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Pre-Commitment Systems

1. Research Background

I am an Associate Professor in the School of Psychology at the University of Adelaide. I completed a Ph.D. on the psychology of gambling behaviour in 1998 and have undertaken numerous research projects in this field over the last decade. Since 1999, I have published over 80 journal papers in peer reviewed national and international journals and many government reports. I have conducted a number of prevalence studies into adult and adolescent gambling, experimental research relating to electronic gaming behaviour, as well as studies of venue-based behaviour (e.g., how problem gamblers might be identified in gaming venues). I am the current editor of the national journal *Gambling Research*, produce and annual *Australasian Gambling Review* for the Independent Gambling Authority of South Australia. In relation to pre-commitment work, I am currently the evaluator for the Maxetag pre-commitment trial in South Australia and member of the Ministerial Expert Advisory Group on gambling.

2. Pre-Commitment Research

In 2010, I was commissioned by the Victorian Department of Justice to produce a report summarising current national and international knowledge concerning electronic pre-commitment systems. The report focuses specifically on systems that might be introduced to provide pre-commitment technology to electronic gaming machines (EGMs), but also examines developments in other areas of gambling (e.g., Internet gambling) if these are relevant for informing the current discussions. With a total length of around 70 pages (including references), the report is broken down into several chapters.

- *Chapter 1*: Provides a conceptual background to the pre-commitment debate. It discusses the principles of harm minimisation or harm reduction and provides a definition of pre-commitment.

- *Chapter 2*: Discusses the different forms of technology that can be used to deliver gaming services and the ways in which pre-commitment functionality might be introduced; the principal elements of electronic pre-commitment systems; some examples of technology providers and systems that are currently available.

- *Chapter 3*: Summaries and critically evaluates the findings from several trials of pre-commitment technology, e.g., in Australia, Canada, Sweden and Norway.

- *Chapter 4*: Provides a summary of the principal implementation and conceptual issues that need to be taken into account in discussions concerning pre-commitment. These issues include the: likely financial costs of pre-commitment systems; possible industry impacts; unintended negative consequences; technological challenges and barriers; the relative merits of voluntary vs. Mandatory systems and most empirically supported design features.

The submission which follows provides an overview of the content of my report and principal conclusions.

3. Pre-Commitment: Conceptual Framework

- Problem gambling, as defined in Australia, usually involves an excessive commitment of time and money to gambling to the extent that it contributes to harm for individuals, their family members and the broader community. For some people, this progression to problem gambling can be gradual process, whereas it can occur more rapidly for others.
- Gamblers can be differentiated in relation to their level of risk. Most experience few significant consequences associated with their gambling, a smaller proportion vacillate between periods of risk and controlled gambling, and around 1-2% experience significant harm at any particular point in time.
- Gambling policy is often based on a public health approach. Harm reduction refers to attempts to reduce harms amongst those people already affected by the problem, whereas harm minimisation refers to attempts to reduce the risk of harm.
- The term pre-commitment refers to strategies are methods used to help people to plan, monitor or control the amount of money and time they spend gambling before the activity is undertaken.
- Most existing self-help guides contain some reference to pre-commitment strategies, but the new technology prosed provides opportunities for people to pre-plan their gambling in a way that can directly influence their behaviour when inside gambling venues.

4. Technology-based Gambling and Pre-commitment Features

- The report examines international literature that draws attention to the distinction between pre-commitment technology and cashless gambling. One can have card-based gambling with pre-commitment features, cards with pre-commitment features and no cash, or card systems that provide both cashless gaming AND pre-commitment features.
- Many forms of technology can be used to facilitate cashless gambling as well as pre-commitment features. These include: magnetic cards, ticket systems, smart-cards, radio-frequency cards and integrated technologies that use combinations of technology.
- Magnetic cards usually contain identification information that is read by a card-reader that interacts with a central processor to allow access to personal account details. These cards have some advantages: they are cheap to make, can be easily replaced and can be issued with small cash values if players forget their own cards. Such cards are, however, less secure, can be easily damaged and can be swapped between players without easily detection. Several pre-commitment systems can be implemented using this technology.
- Ticket systems involve paper cards or tickets that allow value to be removed and/or readded on to a gaming machine (Ticket in-ticket out, or TITO). It is more difficult to implement pre-commitment features when this technology is used.
- Smart cards are cards with a small chip can record account details, identification information and pre-commitment settings. Smart cards are slightly more expensive than magnetic cards, but more secure.
- RF technology involves small radio transmitters in a tag, chip or card that send encrypted information to a reader next to the machine. These systems are versatile and have higher security (e.g., Maxetag).
- Integrated technologies: There are other systems that bring together the Internet, gaming machines and other systems (e.g., a kiosk interfaced pre-commitment system). USB devices can be used to provide versatile pre-commitment and cashless gaming, but current national gaming machine standards indicate that the provision of an external USB port would contravene these standards and compromise gaming machine security.
- Most pre-commitment systems include a number of standard features: (1) The ability to set money limits, (2) The ability to set time limits, (3) Exclusion or cooling off periods, and (4) Player activity statements.
- Limits can be usually set for individual sessions, on a daily basis, weekly, or less frequently. Different consequences can be linked to a failure to comply with pre-set limits, including the loss of loyalty points, the inability to play machines, or time-out periods.

- Systems can be voluntary / partial or mandatory/ full. The degree to which a system is mandatory can vary from the extent to which people must use cashless technology, use the pre-commitment features, or set their own limits.
- Many different national and international technology firms have the capacity to provide pre-commitment technology for Australian venues, but not all have been extensively field tested. Many are built on top of existing loyalty card software. Most offer the capacity to incorporate biometric software that allows personal identifiers such as fingerprints to be read by the system so as to enhance the individual identity of cards or other gambling devices. The best ones do not require the interface with a central data-base when making the biometric identification.
- Systems differ in the ways in which people engage with the system. Some have Internet sign-up and reporting sites, some have kiosks in venues, most utilise separate readers or screens next to machines, whereas others can provide messages on EGM screens. Two types of research study are reviewed: (1) self-report surveys of gamblers and industry representatives and (2) Evaluations of real life trials of pre-commitment systems in venues.

5. National and International Evaluation Trials

- Trials of pre-commitment system have been undertaken in a number of countries: Australia, Sweden, Norway and Canada, although not all of these (e.g., Norway) are available in English.
- The largest Australian trial was conducted by Schottler Consulting (2010) and involved the Worldsmart system.
- The largest international evaluation was conducted in Canada and is summarised in several reports (Bernard et al., 2006; Omnifacts Bristol, 2007; Focal Research, 2007). The trial used a mixed methodology and examined a sample of 51 VLTs in 9 sites in Nova Scotia. Data were obtained from a select group of panel players, analysis of system data, player interviews, and surveys of venue patrons and the general public.
- The first part of the evaluation (Bernard et al., 2006) involved a usability trial involving 120 panel players recruited to use cashless gambling. As pointed out by Bernhard et al. (2006), the system allowed people to obtain on-screen information concerning their expenditure during sessions or over a specified period or allowed them to set limits or time-outs. Data were collected using player surveys as well as focus groups. The results showed that around

half of the sample used at least one responsible gambling feature, but only 3% set daily monetary limits.

- The second component conducted by Omnifacts Bristol reported similar results. Use of features declined over time: 68% of people used at least one feature at least once during the first part of the study but this dropped to 51% 6 months later. Only 1% of players used weekly limit setting and only 15% used daily limits during the first period of tracking -and this dropped to almost zero over time.
- The study also detected significant rates of card-swapping: 20% of panellists had reported a card at least once and 30% said that they had lent a card and 37% had either borrowed or lent a card at least once. A subsequent report by Focal Research (2007), however, found that most people did this only once or very rarely.
- The sample size was quite small, so that it was not possible to draw definitive questions about the effects on problem gamblers. Nevertheless, as reported in the report, 5 of the 15 PGs identified dropped to a lower risk category and 2 moved to a higher category during the trial, but this the typical rate of change one sees in longitudinal studies without pre-commitment features.
- Most respondents in the broader sample spoke favourably about the features and said that they helped them to stick to a budget (65%) and 85% were aware of how much they were spending on VLTs. The results for personal relevance and usage were lower, e.g., 81% said that they did not need to use the features to set limits and only 30% said that they relied upon the features to make decisions about their playing.
- The Focal Research (2007) study showed that, of 817 regular players, 71% used at least one of the features. Only 11% set any daily limits and 2% used the time-out function. Of the users of features, 65% continued to use them at least once more in subsequent sessions. Use of the features was associated with a greater amount of cash in, longer sessions, better returns and a gradual decline in the level of expenditure (net loss).
- Higher-risk players were generally unaffected by the trial (their behaviour did not change a great deal), but lower risk players seemed better able to manage their playing and achieved lower losses and better returns.
- Other smaller trials (e-bet and Simplay) have been conducted in Australia in Queensland (Productivity Commission, 2010) and there is some ongoing work in Sweden and Norway. In Sweden, Svenska Spel has included a voluntary player tracking system called Playscan on its Internet gambling sites. The system provides players with warnings (traffic lights) and information if players display riskier styles of play. People can set time and monetary limits,

but it has been found that people will often set limits that are so high (e.g., 24 hours) that they obviate the system. In Norway, a small trial involving 16 VLTs showed that only 1.3% of people will set voluntary limits. Norway has now introduced mandatory limits for VLTs (around AUS$70 per day) and AUS$390 per month. Bets can be no more than AUS$8 and wins can be no larger than $AUS280.

- The findings from all of the trials and self-report studies are reasonably similar.
- The general population and most players generally agree that pre-commitment is a good idea.
- EGM gamblers are more likely to have positive attitudes towards voluntary rather than mandatory systems.
- Money limits are more popular than time-limits.
- People are much more likely to use informational features (e.g., player activity reports) than limit-setting. The usage for limit setting figures can be < 10% in some trials and even lower over time.
- The natural uptake of pre-commitment features is generally low. Higher recruitment rates are usually observed in the early weeks of trials and these quickly decrease over time.
- A significant proportion of people will set limits higher than their usual expenditure or breach their limits.
- A significant proportion of people will swap cards if other controls are imposed, although this generally happens infrequently.
- Concerns about privacy appear to be major concern amongst those who fail to sign up for cards that offer pre-commitment functionality, although most users are reasonably confident about the probity of the systems.

6. Commercial Impact of Pre-commitment Technology

- The evaluation studies indicate that the technology is generally reliable and causes only minor and short-term disruptions to commercial operations.
- When examining the financial impact of these systems on the industry, different elements of cost need to be considered: (1) The cost of implementation and ongoing maintenance, (2) Reductions in revenue due to decreased expenditure by gamblers, and (3) Loss of patrons due to a dislike of the technology or a migration to other forms of gambling.
- Several evaluation studies indicate that the cost per machine of installing machines with the new technology was around $1500-2000, but current industry estimates are higher ($3000-4000). These costs would appear to only apply to software upgrades. Combined soft-ware

and hardware changes are estimated to cost $9000-12000 per machine and full machine replacements would cost between $18,000-$25,000 depending on the model of the machine.

- It is estimated that around 25% of Australia's machines could be modified through software changes only; 25% would need both software and hardware upgrades and 50% of machines would have to be replaced over time because the technology is too old to allow modification.
- It would be assumed that 50% of machines would be available to provide pre-commitment technology as part of the natural replacement cycle (estimated to be around 14 years) over the next decade.
- To modify the other 50% with software and/or hardware changes would cost around $600 million.
- Some minor labour costs would be incurred during the early phases of implementation, but the introduction of cashless gambling over would possibly reduce labour costs because of the need for less coin handling.
- There are additional networking and hardware costs that would also be incurred in putting the systems in place.
- The affordability of implementation would vary depending on the size of the venue. In Australia, venues can have as few as 1 machine or as many as 2500. Large venues tend to have more modern machines that require only software upgrades. Smaller regional venues are more likely to have older model machines so that it would be necessary to replace more of the machines if one wanted to provide pre-commitment features.

7. Technology Issues

- Only a certain proportion of existing machines (around 25%) would be capable of providing pre-commitment functionality in the short-term via software upgrades. Another 25% could provide it by adding bolt-on hardware and software upgrades. A final 50% of machines would have to be replaced.
- The communication protocols on many older machines only allow the one-way transmission of information for monitoring purposes.
- There are many different networks and systems available in Australia, e.g., some venues or venue groups already have their own systems in place.
- Modified machines would need to be tested and approved in each of the different jurisdictions.

- I support the Productivity Commission's views that one would have a staged process for the implementation of an Australia-wide pre-commitment system. The technical challenges would make this a necessity and there would clearly be a need for greater concessions or flexibility to be shown towards smaller venues with older technology, smaller revenue bases or limited access to technical support (e.g., rural and remote venues).

8. Unintended Consequences: Fact or fiction?

- It would be important to determine whether the introduction of new features would have any undesirable consequences.
- Would the availability of player information statements lead to chasing behaviour if people could see how much they had won or loss during gambling sessions? The Nova Scotia trial provided some limited evidence that may happen on some occasions.
- Would cashless gambling (if there is a move towards this) lead to greater expenditure because people are no longer gambling with real money? A review of the evidence drawn from evaluation trials suggests some limited evidence that this occurred, but also showed that the inclusion of pre-commitment features in combination with cashless gaming may have, in fact, reduced player losses.
- In Nova Scotia, those who used cashless gaming AND pre-commitment features typically had longer session times, put more cash into the machine, but had a higher return to player and lower losses. By contrast, those who used cashless gaming and NO responsible gambling features had shorter sessions, put less money into the machines, but had poorer returns. These findings were further borne out in comparisons of pre and post data for people who had, or had not, adopted the responsible gambling technology. Adopters loss less during the trial period as compared to the pre-trial period, whereas non-adopters lost more compared to the pre-test condition. In other words, those who started gambling using cashless technology without adopting the responsible gambling features tended to lose more money, whereas the reverse was the case for those who used cashless gambling and utilised responsible gambling features.
- It been suggested that, in Norway, the removal on gaming machines led to some migration towards Internet gambling. This may be true, but it should be noted that Norway differs substantially from Australia. Internet gaming has a much higher profile and is legally available to residents (unlike in Australia). This migration would typically only involve a relatively small proportion of players (typically younger males). In Australia, the

demographic profile of players is broader and includes a lot more women and older people who typically have extremely low levels of involvement with Internet gambling. The Norwegian research showed that 70% of problem gamblers played slot-machines prior to them being banned, but the fact that many problem gamblers often gambled on the Internet in the post-ban period does not necessarily indicate that there was a migration from one form of gambling to the other. It is more likely that those who gamble on the Internet and who have gambling problems tend to have high levels of involvement in many forms of gambling, including slot-machines. That is, the Internet gambling involvement in Norway may have been higher amongst the problem gamblers even before the VLTs were removed.

9. Mandatory vs. Voluntary Systems

- Support for mandatory systems tends to be higher amongst members of the general public than amongst EGM players.
- Around 60% of players tend to support a voluntary system.
- From a public policy perspective, voluntary systems do not appear to work very well. People are generally happy to use cashless gaming, but few will set limits and stick with them.
- A significant proportion of those who set limits will ignore them when their limit is reached or bypass the functionality by setting very high limits.
- The evidence suggests that only a full mandatory system of the nature utilised in Norway would have the capacity to impose genuine controls on people's expenditure, but the evidence in support of the effectiveness of any pre-commitment system still remains limited. Some commentators suggest that further evaluation of voluntary systems would need to be untaken before moving towards a mandatory system.
- The Productivity Commission's suggestion to have a default limit or to require people to set a limit each time they play might be useful way to impose controls without unduly affecting the activities of over 90% of recreational players.
- There needs to be ongoing discussions about the target population for these systems. My view is that pre-commitment is a tool to assist at risk players to prevent them from progressing to problem gambling (i.e., a way of preventing harm). It may also help problem gamblers who have made a decision to reduce their gambling. These systems would be less effective for dealing with problem gamblers who still remain in a state of denial. For this reason, a mandatory cashless system but with flexible limits set by players may still have some value for players who are motivated to control their behaviour.

10. Design and Implementation Issues

The report discusses some of the principles that should be taken into account when designing a pre-commitment system.

- *Player information*: It is important to provide information on player activity in a comprehensible form. The information should show the amount of cash in, the total winnings and the person's net win or loss rather than a confusing + or – balance. The Nova Scotia system appears to be one of the clearest and most comprehensive. This information should be available on the machine, on the Internet or from a kiosk rather than only from a cashier (the NSW system described by Nisbet, 2005a).

- *Simplicity*: Schemes are more accepted when they have a very easy registration process and where they do not include too many options. Money limits for a day or a week appear to be most popular options and ones that players understand most easily. People must understand that the limit is about net or out-of-pocket expenditure rather than the amount of money into the machine (which may include reinvested winnings).

- *Flexibility*: The ability to register for a pre-commitment system using the Internet, a kiosk or personal contact is important so that players will not be subject to any feelings of embarrassment.

- *Privacy and trust*: A lot of work needs to be put into ensuring that player data will be kept secure and private. Most systems would appear to have the capacity to achieve these objectives, but it is another matter to ensure that players share this assessment.

- *Warnings*: Warnings are likely to work better if they are more dynamically presented on the EGM screens rather than on the card reader displays. Loud warnings or messages that might be visible to other players should be avoided to prevent players feeling annoyed or stigmatised and therefore reluctant to use the features.

- *Tracking*: Playscan's ability to alert players to changes in play appears to be a promising innovation and one that should be considered in future discussions concerning potentially useful features, although it is recognised that this sort of technology may take some time to develop.

- *Promotion*: Several studies show that users are more likely to accept and respond well to the technology than those who have not tried it. Familiarity leads to greater acceptance. Thus, any strategy that can get people to try the features is likely to be useful. The offer of small incentives to use features appears to be very important in several trials (e.g., extra bonus points, payments for taking part in research evaluations). How the features are promoted and 'pitched' can also make a significant difference to player acceptance. Since most players do not regard themselves as problem gamblers or in need of budgetary controls, staff need to promote the features in a way that is non-judgmental and which refers to their broader utility for all players.