



Player Tracking Risks and Controls

by Billy Byrne

Player tracking systems have come a long way over a short period of time. Companies such as Aristocrat, Bally, IGT and Konami continue to develop and provide innovative player tracking systems to help gaming operators manage customer relationships. These systems include tools for operators to analyze players' gaming behavior and to understand the players' short and long term value to the casino. These powerful new tools provide a means of understanding Return on Investment (ROI) from marketing campaigns. Such tools help create and grow the players' overall casino experience and increase the number of interactions with the player.

Access to the latest tools and technology assists casino operators with the effective management of their customer database. As such, casino operators strive to have the best player rating system in order to try and gain a competitive advantage. However, the deployment of technologically advanced systems and tools increases the number of risks. A thorough understanding of these risks will help build an effective audit program. The inherent risks that reside in and around player tracking systems are as follows:

Inherent Risks

- With any information technology system, there is a level of complexity that must be accepted and understood by Internal Audit. Player tracking systems are no different. Within these systems, there are potentially hundreds of different security codes. These security codes give employees the ability to perform specific functions or tasks within the system. For instance, a security code can be as simple as allowing a player's club representative the ability to add notes to a player's profile or they can be as risky as allowing an employee to override and change a player's personal identification number (PIN) without approval from the player and/or supervisor.

- Frequently, there is an extensive user base within these systems that must be managed. Player tracking system complexity is compounded by the fact that it is used by hundreds of different employees in multiple departments and potentially across multiple properties.

- Thousands of transactions occur every day within player tracking systems. These transactions are either performed manually by employees or through an automated preconfigured process. Examples include the ability to adjust player point balances or reward players through incentives that can be redeemed at the operation's outlets.

- Significant volumes of personal data reside in player tracking systems, specifically social security numbers and drivers'

license numbers. This data is accessible and exploitable by internal system users as well as being susceptible to unauthorized access by external parties if proper controls are not in place.

- The culture of the marketing department is driven by a customer centric focus and marketing personnel generally have little training in the area of policies, procedures and controls. With different motivations, priorities and perspectives from that of auditing, there are often communication and implementation hurdles to overcome in order to achieve a good balance between customer service and controls.

System Administration Risks

The system administrator has the right to change and add security codes granted or denied to employees. In an environment with appropriate segregation of duties, this access right should be limited and never granted to non-IT personnel.

Generic/anonymous and/or shared user accounts should be eliminated as personnel who require access should be assigned a specific user account with predetermined security codes that correspond with their job position requirements.

The first step in auditing player tracking systems is to determine if controls are in place over the assignment of functions or tasks to employees. This generally comes in the form of an approved access control list or matrix which resides outside the system. Best practices include evidence of the control matrix review and approval by department heads on at least an annual basis. Department head approval verifies that their employees require the security rights to perform specified functions as part of their job duties. This audit step can also be expanded to examine whether the assigned securities rights are reasonable and compatible with their specific job function. For instance, does it make sense for a hotel front desk employee to have the ability (or access rights) to issue free play to patrons? Also, examine segregation of duties. An accounting manager should not be able to perform and approve point adjustments. Additional procedures include confirming that system authorization limits are aligned with those stated in policies or ensuring that terminated employees have been removed in a timely manner.

In order to test the control matrix, compare the approved document to the actual access rights assigned within the system. For this step, observe the access rights onscreen or obtain employee access rights system reports. Note that the later approach is more effective.

Another key auditing step is to examine the activity of the security administrator as their duties should be limited to user account maintenance and system configuration. They should

not be performing transactional activities. Ideally, a key control is in place that requires an independent and regular review of the Security Administrator's activity.

As part of the system review, Internal Audit should verify the audit function is enabled in the player tracking system in order to capture all system user activity. Additionally, there should be a review of the retention period used to maintain records of data. Only keeping one month of audit data may not be an acceptable timeframe for operations or the gaming regulatory bodies.

Point Transaction Risks

A vital part of auditing a player tracking system is to understand the high risk transactions that can be performed in the system and to determine if adequate segregation of duties exists and if there is adequate supervisory level review and approval. Due to the vast number of different access rights that reside in player tracking systems, it is highly unlikely there will be adequate time and resources to audit them all. Therefore, narrowing the audit down to highest risks provides a more effective approach. Interviews with the system administrator(s), regular system users and a review of system manuals should assist with the identification of the high risk access rights and transactions. A key audit step should be to obtain audit reports around high risk transactions and verify that those transactions are performed by authorized employees and within their authorized limits.

A good starting point when trying to identify the high risk areas is to understand how points are accrued by players. The four basic ways to increase points in player accounts are as follows:

1. Promotional Events and Point Multipliers – In addition to earning points on standard rated activity, players may have the opportunity to accumulate bonus points on specific days or hours. In fact, the variety of ways in which points can be awarded is only limited by the system. The awarding of points may be demographically segmented or aligned with events such as birthdays or even based on dollars spent during a specific period. The main risk is that points are not accruing at the correct rates and times as advertised on promotional material. In order to test this effectively, dummy accounts can be created. The test cards for these accounts can be used to verify if points are accumulating accurately during regular play as well as during promotional bonus point multiplier sessions.

Creating test accounts and cards leads to another area of risk in itself. Internal Audit needs to understand who else can create and use dummy accounts. They should walk through the process to understand how cards are obtained, stored, and how the tickets and cash, generated during testing, are controlled.

2. Manual Point Adjustments – There may be circumstances under which points must be manually added (or subtracted) from a patron's account. These may include compensation to guests for technical or guest service issues. While there is genuine need

for certain employees to perform adjustments, there is a high degree of risk created as this is a function that can be easily abused if is not adequately controlled and monitored. In fact, there are many known examples of casino staff adjusting the accounts of friends and relatives.

Internal Audit should strive to understand exactly which employees can perform manual adjustments and if the amount adjusted is reasonable and appropriately aligned with job title. A clear understanding of the adjustment request and approval process is also important. There should be tests for reasonableness performed by a department separate from those who can perform these tasks. Manual adjustment approval forms should be reconciled against actual system adjustments. As a recommendation, a clearly defined policy should be in place that specifically captures each potential reason for performing adjustments and includes a review and approval process by at least two employees.

3. Merging Accounts – Merging of player accounts is a powerful function that allows the pooling of two players' gaming activity to include points and rewards. The main reason this security function exists is to eliminate duplicate accounts. This feature is a common area of abuse by employees who can merge dormant accounts into another player's account who is an accomplice to the fraudulent scheme.

Internal Audit can obtain the user list for those employees given the account merge function capability. Similar to point adjustments, there should be adequate segregation of duties between those who can merge accounts and those who review and approve account merges. Policies and procedures should address which job titles can perform, review and approve account merges. Although management granted this functionality, Internal Audit should evaluate whether or not the employee requires this ability based on their job title.

4. Standard Rating Sessions – Players receive a club card when they sign up for a reward program. Player activity is captured as a player uses their card throughout the casino. The player activity data is used to calculate how much the player is going to receive in the form of points and complementaries.

Generally speaking, casinos calculate players net worth using a theoretical win computation using activity data to determine how much a player is financially worth to the casino in the long run. Player theoretical win is multiplied by the reinvestment rate (a.k.a. payback percentage) to arrive at the maximum amount that a player should receive in the form of total rewards. Reinvestment in players increase in the form of rewards as the player's theoretical net worth increases. Hence, there is a risk of over-investment in a player if the theoretical win or payback percentage is miscalculated or incorrectly programmed into the player rating system. This would unnecessarily increase the casino operating expenses and reduce profit margins.

• **Slot Ratings** – Slot session ratings are initiated when a player inserts their player card into a gaming machine. The

casino management system validates the player's account status and captures the coin-in meter readings. Coin-in is multiplied by the theoretical hold percentage of the gaming machine, which is translated into points and added to the player's account.

This simple player theoretical win formula can have different variables in each operation. For instance, the coin-in variable used in the slot rating theoretical formula may or may not include free play.

• **Table Ratings** – The typical table theoretical computation involves a combination of manual entries and preconfigured automated values that can be demonstrated in the following formula:

$$\text{Average bet} \times \text{hours played} \\ \times \text{decisions-per-hour} \times \text{house} \\ \text{advantage}$$

This formula may give the impression that a clearly defined computational process is in place but there is subjectivity in the variables that appear in this formula.

• Average bet is typically entered manually by the pit staff based on the timing of their observation. However, many players vary the value of their bet so there is possibility that the pit staff may not enter an accurate average bet. Ideally, the observations and data should be captured throughout the gaming session.

A review of actual rated sessions against surveillance footage is the best way to test for inconsistencies but this can be a time consuming process. The data in the following chart (page 20) was recently provided by a large Las Vegas casino and it compares average bet from the table rated session against audited data. Note that this data was taken for premium players where the pit staff to player ratio is low when compared with lower table limit pits. Thus, the lower staff to player ratio would suggest greater rating accuracy. However, if this is the best we can achieve in a high limit pit at a large Las Vegas casino we should be concerned about the ratings that are taking place in lower limit pits.

• Hours played is captured when a player presents their card to the dealer or pit staff who then swipe it into the table tracking system in order to capture the player's start time. It is the staff's responsibility to log the player out of the system when they leave the table in order to capture the total time played. Busy or distracted staff can easily miss the actual time the player departed from the table.

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	Average Bet		Over/Under Stated	
	Table Ratings	Audited Ratings	\$	%
Rating #1	\$3,000	\$2,100	\$900	42.9%
Rating #2	\$39,231	\$18,014	\$21,217	117.8%
Rating #3	\$20,000	\$12,505	\$7,495	59.9%
Rating #4	\$2,000	\$2,025	-\$25	-1.2%
Rating #5	\$22,600	\$25,913	-\$3,313	-12.8%
Rating #6	\$900	\$642	\$258	40.2%
Rating #7	\$6,000	\$3,582	\$2,418	67.5%
Rating #8	\$10,000	\$8,894	\$1,106	12.4%
Rating #9	\$62,500	\$51,746	\$10,754	20.8%
Rating #10	\$10,000	\$4,460	\$5,540	124.2%
Rating #11	\$28,962	\$33,536	-\$4,574	-13.6%
Rating #12	\$12,000	\$5,545	\$6,455	116.4%
Rating #13	\$5,000	\$2,927	\$2,073	70.8%
Rating #14	\$2,000	\$2,999	-\$999	-33.3%
Totals	\$224,193	\$174,888	\$49,305	28.2%

- Decisions-per-hour captures the speed of the game (i.e. whenever a hand is completed, dice are thrown, or the ball is dropped in the roulette wheel). The speed of the game can vary depending on things like the number of players or the experience level of the dealer. Generally, hands per hours are set up as a preconfigured number in the system; therefore, auditors should determine how management arrives at this default number by game type. There is a risk that management accepted the manufacturer’s default settings without consideration for their specific dealer performance. Management should perform regular reviews of these settings to ensure accurate numbers are used for each table game type. For high-roller areas, the manual approach is recommended in order to fairly reward these high value players. Additionally, reinvestment rates tend to be higher for high-rollers and errors in theoretical win and reinvestment rate computations could be more costly to the casino. However, a player who is under-rewarded through an understated theoretical calculation may be lost to a competitor.
- The house advantage is a mathematical computation which can be used to demonstrate what percentage of dollars the casino can earn from each game in the long run. While no specific industry standards exist, basic mathematical models are easy to obtain. However, these models can soon become complex due to variables of game type, game rules, and players’ skill level. For example, the house advantage for blackjack will vary depending on the number of decks used or the house advantage for roulette will vary depending on whether it is a single or double zero roulette game. This number is

generally pre-programmed and management should review it on a regular basis, and if necessary, update it in the system. There is a risk that authorization to change game rules or game type on the gaming floor is not updated to reflect the programmed system house advantage. Some systems allow manual entry of the players’ skill level into the system. As with the previously mentioned manual entries, there is a level of subjectivity at play that must be monitored. Internal Audit will need to understand how skill level is determined by management and if specific guidelines are in place and consistently applied.

The subjective nature of the inputs that make up the table theoretical calculation demonstrates the difficulty in obtaining accurate data. Unintentional errors or fraudulent player tracking inputs can cause players to receive more accrued points than they deserve. For example, if the average bet is entered as 1000 instead of 100, the player could potentially receive ten times more points than earned. If input errors are found, particularly during slow operating periods, Internal Audit should proceed with skepticism. There should be a deeper review of repeat offender activities to see if fraudulent trends exist between a specific employee and rated guest.

One of the problems with these systems is that the floor person can prepare and approve ratings without oversight. Systems may actually have the functionality for a secondary approver code but quite often this is determined to be burdensome control and the feature is disabled. In the pit staff’s defense, a busy table shift can place numerous and sometimes unrealistic demands on pit staff. As such, a compromised recommendation may be to just have this function enabled in high limit pits. Additionally, the cost of over rating players should be weighed against the cost of additional staff in the pit.

It is questionable whether there is a complete solution to these issues; however, there is no doubt that a focused effort could reduce the number of rating discrepancies. Formal rating guidelines should be developed and floor staff should be trained on those guidelines. Regularly sharing report cards of actual ratings to audited ratings that highlight discrepancies and positive matches would help reinforce the need for greater attention to tracking inputs.

These are the four common ways to increase points in player accounts. Technology continues to develop to attract and retain players; therefore, regular inquiries with casino personnel which specifically address the methods by which players can accumulate points are imperative.

Additional Functional Risks

In addition to high risk functions and transactions that impact point accumulation, there are other areas of security access that require the auditors’ attention and understanding.

- **Club Tiers** – Frequently, tiered structure programs have a higher point accumulation as players move up tiers. There is a risk that employees can move players to a higher level tier than their actual play permits so the player earns more points. In such cases, a secondary approval should be required to manually promote players to higher tier levels.

- **Free Play** – The ability to add free play to players’ accounts poses a significant risk if not properly monitored. This is similar to performing point adjustments – there should be appropriate review and approval processes in place that should be monitored for compliance.

- **Drawing Entries** – Many systems have modules for promotional drawings. With this functionality, there may be securities that allow an employee to add and subtract ticket stubs so that a player’s chance of winning is altered. Understanding which employees have been given access to the security that can add entries and then understanding if this capability is appropriate with job function is an important audit step. As always, preventative controls in the form of activity report reviews is important when trying to prevent and detect abuse in this area.

- **PIN Code Changes** – In general, access cannot be gained to any points or free play on a players club card without knowing the PIN #. Therefore, controls should focus on protecting and maintaining the confidentiality of that PIN #.

- The establishment of new PIN #'s or PIN code changes should require the guest to be present with valid identification.

- A covered external keypad is a good idea to hide the guest’s entry from anyone else’s view.

- Secondary supervisor system approval of PIN code changes is not easily set up but may well avoid abuse in this area. Documentation signed by the guest, players club representative and supervisor is also a recommended control to have in place.

As player tracking systems continue to evolve, it is important for internal auditors to stay abreast of the changes and new capabilities that could increase risk of errors and employee abuse that could cost the operations a significant amount if not managed properly. ♣

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