

Fall 2011

Leveraging Slot Gaming Technology to Gain a Competitive Advantage

Philip Zarlengo

University of Nevada, Las Vegas

Follow this and additional works at: <https://digitalscholarship.unlv.edu/thesesdissertations>

 Part of the [Gaming and Casino Operations Management Commons](#), and the [Technology and Innovation Commons](#)

Repository Citation

Zarlengo, Philip, "Leveraging Slot Gaming Technology to Gain a Competitive Advantage" (2011). *UNLV Theses, Dissertations, Professional Papers, and Capstones*. 1168.

<https://digitalscholarship.unlv.edu/thesesdissertations/1168>

This Professional Paper is brought to you for free and open access by Digital Scholarship@UNLV. It has been accepted for inclusion in UNLV Theses, Dissertations, Professional Papers, and Capstones by an authorized administrator of Digital Scholarship@UNLV. For more information, please contact digitalscholarship@unlv.edu.

LEVERAGING SLOT GAMING TECHNOLOGY TO GAIN A COMPETITIVE
ADVANTAGE

by

Philip Zarlengo

Bachelor of Arts in Economics
University of Colorado at Boulder
2007

A professional paper submitted in partial fulfillment
of the requirements for the

Master of Science in Hotel Administration
William F. Harrah College of Hotel Administration

Graduate College
University of Nevada, Las Vegas
December, 2011
Fall 2011

ABSTRACT

The slot gaming industry is being revolutionized by a recent explosion of new technologies that offer a wealth of management opportunities for casinos and offer a more interactive gameplay experience for players. These new technologies increase the excitement of gameplay while extending time on device (TOD) and revenue for the casinos. This preliminary business proposal informs casino managers on the latest in slot technologies and provides a guideline for their successful implementation.

Leveraging Slot Gaming Technology to Gain a Competitive Advantage

by

Philip Zarlengo

Dr. Mehmet Erdem, Committee Chair
Associate Professor of Hotel Management and Technology
University of Nevada, Las Vegas

TABLE OF CONTENTS

ABSTRACT ii

PART ONE 1

 Introduction..... 1

 Purpose..... 1

 Justification..... 1

 Constraints 3

PART TWO 4

LITERATURE REVIEW 4

 Introduction..... 4

 Slots as Entertainment..... 4

 History..... 5

 Entertainment Value 6

 Competitive Advantage 7

 Server Based Gaming 8

 Service Window 9

 Media Manager 10

 Floor Manager..... 12

 Upgrading Legacy Machines 12

 Bonusing 13

 PointPlay..... 15

 Lucky Coin..... 15

 Lucky Seat 16

 Lucky Time 16

 Bonusing Add-Ons..... 17

 iVIEW DM Bonusing 18

 iDeck..... 19

 Player’s Life..... 20

 Community Bonusing 20

 Bally Technologies 20

IGT	21
Atronic	21
WMS	22
Aruze Gaming	22
Slot Tournaments	23
TournMaster	23
Tournament Manager	24
iVIEW DM.....	25
Promotions	26
Machine-Level	26
Kiosks	27
Conclusion to Literature Review	28
PART THREE	30
Introduction.....	30
Preliminary Proposal.....	30
New Casinos	30
Existing Casinos.....	33
Conclusion	34
REFERENCES.....	34

PART ONE

Introduction

The gaming industry has witnessed a revolution in slot gaming technology over the course of the last decade. Casino operators not only have a large selection of slot gaming themes, but they also have an array of new gaming technologies available. With these technologies come new and exciting ways for casino managers to differentiate and customize the gaming experience they offer. The use of these technologies becomes increasingly important as competition is growing in many gaming markets such as Las Vegas. A successful slot manager needs to know how to leverage these technologies in order to gain a competitive advantage over their competition.

Purpose

The purpose of this paper is to analyze the latest innovations in slot gaming technology and to create a preliminary proposal for best implementing these technologies in a large class III casino resort in the United States. This preliminary proposal will allow any slot gaming manager to understand how to leverage new gaming technologies to maximize guest experience and casino revenue.

Justification

Slot machine vendors are continuously releasing new gaming technologies that are intended to increase gameplay excitement and enhance the gaming experience. Slot vendors often make wild claims about their latest products, which they may or may not deliver their claimed functionality. New technologies offer great promise, but their compatibility with existing products and approval from the Gaming Control Board often get overlooked. A casino executive in today's gaming industry needs to know which technologies will have the greatest

positive impact on the gaming experience of their slot patrons. Satisfied casino guests will gamble for longer periods of time, will spend more money, and are more likely to recommend the casino to a friend.

The slot gaming industry has changed dramatically over the past twenty years. Any savvy slot player knows that the average slot machine does not pay out as well as they did ten or twenty years ago (Cooper, 2005). The mega-resorts in cities like Las Vegas and Atlantic City are spending an increasing amount of money on building luxurious properties to lure in customers. These properties often have price tags in the billions. The Cosmopolitan of Las Vegas opened on December 15th, 2010 with a whopping price tag of \$3.9 billion (Garcia, 2010). Casino resorts have always made a large percentage of their revenue from slot machine gaming, and as these properties become more expensive to build there is more pressure on casino executives to pay for the property's construction costs. This is one of the reasons why there has been a dramatic shift in the slot machine gaming industry. The development of new slot technology has been a way for the industry to increase gaming excitement and value for the players, while allowing casinos to keep more money. Slot machines have become less of a gambling device and more of a form of entertainment. The line dividing slot machines from arcade games is becoming increasingly blurred. Many gamers play slot machines solely for the entertainment value and do not expect to win any money (Cooper, 2005).

This shift in the slot gaming industry has added pressure to casino execs to provide the most exciting gameplay available. They need to continuously find new ways to capture the entertainment dollars of their casino guests. Slot vendors have met this demand with a growing array of bonusing technologies, display technologies, larger jackpots, player tracking, and other technologies that provide a customized gaming experience. All of these technologies are

intended to increase the players' experience and their overall level of satisfaction. Not only are casino execs able to increase player satisfaction, but they are able to do it without reducing the hold percentages of their gaming devices. The hold percentage is the amount of money that a slot machine keeps on average for every dollar bet (Bally Gaming, Inc., 2006). A casino manager needs to know what technologies are best received by their patrons and which ones will keep those players coming back for more.

Constraints

This preliminary proposal is limited in discussion to large class III casino resorts located in the United States. This is significant because Americans have different views on slot gaming compared to casino patrons in other countries. A class III gaming license is required for a casino to offer true slot gaming that is powered by a computerized random number generator. Large resorts are typically the only ones that have the capital to invest in the latest in slot gaming technology, while their smaller counterparts typically rely on used and older technologies.

PART TWO

LITERATURE REVIEW

Introduction

The following section will discuss the latest trends for slot gaming in the United States and a discussion of the latest technologies approved in the U.S. These technologies include: server based gaming systems, bonusing applications, display technologies, promotional solutions, and tournament applications. These products will be discussed in relation to how they can add value to the casino floor and provide a competitive advantage for casino operators.

Slots as Entertainment

In recent years the slot industry has experienced significant growth in gaming technology. The industry has slowly shifted from providing babysitter devices for the wives of high roller table game players in the 1940s, to providing a sophisticated and entertaining gaming experience for all adults. In the past twenty years the number of slot gaming devices in the United States has grown five-fold. There are now twice as many electronic gaming devices in the U.S. as there are ATM machines. New gaming laws have allowed casinos to develop in new markets across the country. In 2005, a record 73 million Americans visited one of over 1,200 casinos in the U.S., which is a 40 percent increase in visitation over 2001. These visitation numbers continue to climb despite a recently rocky economy, and more than a quarter of American adults list gambling as their number one entertainment choice. The U.S. gaming industry takes in \$48 billion in revenues each year, 70 percent of which come from slot machines. Americans now spend five times as much on slot machines as they do on movie tickets (Cooper, 2005).

History

The slot manufacturing industry's life cycle is in a state of shakeout as more than 500 new games are released into the U.S. market each year. Often times these machines are only used in casinos for a period of a few months before they are scrapped for newer slot themes and devices. The typical slot machine today can cost around \$15,000 dollars, but can pay for itself in one night if used in a high limit setting. The majority of the U.S. slot gaming market is controlled by a handful of slot manufacturers that lead innovation for the industry. These manufacturers often find their niche in a particular geographical area, where they heavily influence the local industry. For example, slot manufacturer International Gaming Technology (IGT) is headquartered in Reno, NV and they control most of the slot industry in the Nevada market. Their game themes and slot operation systems are widely used and help shape the future of the industry. Many of IGT's recent innovations will be discussed later in this paper, but before this discussion it is important to understand the past and current trends in the slot industry (Green, 2010b).

Mechanical reel slot machines or stepper slots were invented in 1899 and remained widely unchanged until the 1960s. At this point in history, slot machines were not widely considered as legitimate gambling devices. Table game players viewed slot machines as an inferior form of gambling that was used for entertaining wives and girlfriends. In the late 1960s some electronic circuits were added to slot machines and in the 1980s slot machines were computerized and bonus rounds were added. Video technology and top box displays were added to slot machines in the 1990s. This introduced a new era of slot machines with a dramatic change from simple gambling devices to machines that offered a fully interactive experience. Modern slot machines do not make it any easier for casino patrons to win money, but the

gameplay has become much more entertaining. This evolution in slot gaming took place as manufacturers and casino operators looked for ways to increase customers' time on device (TOD). Slot machines operate on the law of averages and casino operators know that the longer a customer plays a machine, the more money the casino will earn in the long run (Cooper, 2005).

Entertainment Value

Therefore, it can be seen how slot machines have evolved from gaming devices to entertainment devices. Most Americans surprisingly do not play slot machines to win money, but play them primarily for entertainment. Gaming researcher Dr. Jeffrey Lohenhart has found that "95 percent of the slot players do not think they are gambling, nor consider themselves gamblers" (Thalden, 2011). This concept of casino patrons viewing slot machines as entertainment devices instead of gambling devices is new to most casino operators. Many casino managers fail to recognize their slot players as entertainment seekers, and simply view them as gamblers. This is a very important differentiation because gamblers and entertainment seeking customers have different sets of needs and expectations. A gambler, such as a Blackjack player, is looking for an opportunity to win money and they are focused on details such as game rules, game payout, and game odds. These individuals take pride in their skill level, and this pride motivates them to challenge the casino with the goal of winning money. When gamblers visit a casino, they have some expectation of winning money or at least of having a good opportunity to win money.

Entertainment seekers who visit casinos have a different perception and a different set of expectations for their casino experience. These individuals are focused primarily on having fun. They visit the casino because they find gambling to be entertaining, and they tend to enjoy other areas of the casino resort such as the bars, nightclubs, and restaurants. These entertainment

seekers are more likely to play slot machines when they are gambling, because slot machines have a very low barrier to entry. There are not any complicated rules, there is no learning curve to play, and they offer immediate gratification in the form of entertainment. Slot managers need to recognize that they are operating an entertainment venue and not simply a casino. This requires them to focus less on gambling details such as slot hold percentage and slot pricing, and to focus more on entertainment aspects such as slot bonusing and slot theme selection. Configuring slot hold percentages and slot pricing are very important aspects of a slot managers' job, but they are not the most effective ways to increase slot revenue. This is because all of their competitors are focused on the same thing and often share very similar configurations. It is important to manage pricing and hold percentages, but it will not provide a substantial competitive advantage over competitors (Thalden, 2011).

Competitive Advantage

Most casino operators want their slot machines to be configured identical to those of their nearby competitors. They are constantly concerned with whether their machines are too tight (don't payout enough) or too loose (pay out too much), and whether their machines are more or less expensive than their competitors. Unfortunately these casino managers are too worried about what their competitors are doing and not focused enough on how they can differentiate the experience they are offering to their guests. For example, if every luxury casino on the Las Vegas Strip offers the same slot machines for the same price and with the same payout percentage, then customers have little variety to choose from and the casinos have no competitive advantage over each other. In this situation the casinos are reliant on their marketing teams and location to bring in guests, but they have another opportunity which is to use slot technology to provide a differentiated entertainment experience (Anonymous, 2011b).

Fortunately slot manufacturers have long recognized the need for product differentiation. As mentioned above, the competition is fierce and slot manufacturing is in a constant state of shakeout. New slot machines and game themes have a small window of time to show profits and many of them do not last longer than a year in production. This increased competition over the last twenty years has motivated slot manufacturers to develop and patent new gaming technologies to give themselves a competitive advantage over the other manufacturers. This technological innovation has led to the development of a variety of slot gaming technologies that include server based gaming systems, bonusing applications, tournament systems, and new promotion solutions (Anderer & Green, 2011).

Server Based Gaming

One of the latest innovation in the slot gaming industry has been server based gaming. Traditional slot machines operated as standalone units similar to an arcade video game. These units could be moved and put in service anywhere on a casino floor that had a power outlet available. They were played with coins, were not networked together and any changes to the machine configuration were manually performed at the machine level. This simple setup was easy to install and maintain, but made it very difficult for casino accountants who had to manually track machine revenue as the coins were counted after every drop. To meet the needs of accountants, slot manufacturers began to introduce the first floor-wide slot gaming systems. These basic systems operated on a simple network that allowed the slot machines to track meters for coin-in on each electronic gaming machine (EGM) throughout the casino floor. These simple networked systems reduced labor costs and made slot operations more efficient. They also led to server based slot gaming systems where virtually any aspect of an EGM can be monitored and

adjusted from a remote computer terminal. This new server based system technology is referred to as G2S or game to system (Anonymous, 2010).

The two leaders in server based slot gaming technology are Bally Technologies and International Gaming Technology (IGT). Each company has an array of server based gaming technologies that provide a customized gaming experience that can easily be adjusted by casino operators. Server based gaming technology has almost limitless potential as it can be combined with a wide variety of applications and systems to support bonusing, digital signage, player reward programs, and much more. This customized gaming experience allows casino operators to differentiate their slot floor and provide casino patrons with a more rewarding experience (Anderer, 2011a; Anonymous, 2010).

Service Window

IGT's G2S gaming systems belong to their sbX lineup. sbX offers a variety of server based gaming applications that interact with a guest through an interactive "service window." The sbX service window is integrated into the primary LCD on a modern slot machine. The service window will slide into view either from the right, left, or top of the gaming screen and offers interactive touch screen functionality. The service window is essentially a form of picture-in-picture. The content of the game theme on the screen is unaffected by the service window which can be opened and closed with a touch of a button. Casino patrons can play their favorite slot machine with the service window visible or tucked away out of site (Anonymous, 2010; www.IGT.com, n.d. p).

The genius of IGT's sbX service window is that it provides an integrated menu system that allows for guest interaction and customization that never existed on older non-G2S gaming systems. The service window is a fully interactive touch screen menu that guests can use to

activate bonus features, view messages or advertisements from the casino, play side games, and manage their casino loyalty account. With the sbX system, EGMs are no longer limited by the hardware that is present within the slot cabinet. Traditional slot cabinets are configured with only one game theme, and guests are required to relocate in order to play a different game theme. IGT's sbX system removes this limitation and each EGM is capable of storing multiple game themes that can be played at multiple denominations. A single EGM can offer literally dozens of gaming configurations through an on screen interactive menu. Casino guests no longer need to change seats to receive a new gaming experience and casino operators are able to maximize TOD which ultimately maximizes revenue for the slot floor (Anonymous, 2010).

Media Manager

The sbX lineup includes IGT's sbX Media Manager which allows casino operators to send a variety of customized information to slot patrons through the EGM's service window and top glass (top video display). It is the ultimate tool for customizing advertisements for each guest. Slot operators can send real-time advertisements to players throughout the casino floor. This functionality is true for both carded and non-carded players. For un-carded players, Media Manager can display generic advertisements for restaurants, entertainment events, hotel rooms, or anything else the casino property wants to advertise. These advertisements can be visible on every slot machine in the casino or only at predetermined locations. They can be scheduled to run at a set time and location or they can be implemented in real-time. For example, if a concert has remaining tickets available for that same night, Media Manager can send out an advertisement in real-time to promote that event. The real-time nature of Media Manager allows the resort to maximize revenue through last minute ads and offers (www.IGT.com, n.d. e).

sbX's Media Manger is also a great tool for providing customized offers for carded casino patrons. If John Doe is a loyal casino customer and he is playing with his casino loyalty card, sbX will recognize his membership account and Media Manager will present him with customized offers through the onscreen service window. For example, if John Doe has historically purchased tickets to special events, Media Manager could offer him tickets to an upcoming boxing fight either for free or at a discount depending on his status level in the loyalty program. These customized offers are highly effective because they are targeting the appropriate clientele with each offer. This customization is a highly efficient form of advertising that is rare in the marketing world and casino operators can easily be implemented for each of their loyalty club members (www.IGT.com, n.d. e).

Media Manger includes IGT's Message Blast application that allows casino managers or hosts to send out personalized messages to their slot customers. This is a highly effective tool for customizing the gaming experience while taking customer service to another level. A host can send a personalized text message to their high limit guest who receives the message when they put their loyalty card into a slot machine (www.IGT.com, n.d. k).

Another great benefit of Media Manager is that its media is customizable due to its Adobe Flash compatibility. A casino's advertising department can produce their own Flash content that is easily uploaded into Media Manger. This form of customization is ideal for luxury casinos that have a strict brand image, and they can change it on-the-fly by uploading new Flash content on the back end of the sbX system. A single slot manager can change advertisements throughout the entire casino without leaving their desk. This functionality is highly efficient because it does not require any changes to be made at the machine level, which prevents costly overtime and reduces EGM down time during updates (Anonymous, 2010).

Floor Manager

IGT's sbX lineup also includes Floor Manager which is the first and only slot management system that allows casino managers to remotely configure their slot floor mix. Casino managers previously had few opportunities to customize their slot floor without spending a large amount of money. They often had to move slot machines simply to change the theme mix for a particular slot section. This is ridiculously inefficient when you consider that each slot machine weighs over 100 pounds and it is very time consuming to get them neatly installed at a new location. If a slot manager wanted to change the theme on a particular slot cabinet they would have to purchase a conversion kit from the manufacturer, and each conversion kit could cost over \$1,000. Not only are traditional conversions expensive, but they are labor intensive too. Various pieces of the slot machine need to be physically changed to provide the appearance and functionality of the new theme. With IGT's Floor Manager all of these headaches and expenses have been eliminated. IGT's sbX slot machines are fully customizable from the back-end of the sbX system. A single slot manager can reconfigure an entire section of slot machines without leaving their desk. Floor Manager not only eliminates a large amount of slot technician labor, but it also provides the slot manager with a bounty of customization opportunities that no previously did not exist. With sbX there is a wealth of opportunities available to maximize guest experience without spending any additional money (www.IGT.com, n.d. d).

Upgrading Legacy Machines

IGT's sbX service window is also compatible with slot machines made by other manufacturers; therefore it can be implemented floor-wide without having to purchase any new EGMs. The latest slot cabinets manufactured by IGT and WMS Gaming have built in sbX compatibility. They can be hooked up to a sbX powered slot floor without any additional

adaptors or systems. All other modern EGMs can be powered by sbX with the use of IGT's brand new Universal Game Adaptor. The Universal Game Adaptor is an open standard based video adaptor that allows any EGM to support IGT's service window technology. This is an incredible product, because the slot industry has struggled with compatibility issues on new technologies. The Universal Game Adaptor works with both G2S and legacy machines from all vendors. It is an easy way for existing casinos to capitalize on G2S technology for a mere \$995 per EGM. This is an incredible opportunity considering that brand new sbX compatible EGMs from IGT cost around \$15,000 each. The first few casinos in the world to use sbX technology invested tens of millions of dollars into their casino infrastructure, but now the service window portion of sbX is available for a much smaller investment (Anonymous, 2011b; Green, 2010b).

IGT sbX's primary competitor in server based gaming is Bally Technologies' iVIEW Networked Floor Solution. Bally's iVIEW Networked Floor Solution has many of the same features described above for IGT's sbX system. It includes the iVIEW Display Manager (DM) which provides an interactive picture-in-picture display similar to sbX's service window. With iVIEW DM casino guests are able to manage their player loyalty account, view customized promotions, watch live TV, and participate in community bonus events. Bally's iVIEW DM is also compatible with all legacy slot machines that have a touch screen. The iVIEW Networked Floor Solution is a proven G2S solution for all casinos, but it lacks the game theme download and configuration capability of IGT's sbX Floor Manager (Anderer, 2011a; Green, 2010a).

Bonusing

As the perception of the slot industry has shifted from gambling to entertainment, slot manufacturers are increasingly looking for new ways to entice players. Modern slot machines do not pay out any more money than they have historically, and they cost more than ever to play.

Casinos resorts are spending more money than ever before to build new properties. This strategy attracts many tourists, but it also carries a hefty price tag that is paid for by casino revenue. As these properties become more expensive, so does the cost of playing slot machines. These large resorts rarely have any EGMs where a customer can bet \$.01 per spin, but rather the minimum bet is typically \$.30 or higher. This trend has driven slot manufacturers to dramatically improve the gameplay and interactivity of their slot machines. Casinos cannot afford to give out more money in jackpots; therefore they need another solution to keep their slot machines busy and to maximize their customers' TOD. Slot manufacturer are providing solutions with an ever increasing amount of bonusing technologies (Cooper, 2005).

With the advent of computerized video reel slot machines, manufacturers were able to ramp up gameplay excitement by utilizing five slot reels instead of three. With five slot reels they are able to dramatically increase the number of winning lines per game theme, which increases the games hit frequency. Hit frequency is how often the machine lands on a winning reel combination and pays out money (Bally Gaming, Inc., 2006). The genius of the five reel configuration is that slot manufacturers are able to increase hit frequency without impacting the game's hold percentage (Cooper, 2005). Slot players experience more gaming excitement and arousal, but have no better chance of winning money than they did with a traditional three reel machine. This technology increases player satisfaction and extends their TOD (Griffiths, 1999). To further increase customer excitement during gameplay, slot vendors are increasingly using clever forms of bonusing to increase gameplay excitement without affecting the game's hold percentage (Green, 2011a).

PointPlay

IGT's sbX system has a wide array of bonusing applications that can be used to develop player loyalty, increase player satisfaction, and extend player TOD. IGT's PointPlay application is one of the most common forms of bonusing used in casinos today. It rewards players with membership points when they play with their casino loyalty card. PointPlay motivates players to join the casino's loyalty program and to extend their TOD while playing. The points that are earned can instantly be redeemed for free slot play, cash, or other loyalty club rewards. The PointPlay meter on the service window motivates players to continue their gaming experience to receive awards (www.IGT.com, n.d. n). IGT's latest version of PointPlay is Point Pursuit, where the guest is striving to achieve incremental point goals. Once a point goal is reached the guest receives an extra bonus in the form of cash, membership points, or Xtra Credit. Xtra Credit can only be redeemed for free slot play, thus increasing TOD by preventing guests from cashing out their bonus and walking out the door. It can also be given out to loyalty club members as a promotion or loyalty gift (www.IGT.com, n.d. o; www.IGT.com, n.d. q).

Lucky Coin

Recently, IGT has released many more creative forms of bonusing that can be used on their sbX system, such as their Lucky line of bonusing applications. First of all, Lucky Coin is a bonusing application where slot players are randomly rewarded free slot play that is powered by a pool-based mystery jackpot. Lucky Coin is typically used only for carded players who contribute to the mystery bonus pool with each bet. Once the bonus pool reaches a predetermined amount, the bonus is randomly awarded in the form of Xtra Credit to one lucky slot player. This bonus drives floor-wide excitement as the anticipation grows until someone wins. It also motivates customers to join the casino's player loyalty program so that they can be

part of the excitement. The Lucky line of bonusing applications can be used floor-wide or at select locations (www.IGT.com, n.d. h). Personal Lucky Coin is a variation of Lucky Coin that builds a mystery jackpot pool for each carded player. The player does not know what the jackpot limit is or when it will hit, but the application will maintain the jackpot for that player across multiple gameplay sessions (www.IGT.com, n.d. m).

Lucky Seat

Lucky Seat Slots is the second form of the Lucky bonus applications. With Lucky Seat Slots a manager can choose a predetermined time period and the percentage of carded players who are eligible for a mystery jackpot. By choosing a time period, a casino can drive demand during their slower hours of gameplay. They can also choose what tiers of carded players are eligible for the mystery jackpot; for example it can be offered to everyone or only high limit players. The Lucky bonus applications triggers the jackpot through the sbX service window and regular gameplay is unaffected (www.IGT.com, n.d. i).

Lucky Time

The third form of IGT's Lucky bonusing is Lucky Time, which can be implemented for all slot players or only carded players. Lucky Time is very similar to Lucky Seat, but can be limited to a particular section or even a single game within the casino. This allows managers to drive gameplay on poorly performing EGMs while driving excitement with a random jackpot that will hit within a predetermined time period. All of IGT's Lucky bonusing applications can be combined with other IGT bonusing solutions to provide a customized solution to meet the needs of a specific casino (www.IGT.com, n.d. j).

For each of these Lucky bonusing applications, IGT has a wide variety of bonus games and add-ons that can be layered for an additional level of excitement. These fun little bonus

games are played within the EGM's service window. A slot manager could implement one of these bonus games to trigger when a player wins the Lucky Coin, Lucky Seat, or Lucky Time bonuses. Instead of simply giving the player their prize, the player gets to interact with a short bonus game to determine their final prize. With this technology, IGT is essentially layering their bonus applications to add increased excitement. These bonus games can also be implemented floor-wide so that every active carded player receives a surprise bonus game in their service window. Floor-wide bonuses can be issued for each or can be played in randomly formed teams where only the winning team receiving a prize (www.IGT.com, n.d. a).

Bonusing Add-Ons

A quick overview of other IGT bonusing add-ons includes Celebration Prizes, where a secondary bonus is triggered for those players who do not qualify for the first community bonus. For example, if a team of slot players loses their community bonus event, a second Celebration Prize bonus could be initiated to award them a smaller dollar amount (www.IGT.com, n.d. b). Another add-on for IGT bonusing is Gift Points, where slot patrons earn a second form of points aside from their loyalty club points. This second form of points is called Gift Points and it provides casino operators with improved flexibility for rewarding their patrons with small prizes (www.IGT.com, n.d. c) A third add-on for IGT bonusing is their Multiple Jackpot Time, which automatically multiplies a predetermined bonus by up to nine times the original payout amount. This is another way to unexpectedly reward loyal players with a little extra cash or Xtra Credit. It is can be configured to drive gameplay during slower business hours (www.IGT.com, n.d. l). The fourth and final add-on for IGT bonusing is the IGT Virtual Drawing Manager, which rewards carded slot players with entries for a grand prize drawing at the end of a predetermined time period (www.IGT.com, n.d. g). IGT continues to be the industry leader in bonusing

technologies, which offer virtually endless opportunities for casino managers to create their own unique bonusing events. IGT's bonusing solutions are intended to have turn-key implementation, but they can also be customized to fit any casino's brand image (www.IGT.com, n.d. a).

iVIEW DM Bonusing

Another industry leader, Bally Technologies, has its own assortment of bonusing solutions to elevate gameplay excitement and increase TOD. Their server based iVIEW DM picture-in-picture technology opens up the doors to a wealth of bonus capabilities for all slot machines that have a touch screen. The iVIEW DM can feature bonusing games that are entirely separate from the slot machine's main theme. Therefore slot managers have the capability to enhance any slot machine's standard gameplay with additional bonusing provided by Bally's Elite Bonusing Suite. Casino operators have the flexibility to choose where and when they want a bonus to run as well as what players are eligible and what the reward will be. The Elite Bonusing Suite takes into account the player's loyalty club standing as well as their past and present gaming spend. This allows slot managers to fine tune their bonusing methods to target the proper clientele. The best part is that Bally's Elite Bonusing Suite can easily be programmed with preset criteria including player type, time and date, and the bonus will run automatically. Unlike IGT bonusing solutions, Bally's Elite Bonusing Suite allows operators to automatically reward guests who are losing money. For example, a slot manager can have a preconfigured bonus setup to automatically run for all players who lose \$100 in an hour or less. The guests who receive that bonus are much more likely to continue playing and are much more likely to revisit the casino. An experienced casino manager knows that it is important for guests to leave

the casino on a positive note, and the Elite Bonusing Suite makes this possible for any level of slot player (Anderer, 2011a).

iDeck

Another great feature of Bally's bonusing capability involves their new iDeck button panel technology. The iDeck is an industry changing technology that replaces the individual buttons on a slot machine with a beautiful high-resolution touch screen LCD display. The iDeck can be programmed for any game theme, therefore it never needs to be changed out and it can be fully incorporated with Bally's bonus applications. To capitalize on this bonus capability, Bally has designed some very unique bonuses that will delight even the most seasoned slot player. On their new Betty Boop's Fortune Teller slot machine, the player experiences a palm scan bonus where they place their palm on the iDeck touch screen and Betty Boop "reads their palm" to determine their reward (Anderer, 2011b).

Another new Bally slot theme to feature an innovative iDeck bonus is the new Grease game, inspired by the 1978 musical film. During the Dance Off bonus players use their fingers to "dance" on the iDeck touch screen to earn rewards. These bonuses offer a level of interactivity that is not found with any other slot manufacturer. Bally has successfully broken the mold of generic bonus events where the player wins free spins or gets to pick a mystery prize. The slot industry of the future is focused on providing an exciting entertainment experience and slot manufacturers like Bally are finding new ways to blur the line between video gaming and slot gaming. Now more so than ever, slot floors are becoming like arcades for adults (Anderer, 2011c).

Player's Life

WMS Gaming is revolutionizing the slot gaming bonus experience with its Player's Life Web Services technology. With Player's Life, slot players are able to create their own accounts via the Internet, so that they can actively manage their progress for WMS slot themes such as The Lord of the Rings. The idea behind Player's Life is to develop player loyalty for WMS, to increase TOD, and to increase repeat visits. This is accomplished through an ingenious tracking system that allows players to save their progress for future gameplay. For example, when a player finishes their gaming session on The Lord of the Rings, the machine prints out a unique tracking ticket that can be redeemed on any The Lord of the Rings slot machine in the country. This concept of saving slot gameplay is revolutionary and it brings customers back time and time again as they make progress through a large number of levels, just like in a video game. The more progress a player makes in a particular game, the more bonuses they unlock and the more loyalty they develop towards the game. Player's Life Web Service Technology ensures that the player will enjoy a new gameplay experience every time they play (Anderer & Green, 2011).

Community Bonusing**Bally Technologies**

The slot industry has also experienced a shift towards community bonuses that are designed to drive excitement throughout the casino. Bally Technologies brings community bonusing to another level utilizing their new CoolSign technologies. CoolSign allows casino managers to network video displays across the floor to Bally's Elite Bonusing System. A slot operations manager can not only unleash a floor-wide bonus for their slot players, but it can be broadcasted on every video display throughout the casino. This concept is brought to life with Bally's Off to the Races bonus that simulates a horse race throughout the casino. At Barona

Resort & Casino in California, the virtual horse races are held monthly with a live bugler and race caller. The CoolSign technology builds excitement throughout the casino as players cheer for their virtual horse. When the race is over, the winners are displayed with CoolSign throughout the casino for maximum celebration. This is just one example of the interactive bonus opportunities with Bally iVIEW and Bally CoolSign (Green, 2011a).

IGT

IGT is also pioneering new ways to bring community slot play and bonusing events to the casino floor. They are experiencing great success with their monster Center Stage community slot bank that features five individual slot machines that share an enormous 103” overhead bonus display. This giant display is sure to attract slot players from across the casino floor. IGT has also designed their new Center Stage game themes to randomly involve players in community bonuses. For example, their Wheel of Fortune Experience slot theme triggers a Wheel of Fortune bonus round that allows various players on the slot bank to choose letters and everyone gets a prize. Their newest Center Stage theme, Batman the Dark Knight, allows players to save bonus events so that they can share them with family or friends. These shared bonus events introduce a new social experience to slot play that brings increased excitement (Rutherford, 2011; Anonymous, 2011a).

Atronic

Bally Technologies and IGT may be the leading developers of slot bonusing systems in the U.S., but other smaller vendors are finding ways to enhance the gameplay of their standalone slot machines. Slot manufacturer Atronic has become synonymous with their hit slot series Deal or No Deal. They have revitalized this classic theme and have expanded it into a five-machine community slot bank with a wall of 54” LCD monitors that broadcast their infamous briefcase

bonus. To enhance the gaming experience with Deal or No Deal, Atronic has set the bonus to automatically trigger every 11 minutes and all players get to participate. This concept of automated community-wide bonusing is growing in popularity and Atronic promotes it as “stress-free eligibility” (Rutherford, 2011). During the mystery briefcase bonus, each player’s bonus is shown on the overhead community LCD screens. Each player is competing for their own bonus prize, but their bonus play is tied into the actions of their neighboring slot players. This bank-wide community bonusing builds excitement for slot players, encourages a more social experience, and builds excitement for other nearby guests in the casino (Rutherford, 2011).

WMS

WMS Gaming has long been a pioneer of community gaming with their Big Event slot banks which they continue to reinvent with new game themes such as The Great and Powerful OZ. If one player triggers the bonus round on the slot bank, the rest of the players get to participate with the chance of winning ancillary prizes. WMS has also experience great success with their Reel ‘Em In game series which features a community bank-wide fishing derby bonus event. During the fishing derby each player is competing to catch the biggest fish in a virtual lake. Bonuses are then awarded based on the size of each player’s fish. Unlike many other community bonuses, the Reel ‘Em In fishing derby builds a friendly competition among slot players that increases their TOD and the casino’s handle per unit (Rutherford, 2011).

Aruze Gaming

Not to be outdone, Aruze Gaming has released its own community fishing experience, Paradise Fishing, which features their new Reel Feel technology. Aruze is an industry leader for thinking outside the box and they incorporate creative gameplay techniques not offered by any other slot manufacturer. Their Reel Feel technology brings a joystick into the world of slot

gaming, so that players can simulate the actual experience of catching a fish with a fishing pole. This is another example of how slot manufacturers are blurring the line between video games and slot machines. American slot patrons have responded very positively to these fun and new interactive experiences. IGT has followed suite with their upcoming Big Buck Hunter slot game that mimics the shooting gallery gameplay of the arcade game it is based on (Anderer & Green, 2011).

Slot Tournaments

Slot tournaments are an under-utilized component of any slot floor. Traditionally, casinos will run slot tournaments during the slower hours of the day to attract players. Tournament slot machines are typically located in their own separate area of the casino, and cannot be used for standard slot gameplay. Therefore, they sit out of service when tournaments are not taking place. There are many things wrong with this approach to slot tournaments. First of all, the casino is purchasing slot machines that are only used for a couple hours of each week. Second of all, the casino is dedicating space on their casino floor to these slot machines that are rarely used. Third of all, the casino is purchasing the cheapest slot machines they can find in order to keep their costs down. Unfortunately this leads to a generic slot tournament experience that does little to spark the excitement that it is meant to provide. Fortunately the latest in slot system technology has revolutionized the approach to slot tournaments. Cutting edge tournament solutions are now available from Atronic, Bally Technologies, and IGT (Anderer, 2011a; Anonymous, 2011c; www.IGT.com, n.d. f).

TournaMaster

Atronic debuted their new TournaMaster technology at the 2011 G2E Conference in Las Vegas, NV. TournaMaster give slot managers the capability to transform any Atronic slot

machine on the casino floor into a tournament machine with the push of a button. The primary LCD screen on the cabinet becomes the new tournament theme, while the secondary LCD screen shows the player's name, points, and ranking. This secondary LCD becomes a leader board for every player in the slot tournament. They can instantly tell how well they are performing against their opponents and this real-time data promotes increased competition and excitement. To further improve the TournaMaster system, it can be teamed up with Atronic's GameBoss controller to allow remote configuration of tournaments from any computer terminal or wireless device. No manual adjustments need to be made at the machine level. This remote functionality is possible because GameBoss was designed to meet G2S protocols and it allows multiple Atronic machines to be networked together (Anderer, 2011b).

Tournament Manager

IGT has developed similar tournament functionality with their IGT Tournament Manager application which is powered by their sbX server based system. Tournament Manager allows any IGT sbX slot machine to be quickly switched into tournament mode. This is possible because each slot machine stores both its primary game themes and the tournament theme. Once the game is switched into tournament mode, the entire slot tournament can be managed remotely via a wireless device. Slot players can simply pick their favorite machine and can use the sbX service window to enroll themselves into the slot tournament. Similar to Atronic's TournaMaster system, IGT's Tournament Manager allows players to track their progress in real-time through the slot machines top LCD display which behaves as a leader board. IGT ramps up the excitement with turnkey graphics that build excitement both during tournament play and after a winner has been decided (www.IGT.com, n.d. f).

iVIEW DM

Bally Technologies' iVIEW DM brings its own version of tournament gaming to the modern day slot floor. iVIEW DM uses the same technology for its slot tournaments as it does for its community bonus events, which allows the iVIEW display to instantly transform any video reel slot machine into a full-fledged tournament game. When this transformation is made, the iVIEW DM picture-in-picture is used to host the tournament game and it becomes full screen. Therefore the tournament application is able to run without having any impact on the machines' primary gameplay. This is a powerful tournament solution because it can be run on any brand of video reel slot machine with a touch screen. Tournaments can be run floor-wide, because guests will be playing the exact same tournament game through their machine's iVIEW DM. It doesn't matter if they are sitting at an IGT, WMS, Bally or any other brand of slot machine; the game theme and odds of winning are identical. For added excitement, these iVIEW DM slot tournaments can be partnered with Bally's CoolSign technology to provide leader boards and celebrations throughout the casino (Anderer, 2011a).

IGT, Atronic and Bally Technologies have revitalized slot tournaments. Their systems based approaches allow for casino managers to run slot tournaments virtually anywhere in their casino without purchasing dedicated slot machines. At the same time, the casino does not need to constantly move tournament machines or dedicate valuable floor space to them. Slot managers are now able to use tournaments as an effective tool for building excitement on the casino floor, any time of day. Not only are these tournament easy to manage, but they are powered by the latest in slot cabinet technology and game themes. The traditional 3-reel stepper slot tournaments can be replaced by something much more exciting that incorporates the latest in slot themes and display technology (Anderer, 2011a; Anonymous, 2011c).

Promotions

Machine-Level

IGT's server based sbX system and Bally Technologies' iVIEW Network Solutions both offer customized advertisements to carded slot players, but this technology can be taken one step further to put a promotion into the player's hand. Casino operators want to maximize TOD and minimize the number of trips their players need to make to the loyalty club desk. These trips inconvenience the guest and cause a loss in gaming revenue for the casino. Therefore it is vital for a casino to offer promotions directly from slot machines and promotional kiosks.

Innovations in touch screen kiosks and in printer technology allow for guests to quickly and easily redeem their loyalty club points for the promotion of their choice.

EPICENTRAL

TransAct is one company that has met this need with their new EPICENTRAL Print System which allows any slot machine to print drawing entries, promotional vouchers, and restaurant or show comps. This technology helps the casino maximize TOD, and it can dramatically increase the success rate of their promotions. EPICENTRAL is compatible with all slot manufacturers and can be installed on legacy machines. Therefore an existing casino can easily upgrade its floor to the EPICENTRAL Print System by installing a TransAct ServerPort device and Epic 950 printer into their existing slot machines. This software system links up to the existing player tracking system so the casino can issue customized promotions directly through the slot machine. Players can view and print these personalized promotions without leaving their seat. This dramatically improves the ease of use for any promotion, whether it is a full meal comp or just as basic restaurant coupon (Anderer, 2011c).

PromoNet

FutureLogic has also created a promotional couponing solution called PromoNet, which can easily be integrated with any of their GEN2 Universal or GEN3 Evolution slot printers. PromoNet offers the ability for casinos to create marketing campaigns for either carded or uncarded players, and to trigger the campaigns based on real-time gameplay results and player tracking information. Casino managers can issue a coupon at the slot machine level for all guests, or only for a selected few. This is effective for mass advertising campaigns or for issuing personalized comps to loyalty club members. Players can instantly be rewarded for their level of play, which helps ensure that they will end their experience with a positive outcome. PromoNet instantly rewards guests for their desired behavior while maximizing their gameplay time. FutureLogic's new GEN3 Evolution printers enhance the experience with high resolution graphics that can be customized for each promotion (Anderer, 2011b).

Kiosks

A second method to automate the issuance of promotions is through a touch screen kiosk. Casino kiosks have traditionally performed the tasks of an ATM, a bill breaker, and ticket redemption device. Modern kiosks have broken that mold and can be networked with the casino's loyalty club system. Instead of waiting in line at the loyalty club desk, a customer can quickly and efficiently manage their loyalty club membership through a convenient kiosk.

Player Enrollment Kiosk

The Player Enrollment Kiosk by Automated Currency Instruments allows customers to self-enroll themselves into the casino's loyalty club in seconds. Existing members can check the balance of their account, receive customized offers, or build their own offer. The Player

Enrollment Kiosk also offers the ability for the guest to instantly print coupons or promotions (Green, 2011b).

iGuide

Casino Data Imaging's new iGuide Wayfinder Plus allows for a guest to interact with a digital map of the casino. iGuide gives customized directions to a lost guest, and can help a guest find the exact slot machine they want to play. It allows a slot player to search for machines by denomination and theme name. Once a slot machine is located, iGuide provides customized directions to help the guest locate it. These kiosks reduce labor costs for casinos, increase the efficiency of customer service, and improve the redemption rate for all kinds of promotions (Green, 2011b).

Conclusion to Literature Review

There has been a recent explosion of slot gaming technology in the United States and an informed casino executive can use these technologies to differentiate their casino floor from their competitors. With increased gaming competition across the continental U.S., casino managers are hard pressed to develop competitive advantages that will improve guest experience and ultimately increase revenue (Anonymous, 2010). Research shows that the entertainment aspect of slot play is highly sought after and is a key area that can be enhanced with new technologies. These technologies include server based gaming systems which are quickly becoming universally compatible and cheaper to implement. These systems are revolutionizing the slot industry by providing many new casino management and marketing opportunities that did not exist a few years ago. To accompany server based technology are a plethora of bonusing, promotion, and tournament technologies as well. In the year 2011 the casinos that invest in these technologies will be at a great advantage over their competitors. In the future these technologies

will become more common and their success will increasingly rely on the knowledge and skill of the individuals who are managing them.

PART THREE

Introduction

Modern day slot managers need to find new and exciting ways to differentiate their slot gaming floor from the competition. Research has shown that slot players are placing an increased focus on the entertainment portion of their gaming experience with less expectations of winning money (Thalden, 2011). This shift in the slot industry places new demands on slot operation managers who can no longer mimic the casino products offered by their competitors, but rather they need to find ways to set their casino apart from the others. Fortunately, slot manufacturers are providing technological solutions that are providing casinos with a wealth of new tools and opportunities to enhance the slot gameplay experience. The above literature review discusses some of the primary forms of technology available, but casino executives also need to understand how to implement these technologies successfully. This is particularly important due to the high price tags for many of these products and the compatibility issues that are common between manufacturers (Anonymous, 2011b).

Preliminary Proposal

This preliminary proposal will outline the general steps needed for a slot manager to successfully implement new gaming technologies at their casino property whether it is a new casino or an existing one. This process will vary between new casinos and existing ones due to the large capital investment that can be associated with new server based systems.

New Casinos

New casino properties often have the luxury of a large capital budget for opening. Large casino properties in particular often have tens of millions of dollars available to invest in the infrastructure of their slot gaming floor. This capital provides them with a significant advantage

because they are able to afford the most advanced gaming technology throughout their casino, but they also face risks associated with implementing new technologies that may be unproven in the field. When a slot manufacturer engineers a new game theme, slot cabinet, or system of any kind it must be approved by the Gaming Control Board (GCB). The GCB will test the new products in their lab environment for many months until they are satisfied that the product is free of any substantial defects. Once any necessary revisions are made and testing is complete, the GCB will approve the product to be sold to casinos under the jurisdiction of that GCB. For example, casinos in Las Vegas are regulated by the Nevada Gaming Control Board (NGCB) who must test and approve all slot gaming products sold to casinos in Las Vegas. Each state that offers class III gaming will be regulated by its own GCB and each state's GCB has different levels of regulation. It is not uncommon for a product to be approved in one state, but not another. This is especially true for server based slot gaming systems that require a new set of regulations in each state that seeks approval (www.wikipedia.org, 2011).

Despite the GCB's testing and approval of new slot gaming products, casino managers will face unexpected challenges when implementing these new technologies. Each casino has its own set of systems that are provided by multiple vendors, therefore each new casino will experience unique challenges getting all of their new systems to be fully compatible. Compatibility is a huge concern and should be a primary concern when selecting slot gaming systems for a new casino. The following recommendations will allow a new casino to avoid any unnecessary pitfalls during the opening process.

1. First of all, the executives for a new casino property need to choose what systems are going to power their casino. These primarily include server based gaming, accounting, bonus, and player tracking systems. Slot manufacturers have a bevy of new solutions

available for these needs, but a casino manager needs to avoid the temptation to purchase any system technologies that are unproven. An unproven system is one that has been recently approved by the GCB for sale, but has never been operated in a casino. Slot manufacturers are focused on selling their newest products and will make endless promises regarding the functionality and compatibility of their products. The worst scenario is when vendors push to sell new products that are not approved by GCB, but have targeted approval dates. If a new casino purchases these systems it can be disastrous, because targeted approval dates are often pushed back at the last minute. A casino executive does not want the functionality of their future slot floor to rely on any systems that are not approved yet or are untested in the field. For this reason, there is not a first mover advantage in the slot gaming industry, but rather a new casino should strive to be second in implementing new technologies. A second mover has significant advantages for several reasons; they receive an updated version of technologies that have already been field tested, they often pay less for new technologies than first movers, and they don't take the risk of implementing a costly system that will not function without significant modifications and troubleshooting.

2. Secondly, a new casino needs test the systems they have purchased many months before they open their property. This is best accomplished by building a testing lab that is led by a project manager (PM) who will be in charge of working with slot vendors to test and smoothly implement their gaming systems. The casino's contracts should include all necessary equipment from their vendors to establish a fully functioning test environment. Once established this lab will test for functionality and compatibility of all slot products and systems before they hit the casino floor.

3. Finally, a new casino should begin installation of their slot products several months before the casino is scheduled to open. Despite the previous testing they performed in their lab, there will always be unexpected issues during product installation in the casino environment. The earlier a casino manager begins installation, the more time they will have to troubleshoot problems and test their floor before opening. It is the role of the PM to lean on vendors to fix any unexpected compatibility or functionality issues before the casino doors are opened.

Existing Casinos

Existing casinos are faced with the challenge of updating their casino floor with new technologies, but cannot afford to update their entire slot floor at once. This is because the new technologies often require substantial investments, and because the casino cannot afford to shut its doors for a couple months while they restructure the casino's technology. Therefore, these existing casinos need to implement new technologies incrementally to minimize impact on guest experience and to minimize capital investment for a single financial quarter.

1. The first step is to choose an upgrade solution for server based gaming. Slot manufacturers are starting to focus more on the upgrade needs for existing casinos and companies like IGT and Bally Technologies have recently released new adaptors for upgrading legacy systems and machines to provide server based gaming functionality. IGT's new Universal Game Adaptor allows an existing casino to upgrade their existing video reel machines from any manufacturer to the sbX server based experience. Any existing slot machine with a touch screen can provide a sbX service window (Anonymous, 2011b). Likewise, Bally's iVIEW DM technology can be installed in any existing slot machine with a touch screen. Both of these technologies allow for a casino to upgrade their legacy games to server based for less than

\$2,000 per machine (Anderer, 2011a). This is substantially cheaper than purchasing thousands of new server based slot machines to upgrade the slot floor.

2. Secondly, the casino must test these systems in a lab environment before they implement them on their casino floor.

3. Once tested in the lab, an incremental installation schedule should be utilized for installing the products in the casino. A few banks of slot machines should be utilized for in-field testing before the rest of the machines in the casino are upgraded. This incremental approach prevents any large pitfalls that could result from an immediate floor-wide installation. Once the casino upgrades their machines to server based technology they can take further steps to upgrade other slot systems for applications such as bonusing. The server based systems are essentially a platform that makes all other new technologies possible. Therefore, the server based system upgrade is crucial for allowing older casinos to contend with their newest competitors in terms of efficiency, marketing, and customer loyalty (Anonymous, 2011b).

Conclusion

This preliminary business proposal outlines how casino managers can best implement the latest in gaming technology on their slot floor. These managers are faced with an overwhelming amount of new technologies that are being released in the U.S. market, and few of them fully understand the capability of these technologies or how to implement them. Therefore this preliminary proposal educates casino managers about new technologies and provides a general plan of action for implementing them.

Once implemented, these new technologies will allow the casino to establish itself as an industry leader of the slot gaming experience. The future of the U.S. slot industry includes increased competition, but also includes signs of industry growth. New slot players in the U.S.

are seeking an exciting form of entertainment that can be provided with the application of these new slot gaming technologies.

References

- Anderer, C. (2011a, September 18). All systems go. *Casino Journal*. Retrieved from http://www.casinojournal.com/Articles/SM_Cover_Story/BNP_GUID_9-5-2006_A_10000000000001104766
- Anderer, C. (2011b, September 17). Signs of support. *Casino Journal*. Retrieved from http://www.casinojournal.com/Articles/Article_Rotation/2011/09/17/Signs-of-SUPPORT
- Anderer, C. (2011c, September 18). World of slots 2011. *Casino Journal*. Retrieved from http://www.casinojournal.com/Articles/SM_Featured_Articles/BNP_GUID_9-5-2006_A_10000000000001104785
- Anderer, C., & Green, M. (2011). Casino Journal's top 20 most innovative gaming. *Casino Journal*. Retrieved from http://www.casinojournal.com/Articles/Article_Rotation/2011/05/11/Casino-Journal-s-TOP-20-Most-Innovative-Gaming
- Anonymous. (2010, January 9). IGT revolutionizes the gaming industry with sbX system. *Marketing Weekly News*, pp. 144-145. Retrieved from http://goliath.ecnext.com/coms2/gi_0199-11966155/IGT-Revolutionizes-the-Gaming-Industry.html
- Anonymous. (2011a, June 18). IGT to introduce new machine and new Asian game themes at G2E Asia. (2011, May 31). *Marketing Weekly News*. Retrieved from <http://www.casinoman.net/gambling-news/article/igt-to-introduce-new-machine-and-new-asian-game-themes-at-g2e-asi.10446.asp#>
- Anonymous. (2011b, July 16). IGT announces universal game adaptor at users conference offering an evolutionary path to G2S for casinos. *Marketing Weekly News*. Retrieved from <http://www.proquest.com>
- Anonymous. (2011c, October 8). Gaming activities companies; experience the innovation at Bally Technologies' G2E 2001 exhibit. (2011, October 8). *Marketing Weekly News*. Retrieved from <http://www.proquest.com>
- Bally Gaming, Inc. (2006). Glossary: MK5-SVMOD-0005[A]. Retrieved from <http://www-origin.ballytech.com/Uploads/SideLinks/PDF/MK5-SVMOD-0005A-Glossary.pdf>
- Cooper, M. (2005). Sit and spin. *The Atlantic Monthly*, 296(5), pp. 121-124, 126, 128-130. Retrieved from <http://www.proquest.com>
- Garcia, O. (2010, December 13). Stylish Cosmopolitan in Las Vegas needs every edge. *Associated Press*. Retrieved from <http://abcnews.go.com/Travel/wireStory?id=12382662>
- Green, M. (2010a, October 1). Innovations / insights: the powerful pull of iView DM. *Casino Journal*. Retrieved from http://www.casinojournal.com/Articles/Games_Technology/2010/10/01/INNOVATIONS-INSIGHTS

- Green, M. (2010b, January 1). Not your grandmother's IGT. *Casino Journal*. Retrieved from http://www.casinojournal.com/Articles/Cover_Story/2010/01/01/Not-Your-Grandmother-s-IGT
- Green, M. (2011a, February 1). Innovations / insights: to attract and engage. *Casino Journal*. Retrieved from http://www.casinojournal.com/Articles/Games_Technology/2011/02/01/INNOVATIONS-INSIGHTS-To-ATTRACT-and-ENGAGE
- Green, M. (2011b, May 1). The evolving kiosk. *Casino Journal*. Retrieved from http://www.casinojournal.com/Articles/SM_Featured_Articles/BNP_GUID_9-5-2006_A_1000000000001046211
- Griffiths, M. (1999). Gambling technologies: prospects for problem gambling. *Journal of Gambling Studies*, 16(3), 265-283.
- Rutherford, J. (2011, February 1). Bringing people together... *Casino Journal*. Retrieved from http://www.casinojournal.com/Articles/Games_Technology/2011/02/01/Bringing-People-Together
- Thalden, B. (2011, September 17). Innovation / insight: does your casino floor suck... don't worry, there's a solution. *Casino Journal*. Retrieved from http://www.casinojournal.com/Articles/Focus_On/BNP_GUID_9-5-2006_A_1000000000001104682
- www.IGT.com. (n.d. a). Bonus Games: A new dimension. Retrieved from http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_Advantage_Bonusing_Bonus_Games.pdf
- www.IGT.com. (n.d. b). Celebration Prizes: Involve all players in the thrill. Retrieved from http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_Advantage_Bonusing_Celebration_Prizes.pdf
- www.IGT.com. (n.d. c). Gift Points: Offer more. Retrieved from http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_Advantage_Patron_Management_Gift_Points.pdf
- www.IGT.com. (n.d. d). IGT Floor Manager: Don't just manage your floor, manage the experience. Retrieved from http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_sbX_Floor_Manager.pdf
- www.IGT.com. (n.d. e). IGT Media Manager: App world. Retrieved from http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_sbX_Media_Manager.pdf
- www.IGT.com. (n.d. f). IGT Tournament Manager: Redefine the tournament experience. Retrieved from

- http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_Tournament_Manager.pdf
- www.IGT.com. (n.d. g). IGT Virtual Drawing Manager: The new promotional drawing experience. Retrieved from http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_Advantage_Virtual_Drawing_Manager.pdf
- www.IGT.com. (n.d. h). Lucky Coin & Carded Lucky Coin: Build excitement. Retrieved from http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_Advantage_Bonusing_Lucky_Coin.pdf
- www.IGT.com. (n.d. i). Lucky Seat Slots: Random fun. Retrieved from http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_Service_Window_App_LuckySeatSlots.pdf
- www.IGT.com. (n.d. j). Lucky Time & Carded Lucky Time: Unexpected awards. Retrieved from http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_Advantage_Bonusing_Lucky_Time.pdf
- www.IGT.com. (n.d. k). Message Blast: Give players the star treatment. Retrieved from http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_Service_Window_App_MessageBlast.pdf
- www.IGT.com. (n.d. l). Multiple Jackpot Time: Surprise players. Retrieved from http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_Advantage_Bonusing_Multiple_Jackpot_Time.pdf
- www.IGT.com. (n.d. m). Personal Lucky Coin: Reward loyalty. Retrieved from http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_Advantage_Bonusing_Personal_Lucky_Coin.pdf
- www.IGT.com. (n.d. n). PointPlay: Make it convenient. Retrieved from http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_Advantage_Bonusing_PointPlay.pdf
- www.IGT.com. (n.d. o). Point Pursuit: Instant gratification. Retrieved from http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_Service_Window_App_PointPursuit.pdf
- www.IGT.com. (n.d. p). Service Window: Unlimited potential. Retrieved from http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_Service_Window.pdf
- www.IGT.com. (n.d. q). Xtra Credit: Loyalty matters. Retrieved from http://media.igt.com/marketing/PromotionalLiterature/IGT_Systems_Advantage_Bonusing_Xtra_Credit.pdf
- www.wikipedia.org. (2011). Gaming Control Board. Retrieved from http://en.wikipedia.org/wiki/Gaming_Control_Board