12 may be accessed via a website 22 on the Internet 24 or over an on-line data network including commercial on-line service providers, bulletin board systems and the like, as shown schematically in FIG. 3. The process for establishing an on-line connection to a website on the Internet is well known and need not be described here in detail. It is essentially analogous to establishing a direct on-line link between the game computer 14 and the central computer 12.

Ex. 1008 at 11:64-126. Schneier<sup>143</sup> explains that on-line here includes a wireless connection: “On-line: When a computer is connected to or receiving a signal from another computer. Typical examples include PCS on a local area network, PCS connected to the Internet using a modem and phone line, or cellular phones connected to the central phone switch over a wireless network.” Ex. 1008 at 73:49-54. Thus, a POSITA would have understood that downloading the gaming application from the central computer to the game computers of Schneier<sup>143</sup> would have been conveniently performed through the wireless connection.

**13. Claim 22:** “*wherein the communications device is a wireless device.*”

131. In my opinion, Schneier<sup>143</sup> renders obvious this limitation. In the Background, Schneier<sup>143</sup> discloses that:

It is also known in the art to remotely control and monitor the use of video game software as disclosed in U.S. Pat. No. 5,497,479 to Hornbuckle. This patent teaches a system whereby rental software is downloaded from a central computer to a remote control module (RCM) which is operably associated with a game computer. The RCM operates to receive rental software packages from the central computer, and to control and verify the use of such software on the game computer.

Ex. 1008 at 4:13-18.

132. A POSITA would have modified the game system of Schneier143 to include the downloadable feature described in the Background section. Figure 2 of Schneier143 depicts how “the game computers 14 may communicate with the central computer 12 via a modem 20.” Ex. 1008 at 11:56-58.

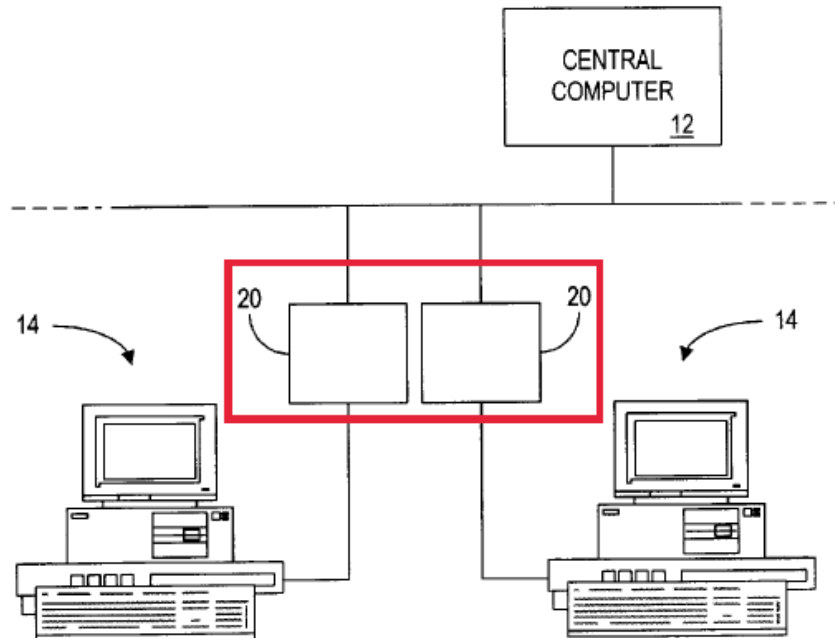


FIG. 2

Ex. 1008 at Fig. 2 (annotated). Schneier143 further explains that:

In this connection, it is anticipated that the central computer 12 may be accessed via a website 22 on the Internet 24 or over an on-line data network including commercial on-line service providers, bulletin board systems and the like, as shown schematically in FIG. 3. The process for establishing an on-line connection to a website on the Internet is well known and need not be described here in detail. It is essentially

analogous to establishing a direct on-line link between the game computer 14 and the central computer 12.

Ex. 1008 at 11:64-126. Schneier<sup>143</sup> explains that on-line here includes a wireless connection: “On-line: When a computer is connected to or receiving a signal from another computer. Typical examples include PCS on a local area network, PCS connected to the Internet using a modem and phone line, or cellular phones connected to the central phone switch over a wireless network.” Ex. 1008 at 73:49-54. Thus, a POSITA would have understood that downloading the gaming application from the central computer to the game computers of Schneier<sup>143</sup> would have been conveniently performed through the wireless connection.

**14. Claim 23:** “*wherein the wireless device is a hand-held wireless device including a display.*”

133. In my opinion, Schneier<sup>143</sup> discloses this limitation. Schneier<sup>143</sup> discloses that the game computer (*wireless device includes a hand-held wireless device including a display*) may “include personal computers (‘PCS’), personal digital assistants, coin-operated arcade video gaming machines, television units coupled to game units (e.g., game consoles such as Nintendo, Sega, etc.) and portable game devices (e.g., GAME BOY, GAME GEAR, NOMAD and the like).” Ex. 1008 at 10:10-23. A POSITA would have understood that these wireless hand-held devices has a display to play the game.

**15. Claim 25:** “*wherein the virtual money is not cashable.*”

134. In my opinion, Schneier<sup>143</sup> renders obvious this limitation. Schneier<sup>143</sup> discloses that credits can be purchased (*see* Section X.A.7), but does not explicitly state that the credits cannot be exchanged back to cash. A POSITA would have found it obvious to implement the Schneier<sup>143</sup> gaming system so that the credits (*virtual money*) would *not be cashable*. Schneier<sup>143</sup> discloses adding protection, such as a player identification code, “against substitution of players,” so that a player does not “produce more favorable outcome.” Ex. 1008 at 3:3-19. Preventing players from cashing credits would further ensure that the player is not cheating the system for cash.

**16. Claim 27:** “*wherein the virtual money is awarded as a bonus.*”

135. In my opinion, Schneier<sup>143</sup> discloses this limitation. Schneier<sup>143</sup> explains “vCoins may be acquired by purchase, or may be awarded in a ***non-cash purchase*** manner such as provided for a credit, an inducement or a promotion. A ***bonusing*** feature may include a vBonus, such as where ***a certain amount of vCoins are awarded, either as a result of game play or merely randomly***. The vCoins may be traded for cash or other forms of games, prizes or non-cash goods or services.” Ex. 1008 at 14:30-38.

136. Schneier143 discloses *the non-cash purchase is a bonus*. Specifically, Schneier143 discloses that credits can be awarded to the player as a result of game play based on achieving a certain level of performance in the game. Ex. 1008 at 63:23-29. Schneier143 also discloses that rewards points can be awarded to the player as a result of game play based on achieving certain results in the game, Ex. 1008 at 65:1-7, and those rewards points can in turn be used to purchase credits toward future game play, Ex. 1008 at 65:1-7. Schneier143 further discloses:

. . . “instant prizes” could be awarded to players based upon exceeding some predetermined threshold level (e.g., a player scoring over a million points for any MORTAL KOMBAT game receives a \$50 instant prize). This prize could be implemented, for example, in the form of a \$50 credit to the player’s credit card. In a golf game embodiment, an instant prize can be offered for a hole-in-one on each hole, supplementing a normal tournament prize structure for the lowest score.

Ex. 1008 at 36:35-43. Schneier143 also explains:

Instant prize: A prize which is earned for achieving a result without any consideration of what may be taking place in other related games or with other contestants. A player in a golf tournament might be eligible to win \$5,000 for hitting a hole-in-one on a certain hole without consideration to his or her ranking in the overall tournament.

Ex. 1008 at 72:61-67. Schneier143 explains that “[p]rizes may also take the form of *credits toward future game play*, or may represent non-material rewards such as recognition.” Ex. 1008 at 74:15-21.

**17. Claim 29:** “*wherein the virtual money is tracked.*”

137. In my opinion, Schneier143 discloses this limitation. The system tracks the “total credit value” and decreases that value by a specified amount for each game to be played. *See* Ex. 1008 at 62:50-63:52.

**XI. OPINIONS ON GROUND 2: SCHNEIER143 IN VIEW OF OKITA  
RENDERS OBVIOUS THE CHALLENGED CLAIMS**

**A. A POSITA Would Have Been Motivated to Combine**

138. In my opinion, a POSITA would have been motivated to combine the teachings of Schneier143 and Okita. Specifically, a POSITA would have recognized that the virtual money conversion functionality taught by Okita would have improved the tournament or arcade-style games of Schneier143 by enhancing the user experience and promoting player engagement.

139. First, as Okita itself teaches, the virtual money conversion functionality enhances the user experience by creating “feelings of realism and tension when the game is played.” Ex. 1009 at ¶[0006]. Okita explains that using pseudo-values (such as Schneier143’s credits) “can be used only within the game space in which they are earned in the limited time period, and pseudo-values earned in the game cannot be exchanged with other items having value that can be used outside the game space.” Ex. 1009 at ¶[0005]. Because the pseudo-values can be exchanged for virtual money that can be used in other tournaments, arcades, or the like, “a game can be provided



that generates tension for the player due to the fact that the virtual money is earned or is confiscated based on the game results.” Ex. 1009 at ¶[0009].

140. Second, a POSITA would have understood that virtual money that could be used across multiple game spaces, and not limited to a single game space, would have encouraged players to engage in more game play. Rewards programs are a routine feature of games because players are encouraged to play more to accumulate points or other pseudo-values to exchange for prizes or other items. The virtual money conversion functionality would have opened up more game play options and more items to purchase.

**B. A POSITA Would have Had a Reasonable Expectation of Success**

141. In my opinion, a POSITA would have been able to implement the virtual money conversion functionality of Okita into the game system of Schneier143 with a reasonable expectation of success.

142. First, the systems of Schneier143 and Okita have substantially similar structures and functions. Both have a central server (“central computer” in Schneier143 and “arcade-based server” in Okita) and gaming terminals (“game computers” in Schneier143 and “clients” in Okita). Importantly, the credits of Schneier143 serve the same function as the pseudo-values of Okita. A POSITA would understand that the functionality could have been implemented by connecting

the central computer of Schneier143 to a server that includes the same functionality of the management server of Okita. *See* Fig. 8.

143. Second, it would have involved a combination of known technologies (servers and clients) according to known methods (convert, transmit, and store) to yield the predictable result of a server that stores information from multiples sources.

**C. Independent Claim 1**

144. As I discuss above in Ground 1, Schneier143 alone or in view of the knowledge of a POSITA renders obvious each and every limitation of claim 1. *See* Section X.A. (Ground 1, Claim 1). To the extent that virtual money and its related limitations are not taught by Schneier143, a POSITA would have found it obvious to modify Schneier143 to include these features as taught by Okita.

145. Okita discloses converting pseudo-values (such as earned points) into virtual money (virtual money). Okita explains that pseudo-values “refer[] to the player’s performance results in the game, and these points or results have values during the game.” Ex. 1009 at ¶[0004]. Okita further explains that “pseudo-values (earned points) earned via a game protagonist, the player can buy supplies, items or the like during the game.” Although pseudo-values “have meaning only within the game space in the time duration from a time a player (or players) begins to a time player ends playing the game” (Ex. 1009 at ¶[0005]), Okita teaches converting the

pseudo-values to virtual money that will be stored on a management server and will be accessible by other games.

146. Specifically, Okita teaches a “virtual money conversion unit 161n that performs conversion between virtual money and prescribed pseudo-values.” Ex. 1009, Abstract. In my opinion, a POSITA would have recognized that including game play with virtual money functionality taught by Okita would have improved the tournament or arcade-style games of Schneier<sup>143</sup> by enhancing the user experience and promoting player engagement.

1. [1.b.i]: “*game play information with including game play with virtual money,*”

147. In my opinion, Schneier<sup>143</sup> in view of Okita renders obvious this limitation. Okita discloses that the clients (in the combination, the game computers of Schneier<sup>143</sup>) include game play information, including a game fee settlement unit and game result integration unit, that allow game play with virtual money (*game play information including game play virtual money*) by allowing a player to use virtual money earned in one game space across multiple game spaces. Okita discloses that game fee settlement unit determines the amount of virtual money needed to play a game:

The game fee settlement unit 161o converts the game fee to be paid each time the game is executed by the game execution unit 161A into a prescribed

amount of virtual money using the pseudo-values conversion unit 161n, subtracts the amount of virtual money obtained as a result of the conversion and representing the game fee required for the player to join a game from the current amount of virtual money possessed by the player, which is stored in the player information storage unit 371 of the management server device 3, and updates the player information stored in the player information storage unit 371.

Ex. 1009 at ¶[0073]; *see also id.* (“The game fee here is the fee that is virtually paid within the game space using virtual money when the player plays a game, and may be considered, for example, a facility fee for using the facility where the player plays the virtual game.”).

148. Similarly, Okita teaches that game result integration unit determines the amount of virtual money earned as a result of game play:

The game result integration unit 161p converts the amount of increase or decrease in counters represented by points (pseudo-values) that occurs each time the game is executed by the game execution unit 161A into virtual money using the pseudo-values conversion unit 161n, performs addition or subtraction of the amount of increase or decrease in the counters represented by points that occurred during the game played by the player, now represented in the form of virtual money, to or from the amount of the player's current virtual money stored prior to the commencement of the game in the player information storage means 371, and updates the player information stored in the player information storage unit 371 accordingly.

Ex. 1009 at ¶[0074].

149. A POSITA would have recognized that including game play with virtual money functionality taught by Okita would have improved the tournament or arcade-style games of Schneier<sup>143</sup> by enhancing the user experience and promoting player engagement.

2. [1.b.ii]: “*the virtual money being acquired through (1) game play and (2) cash purchase,*”

150. In my opinion, Schneier<sup>143</sup> in view of Okita renders obvious this limitation. Okita discloses that the virtual money can be acquired by playing the game (*virtual money being acquired through ... game play*). For example, Okita explains:

The game result integration unit 161<sup>p</sup> converts the amount of increase or decrease in counters represented by points (pseudo-values) that occurs each time the game is executed by the game execution unit 161A into virtual money using the pseudo-values conversion unit 161<sup>n</sup>, performs addition or subtraction of the amount of increase or decrease in the counters represented by points that occurred *during the game played by the player*, now represented in the form of virtual money.

Ex. 1009 at ¶[0074].

151. Okita discloses that the virtual money may also be acquired using real money (*the virtual money being acquired through ... cash purchase*). Okita explains

“the real money conversion unit 161*m* converts the additional inserted coins into virtual money.” Ex. 1009 at ¶[0129].

152. A POSITA would have recognized that including game play with virtual money functionality taught by Okita would have improved the tournament or arcade-style games of Schneier143 by enhancing the user experience and promoting player engagement.

**3. [1.b.iii]:** “*the virtual money acquired by cash purchase being subject to a multiplier,*”

153. In my opinion, Schneier143 in view of Okita renders obvious this limitation. Okita discloses that the real money conversion unit that converts real money to virtual money (*virtual money acquired by cash purchase*) uses a prescribed conversion rate (*being subject to a multiplier*). Ex. 1009 at ¶[0007] (“conversion means that performs conversion between the virtual money and real money using a prescribed conversion rate”).

154. A POSITA would have recognized that the virtual money functionality taught by Okita would have improved the tournament or arcade-style games of Schneier143 by enhancing the user experience and promoting player engagement.

4. [1.b.iv]: “*conversion of the virtual money into non-cash good comprising an image to permit advancement to another level within the game, and*”

155. In my opinion, Schneier143 in view of Okita renders obvious this limitation. Okita discloses that a game conversion result integration unit converts the amount of decrease in pseudo-values (in the combination, credits of Schneier143) to purchase an item to advance to another level within the game so that it is executed into virtual money and subtracted from the player’s current virtual money amount (*conversion of the virtual money into a non-cash good comprising an image, the image to permit advancement to another level within the game*). Okita teaches “a game result integration unit 161 *p* that converts the amount of increase or decrease in pseudo-values that occurs each time the game is executed into virtual money, adds the increase or decrease to or subtracts from the player's current virtual money amount.” Ex. 1009, Abstract. A POSITA would have understood that this conversion occurs when the virtual money is used to “buy supplies, equipment, items or the like during the game.” Ex. 1009 at ¶[0004].

156. As I discuss above in Ground 1 for [1.b.iv], a POSITA would have understood that the purchase of a non-cash good such as access to restricted portions of the game, game items, or lives, would include an image. *See* Section X.A.9.

**D. Dependent Claims 2, 4, 6, 8, 9, 10, 14-16, 17, 18, 21-23, 25, 27, and 29**

157. As I discuss above in Section X.B, Schneier<sup>143</sup> discloses all the additional limitations of dependent claims 2, 4, 6, 8, 9, 10, 14-16, 17, 18, 21-23, 25, 27, and 29.

**XII. SECONDARY CONSIDERATIONS**

158. I am not aware of any secondary considerations of non-obviousness for the claims of the '635 patent. If Patent Owner raises any secondary considerations in its briefing or expert's declaration, I reserve the right to respond to those considerations.

**XIII. CONCLUSION**

159. For all the reasons stated above, it is my opinion that the challenged claims of the '635 patent are unpatentable.

160. This declaration and my opinions are made to the best of my knowledge and understanding, and based on the material available to me at the time of signing this declaration. All statements made herein of my own knowledge are true, and all statements made on information and belief are believed to be true. Further, I am aware that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both,



Declaration of Dwight Crevelt in Support of  
Petition for *Inter Partes* Review USP No. 10,650,635

under 18 U.S.C. § 1001. I declare under penalty of perjury that the foregoing is true  
and correct.

Executed this 25th day of March 2025 in Walnut Grove, Missouri.

A handwritten signature in black ink, appearing to read 'Dwight Crevelt', written over a horizontal line.

Dwight Crevelt

Declaration of Dwight Crevelt in Support of  
Petition for *Inter Partes* Review USP No. 10,650,635

**APPENDIX A**

<b>Exhibit No.</b>	<b>Description</b>
1001	U.S. Patent No. 10,650,635 to Katz, et al. (“the ’635 Patent”)
1002	File History of U.S. Patent No. 10,650,635
1003	Declaration of Dwight Crevelt
1004	Curriculum Vitae of Dwight Crevelt
1008	U.S. Patent No. 5,970,143 to Schneier et al. (“Schneier143”)
1009	U.S. Patent Pub. No. 2003/0078102 to Okita et al. (“Okita”)
1022	Edward Castronova, <i>Virtual Worlds: A First-Hand Account of Market and Society on the Cyberian Frontier</i> , CESifo Working Paper No. 618 (2001)
1023	Edward Castronova, <i>On Virtual Economies</i> , CESifo Working Paper No. 752 (2002)
1024	Richard A. Bartle, <i>Pitfalls of Virtual Property</i> , The Themis Group, (2024)
1025	Elizabeth Kolbert, <i>Pimps and Dragons: How an online world survived a social breakdown</i> 88 (May 28, 2001)
1026	U.S. Patent App. Pub. No. 2003/0114220 to (“McClintic”)