

Using Player Tracking Systems to Identify and Manage Risk for Problem Gambling and other High-Risk Gambling Behaviour

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Player tracking systems permit consistent monitoring of gaming activity over time in order to inform ongoing decision-making by players and operators. The introduction of an additional capacity to assess such activity and associated decisions by risk for gambling problems (i.e., identification of risk for problem gambling) and other high-risk behaviours (i.e., money-laundering, misappropriation of funds or cheating) enhances the value of the system in setting performance metrics and evaluating the relative success of various initiatives in achieving desired outcomes to reduce risk and gambling harm.

1.0 Using Player Tracking to Identify Risk for Problem Gambling

Identification of risk for gambling problems using playing tracking data is a relatively new field of investigation. However, since the first models (i.e. algorithms) were commercially introduced in 2005 in Saskatchewan Canada based on casino member loyalty data, advances in the gaming industry are making risk identification a more relevant and mainstream solution for dealing with host responsibility.

- 1.1 From a responsible gaming and player tracking perspective there are three primary methods for identifying risk for gambling problems among gaming customers:
 - **1) Self-identification;**
 - **2) Venue Staff identification (third-party);**
 - **3) System identification.**
- 1.2 None of these methods are mutually exclusive and **all three offer value to players and operators** although **'System identification'** offers additional value from a **social policy perspective** insofar as it permits player behavioural data to be analyzed and compared by risk for gambling problems without an individual having to self-identify in advance or be administered a gambling screen through time consuming and expensive primary data collection methods (e.g., surveys). This means that it is possible to objectively assess the impact of various harm reduction initiatives and/or other business and policy practices for those at varying levels of risk minimizing testing effects, time, and money investment (e.g. impact for low-risk

versus high-risk gamblers)¹. This functionality is only possible through the use of a player tracking system.

- 1.3 **Self identification.** Players voluntarily complete a set of standardized questions (e.g., problem gambling screens) that are then summed to arrive at an overall score representing their personal risk for experiencing gambling problems. This can include completion of internationally recognized problem gambling screens and measures used in general population and gambling prevalence studies such as the Problem Gambling Severity Index (PGSI) of the Canadian Problem Gambling Index (CPGI)² or the South Oaks Gambling Screen (SOGs)³ the Victorian Gambling Screen (VGS)⁴ or another equivalent. Generally, these screens are available to the player as a brochure or can be downloaded or completed online at some gaming or public health sites. In the future, this information could be available to players on the gaming terminals and venue kiosks along with access to account summary information. The **primary value** is to **motivate players who may be concerned about their gambling to seek additional information, use available RG tools to manage their play and/or access help services.**
- 1.4 Use of self-screening can be encouraged by venue staff and through social marketing campaigns but will be **voluntary**, subject to self-selection and can be expected to be **used by a minority** of customers. There is minimal value to operators or venue staff as self-identification is intended as a **personal and private assessment tool**. However, screens can be used as a tool for engaging customers especially those whom staff or others are concerned may be experiencing difficulties.
- 1.5 **Third-Party Identification.** This is the method used by venue staff to identify problem gamblers on the floor largely as a **host responsibility** requirement although friends and family can also be educated on signs of risk. Gaming staff is trained to be alert for key behaviours that have a high probability of signalling problem gambling. These triggers and combinations of behaviours are well documented (Delfabbro, Osborn, Nevile, Skelt, & McMillen, 2007; Hafeli & Schneider, 2006; Schellinck & Schrans, 2004) and form the basis of most gaming server intervention programs. This approach is **important for crisis intervention** when patrons are showing observable signs of distress and may offer opportunities for staff to **correct misconceptions or provide education to customers**. However, the practicalities of balancing player observation with other responsibilities means that **many customers experiencing difficulties with their gambling will go undetected** (Reith, 2007; Wynne, Smith, & Volberg, 1994) and **staff often**

¹ See Schellinck, T., Schrans, T. Focal Research Consultants (2006). Assessment of the Behavioural Impact of Responsible Gaming Device Features: Analysis of Nova Scotia Player-card Data – Windsor Trial. http://www.nsgc.ca/pdf/Focal%20Research%20Report%20_2_.pdf

² Ferris, J. & H. Wynne. (2001). The Canadian Problem Gambling Index: Final Report. Ottawa: Canadian Centre on Substance Abuse

³ Lesieur, H. R. & S. B. Blume. (1987). The South Oaks Gambling Screen (SOGS): A New Instrument for the Identification of Pathological Gamblers, *American Journal of Psychiatry* 144: 1184-1188.

⁴ Battersby, M., D. Ben-Tovim, A. Estermann, B. Tolchard and M. Dickerson (2001). The VAGS: A New Australian Instrument for the Detection of Problem Gambling. *Australian and New Zealand Journal of Psychiatry* 35 (Suppl).

experience stress and uncertainty in knowing when and how to intervene (Australian Gaming Council (AGC) 2002; Focal Research and Nova Scotia Video Lottery Self-Exclusion Working Committee, 2004⁵).

- 1.6 **System Identification.** A more recent development in the gaming industry is the use of artificial intelligence (AI) (Svenska Spel, 2007) and the advancement of mathematical predictive modelling in using player tracking data to identify risk (Hancock, Schellinck & Schrans 2008; Schellinck & Schrans 2007; iVeiv & Saskatchewan Gaming Corporation, 2006). Sophisticated algorithms can be developed that identify a significant proportion of problem gamblers with a high degree of accuracy (90%+).
- 1.7 Using only the information typically gathered and stored by player tracking systems, including loyalty programs, gaming operators can now **set parameters and confidence levels for identification and monitoring of risk** (balancing degree and level of precision and tolerance required for false positive versus false negative identification rates of those at high risk for problem gambling).
- 1.8 The **Svenska Spel Playscan** system, developed with the Swedish Gaming Institute and the data-mining company ICU Intelligence, is **voluntary** and dependent upon customer initiative and interest in exploring their risk.⁶ Using the data held in their gaming customer database Playscan was built by Svenska Spel and the Spelinstitute based on theory about problem gambling behaviours and player data from addicted gamblers before they reached problem gambling levels. Specific player data is assessed using neural⁷ and Bayesian networks.^{9,10} Players who are concerned about their gambling can voluntarily access Playscan and the system looks at their personal play data compared to these baseline "networks", and **predicts whether the player is likely to develop problems in the future offering customers tools to assist them in avoiding risk or problem development.** PlayScan does not differentiate between the identification of current or future problem play so Players

⁵ Schrans, T. & Schellinck T. Focal Research Consultants. (October, 2004). Nova Scotia Video Lottery Self Exclusion Process Test . Halifax: NSGC and the Nova Scotia Self-Exclusion Working Committee. http://www.gov.ns.ca/hpp/publications/NS_VLSEP_Final_Report_Jan_11.pdf

⁶ Glick, J. AI in the News. AI Magazine, North America, 28, sep. 2007. Available at: <http://www.aaai.org/ojs/index.php/aimagazine/article/view/2061>. Date accessed: 18 Sept. 2009.

⁷ "Artificial Intelligence (AI) is concerned with building machines that can act and react appropriately, adapting their responses to the demands of the situation. Such machines should display behaviour comparable with that considered to require intelligence in humans" J. Finlay & A. Dix (1996). An Introduction to Artificial Intelligence. UCL Press / Taylor and Francis, ISBN 1-85728-399-6.

⁸ "Neural Network models are algorithms for cognitive tasks, such as learning and optimization, which are in a loose sense based on concepts derived from research into the nature of the brain." B.Muller, J. Reinhardt, M. T. Strickland, (2002). "Neural Networks: An Introduction" (Second Updated and Corrected Edition). Springer-Verlag (New York). ISBN-10: 3540602070.

⁹ Bayesian inference is statistical inference in which evidence or observations are used to update or to newly infer the probability that a hypothesis may be true." Bolstad, William M. (2007) Introduction to Bayesian Statistics: Second Edition, John Wiley ISBN 0-471-27020-2

self-assess current status using a problem gambling screen that is then used to feed back into the system (Angervall, 2008).

While **Playscan claims 90% accuracy in classifying players it is not clear what this performance is referencing**; the overall success of the model in identifying people as having problems or the percentage of problem gamblers successfully detected (e.g., reach) or the accuracy of problem gambling identification (e.g., percent of those identified that are having problems). There is also some bias as only those players concerned about their gambling are likely to use the system and, therefore, identification criteria likely reflects the characteristics of the small number of players who tend to self-identify as problem gamblers.

While the current version of Playscan is voluntary, theoretically the program should be able to be applied to the full player database for general impact assessment (i.e., identification of all those at high-risk for gambling problems). There is no public information available regarding Playscan performance in this capacity as yet nor the effectiveness of the program in reducing risk among those identified as having problems. Regardless, Playscan is still a helpful online tool linking actual play behaviour and identification of risk with the potential to assist players in self-managing risk and problems.

- 1.9 In contrast to AI approaches, Focal uses **Predictive Modelling¹¹ and Association Analysis¹² to customize risk identification to reflect unique market or player characteristics for even greater accuracy and precision**. This is the approach used in the algorithms developed to identify problem gambling in the iCare Gaming System and in assessing the impact of responsible gaming features in the Nova Scotia Player Tracking Data Analysis Report produced by Focal Research for the Nova Scotia Gaming Corporation (Feb, 2007). It is also being adapted and tested for other casino, harness racing and online gaming applications in other international jurisdictions. Such modelling is powerful in finding associations between, in this case, problem gambling and risk and the behavioural, operational, and game outcome data contained in player databases held by gaming operators. The models are built using the best information currently available in a specific database for predicting risk and

¹¹ "Predictive modelling is the process by which a model is created or chosen to try to best predict the probability of an outcome." Geisser, Seymour (1993). Predictive Inference: An Introduction. New York: Chapman & Hall. ISBN 0-412-03471-9.

¹² "Association analysis is the discovery of association rules showing attribute-value conditions that occur frequently together in a given set of data. Association analysis is widely used for market basket or transaction data analysis." J. Han, M. Kamber (2000). Data Mining: Concepts and Techniques. Morgan Kaufmann. ISBN-10: 1558604898

In data mining, Association Analysis is a well researched method for discovering and testing relationships between variables in large databases. It is based on the concept of strong association rules for regularities between products behaviours in large scale transaction data recorded by point-of-sale (POS) systems. For example, the rule found in the sales data of a supermarket would indicate that if a customer buys onions and potatoes together, he or she is likely to also buy beef. Such information can be used as the basis for decisions about marketing activities such as, e.g., promotional pricing or product placements. In addition to the above example from market basket analysis association rules are employed today in many application areas including Web usage mining, intrusion detection and bioinformatics. Focal uses association analysis to link variables in the gaming database to risk and problem gambling.

problems. The model is up-dated every few years to remain current. This means that the algorithms are continually evolving to reflect changes in player and market dynamics and then tested against performance standards.

- 1.10 Using the Focal method, identification of risk for problem gambling can be **voluntary for self-identification** (i.e., players can check on risk score and access tools and/or assistance), it can also be used by operators for **host responsibility** purposes (e.g., direct staff interactions) **responsible marketing** applications (e.g., limit marketing to non-problem gamblers only), and used **anonymously** by researchers and regulators **to assess the impact of operational changes or RG initiatives** by risk for gambling problems.
- 1.11 For example, **Saskatchewan Gaming Corporation** (SGC) uses risk identification **for targeting** staff interactions with **high-risk customers** for **harm minimization and duty of care** purposes. Using the system to identify high-risk gaming clients focuses limited staff resources more effectively and removes the guesswork and stress for staff in determining “who” should be approached. It also permits interactions and outcomes to be linked to adjust interactions to maximize improvement (Davies, 2007)
- 1.12 In the **analysis of the behavioural data gathered by the Techlink player tracking system tested in Nova Scotia** the principal investigators at Focal, Dr. Tony Schellinck and Tracy Schrans, were able to use this method to build a model to assess the impact of the features by risk even though player risk was not specifically gathered for those playing the machines during the trial and the player data was recorded and stored anonymously. Using the CPGI scores gathered for the original panel members (n≈132) Focal was able to develop predictive models (i.e., algorithm) to examine RG impacts by risk for the wider population of regular players in the test market. The small sample size of the panel (n) precluded the use of a hold-out sample to verify the model yet still permitted the researchers to apply the model to the full database of anonymous regular players who played at least once a month during the 6 month trial period (n≈871). This meant **it was possible to assess the impact of the RG features of the system for those at lower versus higher levels of risk.**¹³ An important consideration for the decision-making process.
- 1.13 These paradigms work because they **take into account combinations of extreme behavioural patterns that a large proportion of problem and high-risk gamblers exhibit.** Using the data stored by player tracking systems means that these behaviours can be **measured with far greater accuracy** than in the past by generating literally **hundreds of variables** measuring different aspects of player

¹³Schellinck, T., Schrans, T. Focal Research Consultants (2007). Assessment of the Behavioral Impact of Responsible Gaming Device Features: Analysis of Nova Scotia Player-card Data – Windsor Trial. http://www.nsgc.ca/pdf/Focal%20Research%20Report%20_2_.pdf

behaviour that can then be included in the paradigm.¹⁴ This is **only possible** through the **use of player tracking data** utilizing the same methods employed by industry for **master data management (MDM) systems**.

1.14 The **success of the models is also due to the customisation process**. While certain variables are cross-jurisdictionally valuable each model needs to be calibrated for the specific customer market as there will be different behaviour profiles depending on the legislation, market characteristics, and the nature of the gaming venue (wide-area versus local-area casino); most markets have unique characteristics that need to be accommodated to achieve an optimum solution.

1.15 **System Identification of risk for problem gambling can potentially be used for four primary applications:**

- To **inform players** of their potential level of risk for experiencing gambling problems or alert them to changes in their risk level;
- To **alert staff** to those customers (e.g., loyalty members) that are triggering for high risk in order to more effectively target host reasonability efforts;
- For **marketing purposes** to ensure promotional campaigns or inducements to gambler are primarily directed to non-problem gamblers;
- For **evaluative purposes** to assess the impact of interventions, policy or practices by risk for gambling problems.

1.16 The use of player tracking data to develop an effective risk identification system requires specific expertise. Contrary to evidence gathered from self-reported survey data, **among regular players frequency of involvement is not correlated with problem gambling and the amount spent is only weakly associated** (Focal Research and NSDOH, 1998; Schellinck & Schrans, 2007 p.98)¹⁵. Therefore, simply targeting frequent, high-spenders will only identify venue operator's best customers while overlooking the majority of problem gamblers who fall at lower spending segments among the regular player base.

1.17 For example, risk may be proportionately greater among high-tier (i.e., high-spending) player segments; however, these players comprise a small percentage of the overall player base and, therefore, will also comprise a smaller proportion of those having problems. The majority of those experiencing problems with their

¹⁴ Hancock, L., Schellinck, T., & Schrans, T. (2008). *Gambling and corporate social responsibility (CSR): Re-defining industry and state roles on duty of care, host responsibility an risk management*, Policy and Society, 27, 55-68.

¹⁵ In the Windsor Trial in Nova Scotia use of a player card was mandatory and all play sessions over the six month period were recorded by the system. The trial occurred over a continuous six month, 22 week period from Oct 3, 2005 to March 25, 2006. The data for Regular Players (i.e., those playing once a month or more) were segmented and analyzed by risk for gambling problems (Lower-risk versus Higher-risk Players). Amount of time and money spent gambling as well as various other behavioural indicators were found to differ significantly by risk, however, frequency of play was similar among both groups consistent with the results of the 1998 Nova Scotia REgular VL Player's Survey. Differences associated with frequency of play are largely due to study that do not control for regular playing patterns and instead are largely comprising casual players to regular players.

gambling are expected to fall among the low-tier (i.e., lower-spending) player group who make up most of the player base. Hence, focusing on amount spent will under-identify those on fixed or lower incomes or who have fewer resources but are still suffering significant impacts from over-gambling (Schellinck, Schrans, Zou, & Focal Research in press)¹⁶.

- 1.18 There also **needs to be caution exercised in how the information is used**. Much debate over the conceptualization and measurement of problem gambling has occurred over the past twenty years (c.f. Dickerson, 1993; Lesieur, 1994; Volberg, 1996; Walker & Dickerson 1996; Svetvia & Walker 2008). This led to the development of numerous gambling screens, although **none were intended for self-administration and all have been designed and tested as reflective constructs** (c.f. South Oaks Gambling Scale, Leisure and Blume 1987, 1993; the Canadian Problem Gambling Prevalence Index, Ferris and Wynne 2001, and the Victoria Gambling Screen, Ben-Tovim et al. 2001).

Reflective constructs assume that the underlying latent construct **causes** the observed variation in the measures (Nunnally 1978). That is, the construct assumes a latent variable exists (e.g., problem gambling), and that the direction of causality is from the latent variable to the items measured (e.g., because one is a problem gambler they will endorse or exhibit the various items included in the construct).

Most problem gambling screens are summed to arrive at an overall score. This means that **higher scores do not necessarily indicate that the person is exhibiting greater risk but rather that there is greater certainty there the individual is experiencing difficulty** (Schellinck and Schrans, 2008; Schellinck, Schrans, & Bliemal 2010). This is an important distinction since the lower scores do not signal a lack of risk but rather less certainty someone is at risk. Therefore, **while those identified by most screens as problem gamblers** (e.g., Pathological (Sogs); Severe Problem (CPGI)) **will likely be at high-risk, those that do not trigger at this level may or may not be having problems**. While there is lower probability that these players are having problems, stakeholders cannot assume that those who do not score on such screens are non-problem gamblers and can be given 'a green light'.

- 1.19 There is also evidence **that new screens for identifying risk are required for use with player tracking data** as traditional screens were largely intended for use in clinical applications identifying problem gamblers in treatment populations rather than for prevention and responsible gaming. Focal Research is currently working with the Ontario Problem Gambling Research Centre testing a new risk and harm measure designed specifically for use with machine gamblers and intended to identify pre-harm risk for prevention applications as well a gambling harm and problem gambling for assessing harm reduction efforts. This work is a continuation

¹⁶ Dr. Schellinck and Zou, Yi will be presenting two papers for Focal Research at Macau University in December 2009: *New instruments for measuring risk and harm* (Schellinck, Schrans, Zou, Bliemal & Focal Research) and *Using Player Tracking Data to Identify Risk, Harm and Problem Gambling* (Schellinck, Schrans, Zou Yi & Focal Research). The papers will be published in early 2010 by Macau University.

of research initiated in Nova Scotia in 1998 and in Victoria funded by the Gambling Research Panel and Victoria Department of Justice.¹⁷ The final paper is due spring 2010 and will be posted on the OPGRC website (Schellinck, Schrans, Bliemel & Chambers, in press).

- 1.20 Logic and experience with loyalty data analysis and other player tracking data confirm that it is **impossible to identify all high-risk and problem gamblers using only behavioural data** at any given time and hence the reason for targeting all regular players with player management tools and RG options. However, it is definitely possible to use this data to identify with a **high degree of accuracy (90%+)** a significant proportion of **gaming customers having problems or likely to have problems** as well as those who are not having problems. **When used consistently over time most of those who are at high-risk for problem gambling will be identified by the system.**
- 1.21 This area of inquiry is still in its infancy but is generating substantive interest among all gaming stakeholders.

Self-identification and venue staff identification are both methods of problem identification that do not require player tracking capability but still offer benefits to players and operators. However, access to player tracking data opens a whole new world in terms of understanding the interplay between gambling behaviour, policy, practices, and risk for gambling problems that is not possible through traditional self-reported and summary data sources. The ability to use player tracking data to monitor and profile gambling behaviour and risk is generating new information about gaming impacts we could not measure before with any degree of accuracy. Previously it took substantial time, money, and effort to obtain large representative player samples in order to obtain conclusive results especially for specific risk segments like problem gamblers. It is shifting our perspective about gambling and providing another important data source in providing timely accurate feedback about what is and isn't working to mitigate harm especially in terms of corporate social policy and commitments to ensure a do-no-harm agenda. It is also permitting operators to set and meet new standards for customer care providing 'real-time' data for 'real-time' decision-making.

¹⁷ Schellinck (2004) – Assessment of Crown Loyalty Data for Purposes of Gambling Research and Monitoring of Trends, August 2004, Report prepared for the Gambling Research Panel. Melbourne, Victoria.

Schellinck, T, (2006) The Victoria Self Administered Problem Gambling Screen: Development Research., Presentation 16 NAGS Conference, Sydney, Australia.

2.0 Using Player Tracking to Identify and Manage Other High-Risk Behaviour

- 2.1. The facility to **track spending** and **set monetary limits** is consistently ranked as a potentially **effective measure** by both gamblers and gaming managers.¹⁸ **Self-exclusion is also universally supported** as a basic player service. However, the way in which these features are implemented has significant implications for success in either **protecting consumers from continued harm** (e.g., self-exclusion; limited play) or in **preventing harm from occurring** in the first place (e.g., time and money limits).
- 2.2. In Melbourne August 8-9, 2007 the Australian Productivity Commission convened a roundtable examining the role of Behavioural Economics in framing consumer policy.¹⁹ ²⁰ Previously the Commission had considered the policy implications of behavioural economics for products such as tobacco (1994) and gambling (1999) recognising that for some types of consumption **individuals do not necessarily act rationally and that there is damage associated with excessive consumption.**
- 2.3. While **behavioural economics**, as an empirical social science, is not necessarily considered effective in helping to set new policy, it **assists in identifying and framing the problem** in order to obtain the insight and information necessary to inform and maintain good public policy decisions.
- 2.4. For example, there is general agreement and heavy emphasis in the gaming industry regarding the value of ensuring **gaming consumers are informed and educated** and that policy decisions surrounding gaming are **evidence-based**. However, a behavioural economic approach would suggest that the amount and quality of the information provided will mediate the subsequent value and impact of consumer education. It may be that customers are **getting too much information** and are being **overloaded with data** that has little personal value or benefit for the gambler and thus ends up either **having no impact or negatively contributes to further confusion or misunderstanding.**²¹

¹⁸ Caraniche Pty Ltd. (2005). *Evaluation of Electronic Gaming Machine Harm Minimisation Measures in Victoria*. Victoria: Office of Gaming and Racing Victorian Government Department of Justice .

¹⁹ Behavioural Economics and Public Policy Roundtable Proceeding, Australian Government Productivity Commission April 2008

²⁰ According to Gary Banks the Chairman of the proceedings: "The roundtable examined the policy implications of behavioural economics - a relatively new field that applies insights from psychology to economic issues and analysis. Participants discussed the contribution behavioural economics can make to a broader understanding of people's motivation and behaviour in markets and the implications for policy and regulatory approaches. Behavioural economics has particular relevance to consumer policy, and insights gained through the roundtable made a useful contribution to the Commission's inquiry on Australia's consumer policy framework". Gary Banks, Page V Foreword April 2008)

²¹ P. 75 Hillman, 2006 as cited by Joseph P. Mullholland 4. Behavioral Economics and the Federal Trade Commission Behavioural Economics and Public Policy Roundtable Proceeding, Australian Government Productivity Commission April 2008

- 2.5. While general information on gambling appears to be insufficient in achieving behavioural change (GRA, 2007) **specific information on personal amounts spent may be extremely helpful for customers in remaining on budget.** This is the equivalent of providing drivers with a speedometer so they can see how fast they are going and adjust according to changing conditions rather than simply telling them to travel at a safe speed.
- 2.6. Regarding “evidence”, **academic research and lab testing are insufficient in terms of informing social policy.** Stakeholders need to have some idea about the actual practical impact of certain policy and practices. It is very hard to predict how consumers will respond which is why it is so important to conduct field tests, pilot studies and institute feedback mechanisms for constant assessment of the interplay between consumers, products, policy and practices. **This implies an iterative process where ineffective policies are identified and discarded and successful policies retained.**
- 2.7. The key argument for regulated gambling worldwide is **to assure fairness as well as player and community protection from criminal impacts and exploitation.** There have been several examples where wide-area EGM networks have been compromised (McMullan & Perrier, 2003, 2007). One of the key reasons the breaches were undetected were due to the inability of the existing machine monitoring systems to detect such tampering. **Monitoring player tracking data can detect distinctive or abnormal play patterns** as well as the impact of other changes implemented by gaming operators.
- 2.8. In North America there is also emerging evidence that **loyalty data can act as a receipt for play** not only for social responsibility and duty of care applications (e.g., identification of problem gambling or misappropriation of funds) (Sasso and Kaladjic, 2006) but also for taxation and accounting purposes.

For example, in the US winnings of \$1,200 or more on slot machines must be reported to the Internal Revenue Service (IRS). However, in tax tips provided by Bankrate.com in February 2009, analysts were advising clients to offset gambling taxes owed on winnings by also keeping track of losses. Casino loyalty systems were noted as monitoring this information. Thus, account summaries are potentially an important resource in validating income tax claims especially for regular players who are the consumer most likely to have enough gambling activity to derive any tax benefit from tracking of wins and losses.

- 2.9. Gaming operators are already **required to track and report upon large gaming transactions** (e.g., \$10,000 + US) in compliance with anti-terrorism initiatives (2006 Anti-Money Laundering and Counter Terrorism Financing Act (AML/CTF)) and there is additional potential for using player loyalty data (i.e., player tracking to monitor the movement of smaller amounts of money).
- 2.10. In Ontario Canada, a 2004 Royal Canadian Mounted Police (RCMP) investigation uncovered **use of slot machine and casino gambling to launder money** from

drug trafficking. The criminals were depositing amounts that fell under the \$10,000 mandatory reporting threshold to the Financial Transactions and Reports Analysis Centre of Canada (FINTRAC) and would be cashed-out for casino cashier cheques for deposit to legitimate bank accounts making it difficult to detect or track.²²

- 2.11. **Predictive-modelling technology using consumer tracking** is now poised to **address a wider array of gaming applications**. The advanced analytics made possible by predictive modelling give gaming operators tools to **not only detect** more fraud but **to predict fraud**.
- 2.12. **New technologies** are rapidly transforming **how consumers buy goods and services**. Innovations (e.g., digital wallets, mobile payments e-commerce) are driving a need for a collaborative approach in detecting fraud, criminals, money laundering, etc. The use of these collaborative applications is often mandated by regulatory bodies as in anti-money laundering (AML); or the initiative is directly taken by boards of banks or corporations, in order to detect and/or prevent internal/external fraud. Such applications often require the transactional data to be monitored and the entire master data set be analyzed to depict hidden relationships between organizations and individuals.
- 2.13. A decade ago "companies [were] only beginning to understand how to use and collect customer information" and privacy advocates were concerned that in the absence of regulation and "legal safeguards" consumers would "vulnerable to the wholesale trafficking of incredibly detailed portraits of their lives as consumers".²³

"From large retailers to telephone companies, on-line bookstores, and casinos, the use of powerful computer systems to capture, organize, and analyze customer data is big business. The quest to gain a competitive edge through improved service is motivating companies to find out who they're selling to, what makes those customers happy, and what they will ultimately buy.

Windsor Casino Ltd. in Ontario is betting today that the technology will help boost its profits.

"Prestige" player cards are at the heart of Windsor Casino's system, which aims to create life-long profiles of its most regular gamblers. Before obtaining a card, patrons must hand over their name, address, birth date, and information about hobbies and special interests.

Every time a gambler plays a slot machine or goes to a games table, the prestige card tracks how much they spend, how long they stay at a table or machine, and the size of their individual bets. No matter which casino you visit, the information they collect about you will be used to try to draw you back in.

" Nancy Ziolkowski, vice-president of marketing at Windsor Casino in 2006 , says she can go into the company's computer and pull out the names of a specific type of

²² Casino Loophole lets criminal launder cash, RCMP FEars, CBC News, Dave Seglins
<http://www.cbc.ca/canada/story/2008/05/19/casino-launder.html> last up-dated May 2008

²³ The Globe & Mail Thursday, October 29, 1998 Getting To Know All About You: Promising Perks And Freebies, Companies Are Gathering Personal Information About You With Every Swipe Of Your Customer Loyalty Card pages C1,C4

gambler, such as one who likes only dollar slot machines, comes once a week, and plays for exactly two hours.

"This is the wave of the future for any business that relies on a steady, frequent clientele", says Ms. Ziolkowski."

The Globe & Mail Thursday, October 29, 1998 Getting To Know All About You: Promising Perks And Freebies, Companies Are Gathering Personal Information About You With Every Swipe Of Your Customer Loyalty Card pages C1,C4

Player tracking has come a long way in the last ten years offering much promise and potential for gaming oversight, corporate social responsibility, identification of risk and player self-management as well as for customer retention and business development. The convergence of player tracking technology with restructuring of the gaming market provides a unique opportunity to build foresight into the system to meet current and evolving information needs.

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