strategic science

Informing play management systems: International review of limit-setting tools

> The Massachusetts Gaming Commission (MGC) **Responsible Gaming Framework:**
> *is designed to provide structure for responsible gaming practices of Massachusetts Gaming Commission licensees and is based on the commitment by the Massachusetts Gaming Commission and their licensees to the guiding value of ethical and responsible behavior.*

A key element of the Responsible Gaming Framework is *Strategy 2: Support Informed Player Choice,* which sets out measures to support players' efforts to responsibly manage their gambling. Section *2.2 Play Information and Management Systems* describes specific tools to implement this strategy, including the ability for players to pre-commit to limits of money and time (hereafter referred to as "limit-setting") for their gambling. Several gaming industry stakeholders have expressed concerns regarding such tools. These concerns focus, in part, on whether the tools will be feasible to implement and cost-effective in relation to the anticipated benefits. Operators in many jurisdictions have implemented limit-setting features, and governments have deemed them economically feasible when weighed against the anticipated profits to operators from gambling. These jurisdictions offer valuable practical experience in the development, implementation, evaluation and refinement of such tools.

Issues regarding effectiveness are more difficult to address. Historically, gambling researchers have targeted the use of limit-setting or "pre-commitment" tools as a method of reducing the harm caused by problem gambling. As a result, a majority of the research literature has focused on evaluating attitudes toward limit-setting and limit-setting practices of problem gamblers. In this regard, the extant empirical research does not offer definitive scientific evidence that limit-setting tools are effective, largely because "methodological flaws such as low participation rates, compromised data integrity resulting from card sharing and failure to control for concurrent gambling outside trials limit conclusions drawn regarding the effectiveness of limit-setting"(Ladouceur, Blaszczynski, & Lalande, 2011). In addition to methodological limitations, the restricted focus on harm caused by problem gambling seriously limits the applicability of this research. It is well known in the economic literature that people behave in ways contrary to their stated intentions when it comes to money and risk (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992). These discrepancies are common to all individuals, not just those for whom self-control over money is a challenge.

Limit-setting was never intended to focus solely on individuals with problems. Rather, the notion, with its origins in the economic literature, was meant to describe strategies that empower individuals in general to establish reasonable boundaries for expenditure, irrespective of context. Future rigorous scientific investigations may well find that limit-setting strategies are most useful to recreational gamblers, particularly those who never move along the spectrum to disorder because they develop an awareness of their behavioral patterns and ensure they enjoy themselves within sound limits.

Objective

To more wholly address the concerns regarding feasibility and cost- effectiveness in relation to the anticipated benefits, a team of research and policy experts (see Appendix A – Key Biographies) set out to: (a) gather information from the practical experience of other jurisdictions, (b) draw on existing scientific knowledge, and (c) make expert recommendations appropriate for the State of Massachusetts. The team includes two of the leading contributors to the scientific literature on limit-setting, Dr. Lia Nower and Dr. Alex Blaszczynski. This report documents the team's findings, discussion and recommendations.

Background

The concept and discussion of limit-setting are rooted in economics and investigations of consumer choice. In his seminal work, Strotz (1955) referenced the mythological Ulysses, who tied himself to the mast of his ship rather than face the temptation of the sirens, to support the proposition that humans are "dynamically inconsistent" in their choices and ability to control behavior. In response, wisdom directs some to "pre-commit" to a fixed standard to limit their behavior in times when control was lacking.

Thaler (1980) theorized that limit-setting originates with the notion that "psychic" or "sunk" costs actually guide future behavior: The more we invest in a product or behavior, the more we will continue to persist, even in the face of mounting loses or other negative consequences. The antidote to this is to induce feelings of responsibility or regret *before* costs are incurred, thereby minimizing choice and limiting losses. Fear of regret and the desire for responsibility, then, leads individuals to adopt limit-setting strategies to avoid future negative consequences (Strotz, 1955; Thaler 1980).

In gambling, there is a common misconception that limit-setting should be tied to level of problem gambling severity. However, the economic literature makes it clear that all people make inconsistent choices and should be able to set limits, not just those who manifest symptoms of impaired control. It is important, therefore, to establish mechanisms that encourage those who gamble in venues to set limits on the amounts of time and money they will spend gambling, prior to actually engaging in play. As in economics, the system should be based on the belief that we can establish strategies in a calm and thoughtful present state to limit our options in a future state of reduced self-control, excitement, or recklessness.

As summarized in Ladouceur, Blaszczynski and Lalande (2011),

> Research shows that gamblers experience high levels of arousal (Wilkes, Gonsalvez, & Blaszczynski, 2010), lose track of time (Ricketts & Macaskill, 2003) and experience dissociative states (Wanner, Ladouceur, Auclair, & Vitaro, 2006), while gambling, making it difficult to monitor and control behaviours (Carver & Scheier, 1998).

> The intent (of limit-setting) is to promote deliberate decisions regarding expenditure in advance of play, and, by imposing barriers, to ensure compliance with such decisions when emotionally aroused after losses.

Approach

Limit-setting tools have been implemented in five countries: New Zealand, Singapore, Norway, Sweden, and Canada (the Province of Nova Scotia, and to be launched in the Province of British Columbia in early 2015) and piloted in four Australian States (South Australia, Queensland, Victoria, Western Australia). Documents were gathered from all of these jurisdictions. The detailed analysis presented here focuses on the jurisdictions in New Zealand, Canada, Norway, Sweden and Australia. These jurisdictions were selected based on extensive available documentation, relevance, and willingness to disclose details of implementation in interviews.

The review sought to understand:

a) Objectives, i.e., what they are trying to achieve with the limit-setting program;

b) Target audience;

c) Key features of the limit-setting tools, e.g., mandatory or voluntary, types of limits, method of access, privacy protections, software/ hardware, customer and technological interface;

d) Customer response;

e) Marketing;

f) Staff training;

g) Incentives;

h) Perceived and evaluated effectiveness;

i) Best and emerging practices;

j) Implementation process and challenges;

k) Timelines including unanticipated delays;

l) Cost;

m) Lessons learned; and

n) Any planned changes

The team first undertook a comprehensive document review followed by key informant interviews. Interviews were conducted to confirm and contextualize findings and to address gaps in the document review. These sources informed the recommendations:

1. Comprehensive document review of evaluation reports, regulations, scientific literature, media articles, and other commissioned reports for individual jurisdictions and across multiple jurisdictions;

2. Key informant interviews to provide a range of perspectives from those with first-hand experience with implemented limit-setting tools. Three perspectives were sought, (a) government, regulator or other lead agency; (b) gaming operators; and (c) gaming technology companies.

Findings of the review are presented within jurisdictions. In the Discussion section, findings are analyzed and discussed across jurisdictions and provide the rationale for the recommendations.

Findings by jurisdiction

Table 1. Characteristics of international limit-setting programs provides an overview of limit-setting and play management programs that have been implemented or piloted in each jurisdiction. The table allows comparison across jurisdictions of: the types of limits players can set (monetary and time, duration of limits); whether the program is mandatory or voluntary; whether they related system is network-, machine- or device-based; and whether the tools are accessed using a stand-alone card or integrated with the player loyalty card.

Table 1. Characteristics of international limit-setting programs

Jurisdiction	Program Name	Program Type	Limit Types	Mandatory OR Voluntary	Network, Machine or Device Based Systems	Stand-Alone Card OR Integrated with Loyalty Card	Operator	Tech Company
New Zealand	SkyCity's Voluntary Pre-Commitment Programme	Voluntary pre-commitment on poker machines	Monetary and time limits	Voluntary (mandatory limit setting for online lottery MyLotto)	Network, with access from machine, kiosk and customer service	Linked to loyalty card	SkyCity	Bally Technologies Inc
Nova Scotia	My-Play System	Card-based player tracking system for VLTs	Monetary and time limits, ability to stop play immediately, access historical information and in-progress play activity	Mandatory for machines in 2012, mandatory for players to have card in 2012, voluntary to use features	Network-based	UNCERTAIN	Nova Scotia Provincial Lotteries & Casino Corporation	Techlink Entertainment
Norway	Spillerkort (player card)	Smart card, can be used on VLTs, introduced in 2009	Monetary and time limits, play summaries, risk assessment, timeouts, mandatory limits of $70 CDN per day and $390 CDN per month	Mandatory for operators and players. Government sets pre-commitment limits on cards, players can set lower limits	Player account information stored on central server	Player card tied to incentives such as free games, restricted game access, and donation of stake to local cause	Norsk Tipping	UNCERTAIN
Norway	Belago (name of RG VLT)	RG VLT, gamblers must use player card on these machines	Mandatory monetary limits and breaks in play, lower bets and lower prizes, and player exclusion options	Machines have mandatory pre-commitment technology	All VLTs are connected to a central server	UNCERTAIN	Norsk Tipping	UNCERTAIN
Norway	Multix (name of RG VLT)	VLTs with strictly cashless card-based system with inbuilt pre-commitment options	Time and monetary limits, max $400 NOK ($80) daily and $2200 NOK ($440) monthly, bet limits, $50 NOK ($10), win limit $1500 NOK ($300), 10-minute play break after 1 consecutive hour, permanent exclusion	Machines have mandatory pre-commitment technology	All VLTs are connected to a central server	UNCERTAIN	Norsk Tipping	ACE Interactive
Sweden	Spelkortet	Pre-commitment card	Monetary limits, time limits, self-exclusion, information about money spent, and a self-assessment test	Mandatory limit setting for online poker, voluntary for all other types of gambling. Player-led	Device-based	Loyalty card linkage	Svenska Spel	UNCERTAIN

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				limits as of 2009, not operator imposed				
Victoria	UNCERTAIN	Pre-commitment on machines	Player-set time and loss limits	Mandatory December 2015 for machines, voluntary for players	Magnetic strip cards, separate card reader & displays, kiosk, online registration, loyalty scheme linkage	Loyalty scheme linkage	UNCERTAIN	INTRALOT Gaming Services Pty Ltd
Victoria	Play Safe Limits	Pre-commitment available to Crown Signature Club members	Pre-commitment on gaming machines and fully automated table games. Daily time, loss, and spend limits, annual spend limits	Voluntary for operators and players	Magnetic card, home-based data storage	Loyalty card linkage (points paused on exceeding set limits)	Crown Melbourne and Crown Perth	UNCERTAIN
South Australia	Playsmart	Pre-commitment system operating in conjunction with Jackpot card, EGM loyalty scheme	Monetary and time limits (daily, weekly, monthly)	Voluntary for operators and players	Area networked	Loyalty card linkage	UNCERTAIN	WorldSmart Tech
South Australia	Maxetag	Budget setting feature added to existing Maxetag loyalty system	Monetary, budgets (daily)	Voluntary for operators and players	Electronic tag, separate console on EGM, kiosk, central monitoring system	UNCERTAIN	UNCERTAIN	Global Gaming Industries
South Australia	Casino Regulations, 2013	Casino pre-commitment system operating in conjunction with loyalty scheme	Expenditure limit (daily or weekly) (default $100/day)	Voluntary for operators and players	Loyalty scheme linkage, on screen or ancillary screen alerts, networking capabilities	Loyalty scheme linkage	UNCERTAIN	UNCERTAIN
Queensland	Simplay	EGM cashless gaming scheme including kiosk operated limit settings	Monetary and time limits (daily)	Voluntary for operators and players	Cashless membership card linkage, kiosk, PIN requirement, EGM screen display	Cashless membership card linkage; Simplay card and loyalty card are one in the same	UNCERTAIN	Maxgaming
Queensland	eBET/Odyssey	EGM card-based, cashless gaming with pre-commitment as an optional feature	Expenditure limit (daily, session)	Voluntary for operators and players	Magnetic cashless membership card linkage, balance display screen	Magnetic cashless membership card linkage	UNCERTAIN	Odyssey Gaming Limited/eBET Limited

New Zealand

New Zealand offers perhaps the most comprehensive and current experience with limit-setting tools. Interviews were conducted with the regulator, the technology company that developed the limit-setting tools, and the gaming operator that implemented the system.

The introduction of the voluntary pre-commitment (VPC) module in both New Zealand Casinos was the result of collaboration among the regulator, gaming operator, and gaming technology company. New Zealand is one of the more strictly regulated gambling jurisdictions in the world. This includes prohibiting promotions or bonuses at the individual level. A compelling feature for gaming operators of the proposed Bally Executive Bonus Suite is its ability to provide bonusing to the individual player at the machine the individual is playing. In a negotiation with the regulator, the VPC module was exchanged for bonusing and implemented across New Zealand, SkyCity in Auckland and Christchurch, Wellington. The new regulatory standard ties pre-commitment to the promotion module of the gaming management system. The regulator viewed this as a cost-effective solution to balance commercial interests and trade off benefits.

Key aspects of the system include:
- Limit-setting is voluntary
- Integrated with loyalty card; loyalty card is optional for players
- Limits are tracked across multiple machines, even multiple machines played simultaneously by one player
- Casino chooses system. Separate software application is integrated with gaming management system. A display manager takes over part of the screen from the gaming application during limit-setting and other play management functions.

Limits can be set: at customer service, stand-alone kiosk, and on machine.
Limits by day, week, month include:
- Win/loss limits
- Amount of time
- Turnover, coin in (no players choose this)

Changes to limits: Lower limits take effect immediately; increases are delayed 24 hours. Notifications are provided to players as they reach 60%, 90% and 100% of their limit.

Once they reach their limit: Players must acknowledge that they have reached limit; are disqualified from promotion, comps (complimentary items and services) and rewards; but can continue to play.

Tools were positioned as part of transparency and informed choice. Marketing and promotion was minimal. Some education materials were provided at the casino, focusing on how to use the tools, but not promoting their potential benefits. No incentives were offered.

Informants were not able to fully disclose cost but indicated it includes a per machine fee of $100 for the VPC, maintenance, trend analysis maintenance fees, and customer support 24/7.

Implementation issues

Informants from all three perspectives reported no major issues with implementation. Informants reported this is likely due to the fact that the regulation posited very specific guidelines regarding limit-setting which made it easier to build to specifications in New Zealand than in markets where requirements are not well defined. Issues were noted, however, with regard to customer understanding of the tools. They undertook the following modifications to address these issues: improving the screen display, messaging and button location, extending access from kiosk-only to customer service and on machine, and increasing communication efforts, including staff training.

Overall, based on their experience, informants found the following features to be the most important aspects of a successful system:

- Positive positioning: Convince players this is a good tool for self-management.

- Ease of access: Make it as easy as possible and comfortable for people to register.

- Simplicity: Roll out product first with most simple limits to let customers get used to it.

- Cultural sensitivity: Consider and adapt to the cultural/language needs of the population. For example, the New Zealand system over-estimated English language literacy and cultural differences. In response, the operator added Chinese to the on-screen display, produced materials in multiple languages, and developed messages to address cultural differences in order to increase uptake among Asian players.

- Maximizing uptake: Low uptake is partly due to the stigma of the tool being positioned as targeted to people who have control issues. Address stigma by positioning for the broad player population and ensuring privacy in limit setting, e.g., screen visibility from other players.

- Incentives: Consider the capacity to provide loyalty points for using tools. This would entail a simple technological addition to the existing module and could include points for maintaining limits.

- Marketing: Use multiple forms of communication and marketing including direct mail to card holders, ambassadors on the floor to help understand tools, and dummy machines to show the new product and how it works.

- Staff training: It is imperative to get staff invested in proactively discussing limit-setting with players in casual conversation. Provide staff with information needed to teach and present.

- Machine reminders: Notifications should be casual and non-threatening, similar to a cake timer or message on a child's Playstation. Ask: "Is there a time you want to be gone by today?"

- System reporting: Improve the system reporting functionality to meet information needs of casino staff.

Although systems may be capable of tracking limits across multiple properties, some informants recommended limits apply to a single property. Tracking across multiple properties sets up a challenging dynamic that may compromise competition, and introduce some technological issues if platforms or player card formats differ.

Nova Scotia, Canada

The history of limit-setting tools in Nova Scotia is perhaps the richest source of lessons learned. Aside from the loss limits established in the lone U.S. State of Missouri from 1994 to 2008, Nova Scotia, Canada was the pioneer of limit-setting and other play management tools. According to informants in this Province, relentless political pressures and frequent policy changes over the course of several years strongly impacted the implementation of these tools. In political debate and public discussion, the Video Lottery Terminals (VLTs) located in hospitality venues were identified as the source of highest revenue and strongest association with gambling problems – making them controversial. As a result, limit-setting and other play management tools were directed at these machines; casinos in the cities of Halifax and Sydney were exempt.

A 2005 Responsible Gaming Strategy included a card-based system for player information and limit-setting tools. The system was piloted in a medium-sized community that was geographically distinct and had representative population characteristics. The pilot was changed from voluntary to mandatory in response to low uptake. Resistance to mandatory use during the pilot resulted in a decrease in revenue and increase in customers travelling to the nearest First Nations Casino.

In 2007, the government announced that the pilot would be expanded to a full provincial roll-out to all VLT venues. Back system development of the technology was lengthy and complex for use with five different VLT vendors and terminal types. The technology was built from scratch by a local firm that eventually proposed a small touchscreen with card swipe technology on each machine.

Under the system, called "My Play," players could choose to access features using their player card: (a) account summary with information on spending per day, month and year; (b) summary of wins and losses for current playing sessions; (c) options to set time and money limits; and (d) self-exclusion or access limit-setting.

In 2010, the program was launched as voluntary for players to use. A 2011 Responsible Gaming Strategy called for the program to be made mandatory. In April 2012, the Responsible Gaming Device (RGD) and compulsory player card were integrated into VLT play. At this point earlier signs of concerns and resistance fully manifested themselves. These included:
- 17% decline in revenue;

- Player concerns regarding the privacy of personal information being collected;

- Players' mistrust of Government surveillance of gambling expenditure, believing

    o   this information would imperil their eligibility for government income programs (employment insurance, social assistance) and/or

    o   government would use the data to identify problem gamblers and send information to their homes where their partners and families could see it.

- Players' myths, including beliefs that payouts were adjusted within play sessions of individual players. Players reported changing cards frequently to make the machine think it was a new player and "beat" the payout tables;

- Retailer concerns over business profits. Many shared their financial statements with the gaming operator and government officials that clearly showed they would not be able to stay in business without VLT revenue. Many jobs were at risk in an already depressed economy.

"Light enrollment" was introduced in response to the concerns. With light enrollment the player did not have to register any personal information and could use as many player cards as they wished. This led to further problems. With full enrollment, players could continue to access their play history if the card were lost or they forgot their PIN, but not with light enrollment. However full enrollment dropped to almost zero; 99.9% used light enrollment. Initially 25,000 cards were used per week from a total player base of 100,000. After six months, 1,000,000 cards were used; by the end of the third year 2.4 million cards had been used. In some cases, retailers were making several light enrollment cards available with the PIN numbers written on them with black marker.

The program was withdrawn in September 2014. The reasons cited for the withdrawal included low usage and multiple card usage by individual players. Other reports indicate that usage correlated to a $47.5 million decline in VLT revenue between 2012 and 2014 and a proportion of high frequency gamblers found the features useful. Research commissioned to evaluate the effectiveness of the system was severely hampered by the policy changes and delays between announcement and implementation of these changes. The system was expensive to implement (approximately $15M) and to operate ($4M) annually. It involved a separate back end system and hardware.

Though the outcome was very different, informants from Nova Scotia echoed many of the same suggestions as New Zealand for the development and maintenance of a successful limit-setting system:

- Strategic planning and implementation: Ensure consistent conceptualization, implementation and evaluation of the system.

- Positive positioning: Avoid stigma and reduce resistance by positioning the system as a benefit. Positioning limit-setting as a responsible gambling tool led players to believe it was not for them. They must recognize the value for all players.

- Integrating with loyalty program: Integrate the system with the casino loyalty program with similar benefits and incentives for use. Players need to see value in the program.

- Easing access: Provide main screen to access "player service windows."

- Offering multiple opportunities to set limits: Ensure players who decline to set limits understand what they are saying 'no' to, and, after a certain number of visits or other threshold, ask them again if they would like to set limits.

- Simplifying: Keep the system very simple with defaults for dollar amount and favored daily limits. Avoid giving too many options.

- Player testing: Anticipate the skepticism, especially with new technology, and make sure everything is done right and pre-tested before implementation.

- Marketing: Do a better job than in Nova Scotia of communicating.

A final note, Nova Scotia is part of the Atlantic Lottery Corporation (ALC). The remaining members of ALC (provinces of New Brunswick, Newfoundland and Labrador, Prince Edward Island) have benefitted from the Nova Scotia experience and the advances in technological solutions; they are implementing the GTech voluntary pre-commitment system ($50,000 annual licensing fee) in 2014. Nova Scotia considers the availability of play management tools, including limit-setting, to be an industry best practice, and will continue to monitor available solutions.

A second Canadian Province, British Columbia has announced they will be launching the Bally Executive Bonus Suite with the Voluntary Pre-Commitment module in early 2015. They will be positioning the limit-setting system as budgetary tools for all players.

Norway

Electronic gaming machines (EGMs), once widely accessible in Norway, were banned in 2007 in response to growing concerns over the relationship of EGMs to problem gambling. In 2009, new video lottery terminals (VLTs) were introduced in the country under the governmental operation of Norsk Tipping. The VLTs, connected to a central server, offered several harm reduction features: (a) bet and spending limits; (b) mandatory breaks in play; (c) smaller prizes; (d) no autoplay, and (e) self-exclusion options. Players were required to register for a mandatory player card with a chip rather than cash, encrypted with age, gender, address and phone number. The card stores play history including the games played, number of tickets purchased over a specific time frame with date and location of the purchase and outcome of the wager. In addition features, Machines are shut down at night.

VLTs are of two types: Multix machines at kiosks and Belago machines on bingo premises. There are some differences in responsible gambling features between the two types of machines. Belago machines feature higher maximum prizes, jackpots, higher mandatory and personal loss limits, and short breaks in play (30 seconds after 1 hour of play). In contrast, on Multix machines personal loss limits are voluntary and mandatory play breaks after one hour are 10 minutes in duration.

There is very limited data evaluating the effect the initial ban and the introduction of more restrictive machines have had on problem gambling. A follow-up study by SINTEF (2009) following the reintroduction of Multix machines found that 58% of those surveyed indicated they gambled less than they did prior to 2007 ban; 49% indicated this was due to the ban on slot machines, although only 6% indicated they were abstinent. Overall, industry statistics indicate that less money was wagered on the new machines than on previous EGMs. For example, from 2005 to 2011, Norsk Tipping reported an 82% reduction in sales/revenue, a 79% reduction in the number of players, and an 86% reduction in the number of machines. Despite the reported success of the program, there have been challenges reported with the player cards involving money transfers and card swapping.

Sweden

Sweden introduced responsible gambling features on their "Vegas" brand of EGMs. Operated by the state-owned gambling company Svenska Spel, the features are introduced through a

player card and include: (a) time and spending limits; (b) self-exclusion; (c) spending reports; and (d) a problem gambling self-test. Initially, the registration and card program was originally intended to voluntary. Players were able to set their own spending limits with no ceiling on expenditures or losses. Players could choose to access the full complement of games by using the card, or play basic games only without the card. Ostensibly, players could exhaust their play using the card then switch to basic games to continue gambling. The rationale for this was that the more feature-rich and higher-risk games required registration and the card for access.

Six months after introducing the voluntary system, Sweden moved to mandatory registration, such that all players must register a single unique player card using government-issued identification to play EGMs. Players must set limits on time and money, but the limits themselves are voluntary. The retailer is responsible for initial set up with customer.

Under the system, decreases in spending limits take effect immediately but players must wait 24 hours to increase limits. Players with monthly limits are required to wait 30 days for increases to take effect. When players reach their limits, they are informed and the machine logs them out, indicating they cannot play until the next time period.

This change from voluntary to mandatory has made it more difficult to evaluate the system. According to informant interviews, the mandatory system has met with much customer resistance, such as:
• Thinking government wanted to control them;

• Believing the new technology for registration and limit setting gives the gaming operator a greater chance to manipulate the machines;

• Believing data on gambling expenditures and wins was being sent to the tax office.

Some misuse has been detected: family members using each other's cards, retailers with extra cards readily available. In response, operators have instituted changes including extensive education, staff training and the use of "ambassadors" to train retailers.

Implementation challenges included:
• The need to change the gaming management system to offer the limit setting and play management tools;

• Over-expectations of the technology during roll-out;

• Breaks of time during the roll-out to educate retailers

• Under-estimating the time needed for player and retailer education.

According to informant interviews, successful launch of limit-setting and play management tools should include:

• Player testing: Dedicate a great deal of time to player testing to develop a better understanding of how to talk to the customer.

• Marketing: Extensive communication to address why the system is good for the player.

• Simplifying: People are more suspicious of what they don't understand.

- Making it friendly: Provide an engaging customer interface that avoids a "government look."

- Adjusting to unexpected outcomes: Provide a longer time for players to make decisions on limit-setting and other features. The system was initially set up to automatically log the player out after 30 seconds of inactivity – this was to counter the myth that a machine is "hot." Contrary to literature that suggests breaks in play are good for a player, operators found that people habituated to the forced log out, stayed longer at the machine, and developed tolerance for longer play instead of taking breaks.

- Planning for evaluation: Develop a strategy for data analysis before implementation; and continuously evaluate the system to maximize the experience for the player.

- Providing convenient access: Consider adding website capability to set limits instead of on-site. Sweden's system now also includes the ability to activate PLAYSTOP and exclude for 1 day to 1 year.

Australia

In 2008, the Rudd Government commissioned the Productivity Commission to report on problem gambling. Released in June 2010, the report focused primarily on the broad implications of problem gambling as well as harm-reduction strategies; one chapter focused on limit-setting strategies and recommended that each state and territory implement jurisdictionally-based full limit-setting system for gaming machines by 2016.

The Commission suggested that systems should:
- Facilitate voluntarily limit-setting which, at minimum, features a spending limit that is not subsequently subject to revocation for a set period;

- Allow players to see their transaction history;

- Encourage gamblers to play within safe spending and time limits, by specifying default limits;

- Include the option for gamblers to decline to set limits, but periodically check to ensure this remains their preference;

- Allow occasional gamblers to stake small amounts outside the system;

- Include measures to avoid identity fraud;

- Ensure players' privacy;

- Be simple enough for gamblers to understand and use;

- Present few obstacles to future innovation in the presentation and design of the system; and

- Apply to all gaming machines in all venues in a jurisdiction, with an exemption until 2018 for venues with less than 10 machines.

The Productivity Commission also stressed that the success of the system would depend, in part, on whether:

- Limits were set on an opt-out or opt-in basis;

- Gamblers were required to use a card;

- People experiencing problems controlling their gambling elected to use limit-setting while those without problems continued to gamble without limit-setting;

- People became familiar with the technology.

Following the election in 2010, the Gillard Government committed to implementing the full limit-setting scheme. In 2012, the National Gambling Reform Act 2012 was passed, requiring gaming machines to have a voluntary limit-setting system that allows a player to register and set a loss limit during a prescribed time period. Most venues are required to have this scheme in place by the end of 2018, with smaller venues (less than 20 EGMs) allowed until 2022 to comply.

In preparation, some Australian States have piloted a variety of limit-setting tools, described below.

Australia – Victoria
Victoria is the first jurisdiction to introduce a state-wide voluntary networked limit-setting system due to be functional by 2015. The system will be provided by Intralot Gaming Services Pty Ltd, which monitors EGMs in Victoria. In an effort to reduce stigma associated with a limit-setting card, the system will use the same card, card reader, display screen and kiosk for both loyalty and limit-setting. There is a penalty for advertising or sending gambling promotional material to those who have been suspended or removed from the loyalty scheme.

Australia – South Australia
In 2008, Worldsmart Technology Pty Ltd. added the PlaySmart limit-setting system to the existing J-Card loyalty scheme. Several trials were conducted from 2008 to 2009, involving six hotel venues, though gamblers could use their cards at any of the 64 venues using the J-Card loyalty scheme. Participation in the trial was voluntary and required players to opt in by inserting their J-card into the card reader when they played a gaming machine in any of the venues. Among options, players could set spending limits, time limits, breaks-in-play, and they received reminder prompts when limits were reached. Less than 1% of card holders used the system, in part because the system was not effectively marketed, featured an opt-in system, and had no recruitment efforts or incentives. Drawbacks of the system noted by the players were that they were unaware of the full range of features, never noticed the reminder message, misunderstood the PlaySmart application form and brochure, and were confused by the volume and range of options.

A second trial in South Australia involved smaller venues without an in-house loyalty scheme or player card. Players were actually given paper cards and pens to record their limits prior to the gambling session. At the end of their gambling session they had to take the card to customer service to have the amount they had gambled recorded on the card. However customer service was only able to record play at a single machine per session, even if players changed machines during their session of play. Uptake was very low, less than anticipated, despite a $20 sign-up incentive. Players reported disliking having to carry the bulky card with them, disliking having to fill it in, forgetting to fill it in. Limits averaged $50 per session and players did report finding it easy to understand.

The 2013 casino regulations in South Australia include specific procedures and requirements for limit-setting. If venues wish to provide a loyalty system, they must implement pre-commitment and integrate it with the loyalty system. All venues must have a loyalty system and voluntary pre-commitment in place by 2017, with time needed for smaller venues to comply. All individuals who apply for registration with the limit-setting system are informed of the privacy protection; application of a default daily expenditure limit if the player fails to set a limit; the consequences if the registered customer exceeds the expenditure limit (e.g. system will monitor play data and send reminder message at 90% of expenditure then notify casino staff when the limit has been reached or exceeded). The default limit on daily expenditures is $100. If a gambler wishes to lower the limit, the restriction will apply immediately upon application; however, applications to raise the limit are subject to a 24 hour waiting period.

The system offers additional requirements and safeguards, including:
- Providing a registered player with a periodic activity statement every six months by the player's preferred communication method if the player is active in the venue during that period;

- Allowing the player to access an on-demand activity statement for the current session of play, the previous month of play, or any period up to the previous six months of play; the statement must contain the total amount spent during that period and the net amount won/lost during that period.

The most important features of a successful system, according to informant interviews are:
- Increased staff education to promote and be comfortable promoting the system.

- Ease of access and use; written cards required too many steps

- Provision of incentives such as loyalty points for use. Players should stop collecting loyalty points when limits are reached.

- Possibly engaging small groups such as social clubs involved in promotion.

Australia – Queensland
In 2005, Queensland piloted limit-setting card-based technology and findings were similar to those in other jurisdictions.

The study found:
- There were too many limit-setting options that confused players;

- Success depended in large part on a user-friendly limit-setting system and simple sign-up process;

- Staff needed to be knowledgeable about and supportive of the process.

As with South Australia, there was low participation in the trial, with only 13% to 28% of participants setting daily spending limits. At one venue, participants who set limits reported a 40% reduction in spending compared to those who did not set limits. Overall, there was general support for voluntary limit-setting. Following the trials the SIMPLAY system was installed in Queensland and is operational in 49 venues.

Discussion

The aim of limit-setting is to empower individuals to set spending limits that anticipate possible lapses in future self-control. Examples outside the gambling arena include establishing Christmas spending accounts, opting for a budgeted utility service plan, and buying insurance policies. Applying economic theory to gambling behavior, the objective should be two-fold: (a) sustaining recreational gambling by establishing feasible parameters on recreation; and (b) to reduce or eliminate the regret arising from periodic or progressive loss of control that leads to negative consequences. Limit-setting is not intended solely for the problem or severely disordered gambler who has, arguably, long ago breached limits that would foster continued recreational play; however more severe gamblers may likewise find benefits in limit-setting.

Devising an effective limit-setting system requires clear, consistent implementation of a menu of options that is individually relevant and user friendly. To that end, the system should, first, identify all the baseline elements for choice and provide clear options for tailoring each element to individual needs. Second, the infrastructure for the system must collect information necessary for future outcome evaluations, and, finally, options for limit-setting should be accessible to gamblers from multiple entry points, confidential, easy to use, and understandable.

Cost is always a consideration when implementing new technology. The pioneers of limit setting programs paid higher costs to build new technology from scratch and retrofit both hardware and software to existing gaming management systems and a variety of machine vendor products and platforms. In response to increasing demand for limit-setting and play management programs, a number of technology vendors have developed platforms that are currently in use around the world. Gaming operators increasingly view this as an industry best practice. Fortunately the State of Massachusetts can benefit these earlier investments and advances in the refinement and affordability of the related technology. As noted by Paul Smith in British Columbia, the State of Massachusetts would benefit from selecting a vendor with an existing platform that can be customized to the needs of the State. Such a decision would not only have the benefit of reducing development costs, but also of allowing the State to base modifications, at least in part on the wisdom of other jurisdictions that have had time to note the strengths and weaknesses of their system.

The interviews that informed this report were conducted to gain a full understanding of the systems in existence globally as well as to find out what, in hindsight, operators and regulators would change or improve if they were redesigning their program. Informants highlighted a number of difficulties that Massachusetts could avoid with strategic planning. In addition, the interviews revealed that, to date, New Zealand had instituted the most efficient and well-conceptualized system in the world that could serve as a template for subsequent platforms. In contrast, the program in Nova Scotia was hampered by political challenges and pressures that make it difficult to evaluate its efficacy. Nevertheless, program challenges and hindsight observations from Nova Scotia can inform development of future programs.

Stakeholder interviews in jurisdictions that have adopted limit-setting have identified a number of key considerations, described below.

First, several administrators emphasized the need to develop a systematic training for operator employees, ideally integrated with new employee training, that educates them on all the options in the limit-setting system and how a player could benefit from the system. Some venues also provide "ambassadors" who are tasked specifically with helping players with limit-setting features. Informants emphasized the need to have an education and training protocol in place before the launch, ideally coinciding with the opening of the casinos.

Second, a key factor that distinguished the more successful programs was the integration of limit-setting with the loyalty card. Ideally, players should perceive limit-setting as a benefit of the card; they should be encouraged to choose the options that are best for them, knowing that they will accrue points for adhering to limits at the same rate as they would for spending. For example, one informant explained that limiting-setting could be incentivized as part of Bally's Executive Bonus Suite, which facilitates highly targeted marketing at the machine level; free dinners, rooms etc. could be offered to those who consistently set and adhere to limits as well as those who spend large amounts.

Third, it is important to invest in developing a user-friendly interface, which explains options in a simple way that is easy to understand irrespective of demographics. Instructions might include pictures or graphics and should include a limited range of options versus an exhaustive menu. Informants stressed the importance of allowing sufficient time for player testing before implementation. Ideally, each account would start with default settings, analogous to default settings that are in place on Facebook or other web-based entertainment sites when a user signs up; the user, then, is encouraged to familiarize themselves with the options and either maintain the default or customize the settings to suit themselves.

Fourth, marketing strategies should include the marketing of limit-setting features in addition to incentives to play; marketing to players who have overspent their limits or self-excluded should be prohibited. Informants emphasized that marketing of limit-setting should be framed as empowering all players to take control of their spending and customize their experience rather than as a venue-imposed limitation or a tool for problem gamblers. For that reason, programs should use the term "limit-setting" rather than "pre-commitment," which historically bears a more negative connotation.

Fifth, prior to implementation, there should be a clear system in place for periodic evaluation that will yield information on: system limitations, demographics of players who use the system, and deficits in marketing the system to players. For example, at Sky City in New Zealand, the administration found that sending informational emails saying "Can we help?" to players who repeatedly breached limit-setting was a useful modification. Another effective strategy involved configuring the information display to remind players each half hour about how long they had been playing and how much money they had spent.

Recommendations

Primary Recommendation

The expert team recommends that the MGC Responsible Gaming Framework include play management tools that encourage players to set limits of time and money, and that support players in maintaining those limits.

Based on the evidence review, the program should be designed to specifically address two issues: uptake rates among players; and the effectiveness of the tools in supporting players to maintain the limits they set.

The detailed recommendations below are designed to address key considerations for the successful implementation of play management tools.

Features to support increased up-take rates by players include: positive positioning of the tools, strong education and marketing, integration with loyalty cards to ease access and reduce stigma, incentives to encourage continued use, default limits that require players to explicitly opt out rather than relying on players to opt in, multiple access points to meet the needs of those who want help and those who prefer privacy, and periodic checks with those who have opted out of setting limits.

Features to support players in maintaining limits include: a cooling off period for increases in limits to take effect, reminder messages as players approach limits, screen stop and forced acknowledgement that limits have been reached or exceeded, loyalty points for maintaining limits, prohibiting loyalty points or rewards of any kind for any gambling above limits, and provision of complementary play information tools.

Detailed Recommendations

The play management tools should be:

1. Mandatory for gambling operators to offer on all electronic gaming machines, and voluntary for players to use

2. Targeted to all players

3. Positioned positively to support low-risk/recreational/ "positive play"

4. Supported by a strong program of education and marketing

5. Provided as "opt out" rather than "opt in" system

6. Developed with preset default limits that a player can change or remove (opt out of using the play management tools). These default limits would be based on scientific literature and gambling data

7. Flexibly designed to allow changes to limits, providing that decreases take effect immediately, and increases be subject to a cooling off period (24 hours is standard practice)

8. Developed to provide periodic checks to ensure opt-out remains the preference of gamblers who decline to set limits

9. Seamlessly integrated with Loyalty Card

10. Incentivized to set and maintain limits

11. Network-based at each gambling facility. Note: It is important that self-exclusion be coordinated across all MGC licensed venues. However, play management tools could be specific to individual venues, due to commercial considerations and the regional nature of the planned venues.

12. Accessible from multiple locations including: all gaming machines, customer service stations, self-serve kiosks, and Responsible Gaming Information Centers (RGICs) in the venue. Those who would like help with the tools can approach customer service, floor staff or staff of RGICs, while those who prefer privacy can use the kiosk or machine interface.

13. Responsive to reaching or exceeding limits in the following ways:

    a. When a player reaches preset limits, the game ends and a new screen informs the player that he or she has reached limits. This screen provides persuasive messaging (e.g., the benefits of maintaining limits and risks of continued play). The player must actively acknowledge this message.

    b. If player continues to play in excess of set limit, screen stops at prescribed time and spending intervals would build on earlier persuasive messaging (e.g., potential consequences of exceeding limits). Each time, the player would have to actively acknowledge the message,

    c. Consequences for exceeding limits include foregoing any further loyalty points for play exceeding preset limits and any loyalty points that would be awarded for maintaining limits. This could form part of messaging to players who exceed limits.

14. Coordinated with complementary tools such as play information tools that provide patrons with access to: (a) cost of play messaging and monthly statements including total bets, wins, and losses; (b) a brief problem gambling self-assessment tool, (c) tips on keeping play manageable; (d) educational quizzes; and (e) information on how to access assistance.

15. Designed on a dynamic platform that provides for evaluation and continuous improvement

A more narrative description of the how recommended play management tools should work is provided below.

Overview of Play Management Program

The research team recommends an opt-out system that is mandatory for all venues but that offers all players the option to voluntarily opt out of setting limits. The system would be network-based and programmed with default settings that empirical investigations have suggested are normative for low-risk/recreational/ "positive play" gamblers. Players could access play management features in a number of ways: on machines; at a self-service kiosk; at customer service; or by visiting the Responsible Gaming Information Centre in the venue.

The system should be seamlessly integrated with the loyalty cards, serving a dual purpose of providing incentives and responsible gambling features. The program should provide loyalty or bonus points for setting and adhering to preset limits. Most importantly, both the platform and employee education and training protocols should be in place before venues open, so that limit-setting is a seamless part of the venue experience from the beginning.

When players use their cards for the first time, they should receive a detailed message that indicates: (a) the venue and the State of Massachusetts are committed to ensuring that all players gamble responsibly; (b) accordingly, they have the option to set limits on a number of aspects of play to help manage their play; (c) the system has default settings for each option that they may change at any time; (d) once the player has set limits, decreases to the limits they have set will take effect immediately, but increases will be effective in 24-hours; and (e) players experiencing difficulties adhering to limits may access information on how to get help, including the voluntary self-exclusion program. Players would then be given the option to enter the settings screen to customize their preferences. Next, players would be informed of how to access additional play information tools that provide patrons with: cost of play messaging and monthly statements including total bets, wins, and losses; brief problem gambling self-assessment; tips on keeping play responsible; educational quizzes; and information on how to access assistance. It is recommended that the play information and management tools have a simple access point on the machine, a "RG button" that players can access at any time during play.

At the conclusion of the responsible gambling screens, the players would be thanked for gambling responsibility and reminded they can use the *RG button* at any time to access the Play Information and Management tools.

A program of education and marketing should be developed and implemented to position the tools as supporting low-risk/recreational/ "positive play." This program could also introduce the notion of budget management to gamble within affordable limits. Education and marketing initiatives should be designed to facilitate maximum use of the tools. These efforts should: emphasize value; normalize use to reduce stigma; provided targeted bonuses to successful limit-setters as well as "high rollers," and provide practical information and customer support to facilitate uptake and application. It is important that venue staff be trained to ensure promotion of the tools in the gaming venue. RGIC staff could also play a valuable role in educating players on the play management tools.

Tools and Features

The on-screen button or access point on the machine should be clearly marked and easily accessible to players. This button would offer players ongoing access to the play management and complementary play information tools, and should include: (a) limit-setting settings; (b) brief gaming risk assessment; (c) spending reports; (d) self-exclusion; and (e) resources for help. Based on prior research in this area, it is advised that a "multiple choice" approach or one with a limited range of options be offered to the player to avoid confusion. Betting limits could be offered in increments with a lower and upper bound amount. Other limit-setting options could include time limits and net loss. Self-exclusion should be available on a range of timeframes.

As players approach their limits they should be provided with reminders, including a screen stop and persuasive warning message when they are close to limits (e.g., 60%, 80%, or 90% of their preset limits). In addition, players should be periodically informed (i.e., every 30 minutes) of about how long they've been playing and how much they've spent. Freezing play is important because studies have suggested that players either ignore or fail to see such warning messages when in the heat of play. Players will receive a further message when they reach their limits. This message will end the game and inform them that, should they continue play, they will not accumulate additional loyalty points or bonuses, including those they would have received if they maintained their limits.

Role of Operators

The gaming industry has an important role to play to ensure that advertising, education and marketing consistently encourages players to set and maintain limits. This should include player incentives for making positive gaming choices.

Operators should be required to implement staff training on responsible gambling and ensure that all customer service representatives are fully trained on the use of the limit-setting platform. Ideally, the MGC could develop a standardized training program and require venues to implement the program unless the operator has already developed a rigorous training protocol that the MGC approves. Training should include education on problem gambling, limit setting, informed choice, self-exclusion, and state-sponsored resources for help.

Outcome Assessment and Evaluations

Prior to implementation of the system, the Commission should devise a comprehensive plan to evaluate the effectiveness of the play management system, and inform continuous improvement. This should include analyzing the data and statistically determining patterns of play that could be indicative of problem gambling. To that end, the initial platform should include a list of variables and a clear analytic plan that includes the development, if possible, of an algorithm associated with problematic escalations in play. O'Neil and Delfabbro have suggested that the program should include detailed information on: exact expenditures per player; limits set; post-limit setting impacts on individual frequency and time spent gambling; shifts to other modes of gambling (expenditure switching); shifts to other jurisdictions; and use of limit-setting to support self-exclusion. We would add that the ability to capture information outlined in the Bally System (net loss, turnover, and player activity statements, history session

reports, and statistical reports) are also critical components to evaluating and enhancing a limit-setting system over time. The play management program should include a disclaimer that the MGC reserves the right to use de-identified data to inform further enhancements of the responsible gaming program and tools.

The recommendations represent: (a) the team's comprehensive knowledge of and contributions to the scientific evidence regarding limit-setting; (b) a review of several jurisdictions with direct experience with play management and limit-setting tools; and (c) the team's expert interpretation and advice.

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Appendix A – Key Biographies

Lia Nower, J.D., Ph.D. is Professor and Director of the Center for Gambling Studies at Rutgers University. She is Co-Director of the Addiction Counselor Training Certificate Program and research affiliate with the Center of Alcohol Studies. Dr. Nower's research focuses on psychometric measurement, the etiology and treatment of behavioral addictions, specifically disordered gambling, and related policy issues. Dr. Nower has served as an NIH pre-doctoral fellow, a Fulbright fellow, and a research intern at the National Research Council at the National Academies. She currently serves as a co-editor, advisory board member or board member of several journals and a consultant and grant reviewer for international, national and state agencies. Dr. Nower is a member of the legislative board of and a clinical supervisor for the National Council on Problem Gambling. A former criminal prosecutor, she is a member of the Thomson-Reuters Expert Witness Services (TREWS) network and serves as a forensic consultant in state and federal court cases involving gambling-related crimes.

Dr. Nower has also co-authored several policy initiatives, including a model for self-exclusion programs and an industry framework promoting informed-choice in gambling venues. She co-edited *The Wiley-Blackwell Handbook of Disordered Gambling* (2013).

Alex Blaszczynski BA, MA, Dip Psych, PhD, MAPS is Professor of Clinical Psychology, and Director of the University of Sydney's Gambling Treatment Clinic and Research. He is also an associate of Strategic Science, and adjunct professor at the Centre for Gambling and Education Research, Southern Cross University.

Dr. Blaszczynski has evaluated randomized treatment outcomes studies using behavioural interventions, assessed the prevalence of depression and suicidality, determined the relationship between crime, gambling, and highlighted the role of impulsivity in pathological gamblers. He developed a conceptual pathways model explaining the aetiology of pathological gamblers, and has reviewed responsible gambling and harm minimisation strategies. He was chairman of the Working Party for the Australian Psychological Society and committee member of the Australian Medical Association's position papers on problem gambling. He is the editor-in-chief of International Gambling Studies.

Dr. Blaszczynski is widely recognized for his contributions to science receiving in 1995, the American Council of Problem Gambling Directors Award, in 2004, the National Centre for Responsible Gambling senior investigator's research award, in 2013, the NSW Government's Responsible Gambling Fund's excellence award, and in 2014 the National Council on Problem Gambling Lifetime Research Award.

Judith Glynn, M.Sc. has more than 25 years experience spanning public policy, scientific research, and marketing/communications, with 16 years dedicated to the gambling field. She sits on the Machines Research Oversight Panel for the Responsible Gambling Trust, is Advisor, Asian Pacific Association for Gambling Studies and Member, International Think Tank on Gambling Research, Policy and Practice. Judith's perspective of gambling is unique, having worked to market Ontario's gaming expansion in the 1990's before managing from start-up the world's largest problem gambling research fund. She is a natural collaborator, uniting researchers with industry, regulators, treatment agencies, and vulnerable populations including

women and aboriginal peoples. Judith is Principal, Strategic Science, providing social responsibility consulting in gambling, obesity and substance abuse.

Karen Choi, Ph.D., received her doctorate in Social Psychology from the University of Waterloo, specializing in Cross-Cultural Psychology. She is highly experienced at teaching, designing and conducting quantitative and qualitative research using various methodologies and advanced data analysis techniques. She served as the primary source of problem gambling research and briefings for the Ontario Government. Karen oversaw high profile, policy-relevant research projects to increase treatment uptake among self-excluded gamblers, and to assess the impact of legal Internet gambling.

Karen's research includes treatment for concurrent addictions and anger among youth, tobacco use among youth, and alcohol harm reduction policy. She works to ensure that health research and policy take into consideration the specific risk and resilience factors of vulnerable populations, such as youth, women, and ethno-cultural communities. Karen is Principal, Strategic Science, providing social responsibility consulting in gambling, obesity and substance abuse.