Gambling Harm Minimisation Technologies Research

Research Paper

Prepared for:
Tasmanian Liquor and Gaming Commission
March, 2022
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### Glossary

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ATG</td>
<td>Automated table game</td>
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<tr>
<td>ABCG</td>
<td>Account based cashless gaming</td>
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<tr>
<td>CBS</td>
<td>Consumer and Business Services (South Australia)</td>
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<tr>
<td>CBC</td>
<td>Card based cashless</td>
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<tr>
<td>CRT</td>
<td>Cash Redemption Terminal (South Australia)</td>
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<tr>
<td>CRT</td>
<td>Cashier’s Redemption Terminal (New Zealand)</td>
</tr>
<tr>
<td>DJCS</td>
<td>Department of Justice and Community Safety (Victoria)</td>
</tr>
<tr>
<td>DOCITO</td>
<td>De-Centralised Offline Cash-In-Ticket-Out</td>
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<tr>
<td>EGM</td>
<td>Electronic gaming machine, slot machine (USA, Macau and Norway)</td>
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<tr>
<td>FRT</td>
<td>Facial recognition technology</td>
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<tr>
<td>ID</td>
<td>Identification</td>
</tr>
<tr>
<td>IVT</td>
<td>Interactive Video Terminal</td>
</tr>
<tr>
<td>MPS</td>
<td>My-Play System (Nova Scotia)</td>
</tr>
<tr>
<td>NSGC</td>
<td>Nova Scotia Gaming Corporation</td>
</tr>
<tr>
<td>OLGR</td>
<td>Office of Liquor and Gaming Regulation</td>
</tr>
<tr>
<td>PCG</td>
<td>Player card gaming</td>
</tr>
<tr>
<td>TITO</td>
<td>Ticket-in Ticket-out</td>
</tr>
<tr>
<td>USA</td>
<td>United States of America</td>
</tr>
<tr>
<td>VLT</td>
<td>Video Lottery Terminal</td>
</tr>
<tr>
<td>VPC</td>
<td>Voluntary Pre-commitment (South Australia)</td>
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<td>VRGF</td>
<td>Victorian Responsible Gambling Foundation</td>
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1 Introduction

The Gaming Control Amendment (Future Gaming Market) Bill 2020 to implement the Tasmanian Government’s future gaming market reforms received Royal Assent on 16 December 2021. The reforms will take effect from 1 July 2023 and include:

- a decrease in the state wide electronic gaming machine (EGM) cap by 150 machines
- individual venue licences to operate EGMs
- a new Keno operator licence
- two new high roller non-resident casino licences
- more appropriate distribution of returns from gaming
- establishing a separate Licensed Monitoring Operator to monitor the hotel and club EGM network
- introduction of fully automated table gaming arrangements
- removing the monopoly on the simulated racing event ‘Trackside’
- an increase in the Community Support Levy to improve harm minimisation.

The Tasmanian Government considers that harm minimisation could be improved through better identification of excluded players and the ability for players to set expenditure and time limits on their electronic gaming machine activity. To this end, and in accordance with the amending Act, the Government has directed the Tasmanian Liquor and Gaming Commission to investigate the extent to which facial recognition technology and a player card gaming1 identification system (including pre-commitment) for electronic gaming machines in hotels, clubs and casinos could minimise gambling harm.

The Commission must report on the outcome of the investigations, including options, costs and benefits, timeframes to implement and implementation mechanism. The Commission is required to provide this report to the Minister for Finance by 30 June 2022 together with appropriate recommendations.

The Commission is conducting its investigation in four phases:

Phase 1. a scoping investigation of the two harm minimisation technologies and where they are operating in Australian and international gambling environments;

Phase 2. examination of the information gathered under Phase 1 to inform an initial feasibility assessment (conducted by a consultant with expertise in gambling industry technology and operations) of technology risks, regulatory impacts, interoperability and barriers, and timeframes of implementation for the Tasmanian environment;

Phase 3. a stakeholder consultation process; and

Phase 4. preparation of the final report by the Commission, with support from the Department of Treasury and Finance.

This paper has been commissioned under Phase 1 and describes the outcomes of a scoping investigation of gambling harm minimisation technologies for customer identification and gambling activity for EGMs. Specifically, it reports on two harm minimisation technologies that are operating in Australian and international gambling environments. The investigation involved desktop research and selected consultations with regulators. This publishable version does not include the outcomes of consultation treated confidential at the request of regulators.

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1 On expert advice, the term ‘player card gaming’ is used throughout this paper meaning a card used to play EGMs (known also as smartcards and restricted use cards).
These two technologies have been contextualised as:

1) Facial recognition technology used for the purpose of alerting the presence of a person entering a venue or gaming area who is potentially registered as an excluded person on the Tasmanian Gaming Exclusion Scheme database. It is envisaged to operate similar to the South Australian system.

2) Player card gaming to be physical cards or digital emulation of a card (e.g. a digital wallet), with the functionality of or similar to an account, that at a minimum can identify the player, provides cashless gaming and the ability for players to set spend and time limits. The investigation also scopes other functionality available such as the ability to track gambling activity, prompt breaks in play, and identify excluded persons.

This scoping investigation has focused on gathering sufficient information about these types of technologies and evidence of their effectiveness to reduce harm. The investigation is designed to inform the initial feasibility assessment in Stage 2.

1.1 Methodology

The broad method used in preparing this paper is outlined in Figure 1.

Figure 1: Methodology

The Liquor and Gaming Branch and an expert consultant engaged by the Commission provided guidance to the research and assisted in clarifying, verifying and exploring key issues where necessary.

The types of technology have been interpreted as a whole system – not the specific components of technology. For example, one company may produce the software for a facial recognition system and another company may make the hardware (cameras, IT infrastructure, etc.)

The research scope was designed to enable a high-level overview of the jurisdictional environments for each technology.
### Table 1: Research Scope

<table>
<thead>
<tr>
<th>Technology Option</th>
<th>Jurisdictions Researched</th>
<th>Jurisdictions Consulted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Player card gaming</td>
<td>Australia</td>
<td>Australia</td>
</tr>
<tr>
<td></td>
<td>- New South Wales, Queensland, Victoria, South Australia</td>
<td>- New South Wales, Queensland, Victoria, South Australia</td>
</tr>
<tr>
<td></td>
<td>International</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- New Zealand, Norway, Nova Scotia (Canada), Sweden, United States</td>
<td></td>
</tr>
<tr>
<td>Facial recognition</td>
<td>Australia</td>
<td>Australia</td>
</tr>
<tr>
<td></td>
<td>- South Australia, Queensland</td>
<td>- South Australia</td>
</tr>
<tr>
<td></td>
<td>International</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- New Zealand, Japan, Macau, United Kingdom</td>
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</tbody>
</table>

Key search terms, or fragments thereof, used as a basis for identifying relevant information in jurisdictional documents are contained in Table 2.

### Table 2: Key search terms

<table>
<thead>
<tr>
<th>Technology Option</th>
<th>Search Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Player card gaming</td>
<td>• Card-based gaming / gambling</td>
</tr>
<tr>
<td></td>
<td>• Player card gaming / gambling</td>
</tr>
<tr>
<td></td>
<td>• Gambling / gaming loyalty card</td>
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<tr>
<td></td>
<td>• Gambling card</td>
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<tr>
<td></td>
<td>• Cashless gaming / cashless technology</td>
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<tr>
<td></td>
<td>• Digital wallet / wallet</td>
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<tr>
<td></td>
<td>• Player card</td>
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<tr>
<td></td>
<td>• Smartcard</td>
</tr>
<tr>
<td></td>
<td>• Account card</td>
</tr>
<tr>
<td></td>
<td>• Account based cashless gaming</td>
</tr>
<tr>
<td>Facial recognition</td>
<td>• Facial recognition</td>
</tr>
<tr>
<td></td>
<td>• Facial recognition technology / technologies</td>
</tr>
<tr>
<td></td>
<td>• Facial recognition system</td>
</tr>
</tbody>
</table>
2 Key findings

2.1 Facial recognition technology

Facial recognition technology (FRT) is used by government and business in a range of industries and applications. The technology is used in digitally accessing information, policing and travel / immigration and has been used in the context of minimising gambling harms associated with gambling.

A variety of FRT systems are used in a range of jurisdictions to identify excluded or barred patrons from gambling venues. Several applications, approaches and technologies have been identified, which are at varying stages of implementation. Minimal information was identified on the effectiveness, implementation issues or costs associated with FRT.

Figure 2 shows the jurisdictions that were the focus of the research into the use of FRT.

Figure 2: Jurisdictional research - facial recognition technology

South Australia, New Zealand and the United Kingdom use FRT as a tool for identifying excluded or barred patrons entering gambling venues. Japan and Macau appear to be in the early phase of identifying FRT technologies to identify excluded or barred patrons.

Research indicates that the use of FRT in New Zealand and the United Kingdom is not mandated through legislation. Rather, the use of FRT appears to be an industry led initiative.

The approved ID scanning equipment used in some liquor licensed venues in Queensland does not use facial recognition but there are some similar characteristics.

It has been reported that FRT has been successfully trialled at several gaming venues in New Zealand.² The Chief Executive of Christchurch Casino in New Zealand, Brett Anderson, has stated ‘we have been looking at [an] 88 percent success rate over a recent two-month period.’³

Evidence of weakness or adverse impacts of FRT was not identified for Japan, Macau, New Zealand or the United Kingdom.

³ George Block, The quiet creep of facial recognition systems into New Zealand life, Stuff website. Accessed 20 January 2022
The key implications or potential traps flagged for consideration tend to relate to privacy concerns and how staff are to deal with potentially barred persons entering gaming areas.

The costs associated with implementing FRT were identified for South Australia and New Zealand, and are highly variable, depending on the types of systems used.

### 2.1.1 Research outcomes

This section summarises the findings of the desktop review of the use of facial recognition technology.

<table>
<thead>
<tr>
<th>Outcome 1: A global environmental scan of the harm minimisation technologies identifying the range of options available</th>
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</table>
| Facial recognition technology (FRT) is used by government and business in a range of industries and applications. In addition to its utility in assisting in minimising harm associated with gambling, the technology is used in digitally accessing information, policing and travel / immigration.  
Fundamentally, facial recognition systems comprise:  
- an imaging device  
- control information  
- a comparison system.  
Imaging devices include digital cameras, video surveillance cameras, thermal imaging cameras and drones.  
Control information includes biometric passports, images from social media or video surveillance footage.  
The comparison system is used to compare and analyse the taken image with the control image and any other relevant information. An example would include video-based facial recognition system, such as the one described by Thales, that uses algorithms to detect, track and recognise faces.  
Examples of the range and application of facial recognition systems used by governments, business and individuals include:  
- Facial recognition systems using cameras with cloud-based comparison systems or systems integrated with existing CCTV infrastructure:  
  - the facial recognition systems used in South Australia, New Zealand and UK gaming machine venues and casinos.  
- Phone camera based facial recognition systems:  
  - the system used in the South Australian Government home quarantine phone application  
  - FaceID.  
- Automated Border Control systems: |

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6 Biometrics, Department of Home Affairs website. Accessed 14 December 2021


A variety of FRT systems are used across these jurisdictions to identify excluded or barred patrons from gambling venues. A range of applications, approaches and technologies have been identified, which are at varying stages of implementation. Minimal information is available online and was identified in consultation in relation to the effectiveness, implementation issues or costs associated with FRT.

### Outcome 2: Details of where these technologies are operating including the regulatory frameworks and industry practices/requirements

South Australia uses FRT as a tool for identifying excluded or barred patrons entering gambling venues. South Australia maintains a set of approved FRT system providers and approved systems that can be used by businesses to identify excluded or barred patrons.

New Zealand and the United Kingdom are currently using FRT to identify excluded gamblers, while Japan and Macau appear to still be in the trial phase of the technologies.

In Queensland, approved ID scanning equipment is being used in certain types of liquor licensed venues in safe night precincts to assist venue staff in identifying patrons subject to a banning order. The equipment does not use facial recognition but there are some similar characteristics.

It appears that the use of FRT in New Zealand and the United Kingdom is not mandated through legislation. Rather, the use of FRT appears to be an industry led initiative to identify excluded patrons.

### Outcome 3: Evidence of effectiveness including the minimisation of harm caused by gambling

A report prepared for the Queensland Government investigating alcohol related violence and the night time economy observed that the ID scanner equipment improves the ability to enforce banning orders (note that these banning orders refer to liquor rather than gambling).

According to the Chief Executive of Christchurch Casino in New Zealand, Brett Anderson, ‘we have been looking at [an] 88 percent success rate over a recent two-month period’ in relation to the facial recognition system used to detect voluntarily excluded persons.

It has been reported that FRT has been successfully trialled at several gaming venues in New Zealand. Japan and Macau are still in the trial phase of FRT and South Australia has recently implemented its system. No evidence of the effectiveness of FRT for these jurisdictions has been identified through desktop research.

No evidence has been identified for the effectiveness of FRT in the United Kingdom.

### Outcome 4: Evidence of weakness or adverse impacts including on recreational gamblers

Some weaknesses of FRT were identified through desktop research:

- An evaluation report on the Queensland ID scanner technology identified implementation issues in relation to processing and software of the ID scanners, although specific details were not provided. In addition, issues were raised relating to the training required to operate scanners, rescanning of patrons and the days and times of operation. These weaknesses were not considered significant.

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Evidence of weakness or adverse impacts of FRT was not identified for South Australia, Japan, Macau, New Zealand or the United Kingdom.

**Outcome 5: Information about implications or potential traps to be considered further by the expert consultant such as privacy concerns**

The key implications or potential traps flagged for consideration include:

- For SA, the critical implementation issue facing Consumer and Business Services (CBS) included how venue staff dealt with potentially barred persons who may or may not have entered the gaming area. The issue was resolved by the Commissioner issuing new gaming machine licence conditions which:
  - outlined a procedure detailing the in-venue management of suspected barred person
  - require that venues ensure devices that receive Barring and Online Employee Notification (BOEN) notifications are not visible to the general public.

- In Queensland, the cost of ID scanner operation has been flagged as high, as licensed security guards need to be paid for a minimum of four hours. It has been reported that this has resulted in the increase of some venues’ security bills by 40 per cent.

- Privacy and usage concerns have been raised in the UK about the widespread adoption of FRT. Accordingly, the perception of how the FRT systems will operate is important to manage.
  - However, there is support for the technology within the gambling industry with the view there would be benefits for:
    - improving security
    - identifying minors
    - preventing fraud
    - preventing banned players from entering gambling premises.
  - Moreover, recent research indicates privacy concerns may be overstated with citizens surveyed from the United Kingdom (also Germany, US and China) viewing convenience and improved security as the foremost concerns.

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14 Ibid, p2
15 Ibid, p2
19 Improving security, identifying minors and preventing fraud were not specifically investigated in this report.
The critical implementation issue for the FRT system in New Zealand is the cost of purchasing, installing and operating the system, particularly for venues operating a small number of EGMs.\(^{22}\)\(^{23}\) Furthermore, a salient consideration from a regulatory perspective is that there appears to be no governmental oversight of the system in New Zealand.

**Outcome 6: Evidence of potential costs associated with implementing these technologies (where reasonably identifiable)**

Costs associated with implementing FRT were identified for New Zealand.

**New Zealand**

**Capital costs**

The cost for venues to install a Guardian system depends on the number of cameras and the type of system chosen. The initial hardware costs for:

- The Guardian system comprises:
  - 2 to 6 camera systems cost between $NZ17,918.28 to $NZ31,278.48.\(^{24}\)
- The Guardian Edge system comprises:
  - 1 to 6 camera systems cost between $NZ10,545.00 and $NZ19,170.00.\(^{25}\)

These prices do not include costs for optional upgrades, installation or pre-wiring requirements.

**Operational costs**

The operational costs of running a Guardian system vary. The monthly fee for:

- The Guardian system comprises:
  - 2 to 6 cameras, $NZ445.00 to $NZ825.00.\(^{26}\)
- The Guardian Edge system comprises:
  - 1 to 6 cameras, $NZ285.00 to $NZ525.00.\(^{27}\)

No training costs were identified.

The costs for FRT systems in the United Kingdom were identified as variable, and depend on the scope of the system and the system provider.\(^{28}\)

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2.2 Player card gaming

Research indicates that player card gaming (PCG) systems generally involve three main components as outlined in Figure 3:

- **Patron identification:**
  - Meaning a patron must register their details to access the card.
  - It can include identification of excluded persons.

- **Cashless gaming:**
  - Meaning a cashless payment method that can interface with the card.
  - Includes ticket-in ticket-out (TITO) systems, card based cashless systems, account based system and mobile / digital wallets.

- **Pre-commitment tools:**
  - Meaning features such as time and expenditure limits, tracking gambling activity and prompting breaks in play.

Figure 3: Player card gaming – common components

PCG systems can have one or more of these components. However, only those systems that have all three components would meet the expectations of the State Government given the nature of their reference to the Commission.

Based on research, it is understood that cashless gaming is not considered to have any innate harm minimisation features as it is simply an alternative payment method to cash. To illustrate:

- TITO systems essentially replace cash for loading credit into EGMs and receiving winnings.
- Card based cashless systems can be charged with cash or charged virtually through an online account / wallet and receive winnings on the card.
- Digital / mobile wallets allow the user to transfer and withdraw money using a linked card or account.

Furthermore, PCG systems can be anonymous or registered to an identified person.

Figure 4 shows the jurisdictions that were the focus of the current research into the use of PCG.
A range of player card gaming systems have been trialled and used in Australia, Nova Scotia (Canada), Norway, Sweden and other countries internationally. The use and application of PCG systems is variable across jurisdictions, and regulators differ in their approach to the mandatory / voluntary nature of its use in relation to gaming on EGMs or their jurisdictional equivalents.

Evidence of the effectiveness of PCG in terms of minimising harm caused by gambling was identified for Queensland, Victoria, New Zealand, Norway, Nova Scotia and Nevada (USA). NSW has not yet undertaken their trial of a PCG system and no evidence was identified for Sweden’s PCG system.

Evidence of weakness or adverse impacts of player card gaming broadly related to the low usage of the PCG systems. Key drivers of low usage were privacy concerns, patrons not seeing a need for or the benefits of using PCG systems, and a lack of promotion of PCG systems by venues. The only evidence of adverse impacts of PCG was identified was the potential for patrons to spend more using cashless payment methods.

The research identified some implications or potential traps to be considered further, including issues related to:

- privacy concerns
- dealing with risks associated with cashless payment technologies
- staff training.

Information regarding costs associated with implementing PCG technologies were mostly unavailable. However, some limited costing information was identified for the Victorian and Nova Scotia systems, which indicates that costs are highly variable and involve cost to government and industry.

**2.2.1 Research outcomes**

This section summarises the findings of the desktop review of the use of PCG technologies.

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29 Anna Thomas, Darren Christensen, Julie Deblaquiere, Andrew Armstrong, Sharnee Moore, Rachel Carson and Angela Rintoul Review of electronic gaming machine pre-commitment features: Limit setting, Australian Gaming Research Centre. Accessed 15 December 2021

30 For example, Canada and the USA operate video lottery terminals, which is a type of electronic gaming machine.
### Outcome 1: A global environmental scan of the harm minimisation technologies identifying the range of options available

PCG systems have been trialled and used in Australia, Canada (Nova Scotia), Norway, Sweden and other countries internationally.\(^{31}\)

Examples of the types of PCG currently in use include:

- The PCG system planned to be trialled in Newcastle, NSW that ‘...is linked to identity, a bank account and with harm minimisation settings.’\(^{32}\)\(^{33}\)
- The IGT ADVANTAGE™ system being used in Nevada, USA.
  - This system is digital wallet based and must be able to identify the patron and allow them to set transfer limits.\(^{34}\)\(^{35}\)
- The account-based cashless gaming system used at SkyCity Adelaide Casino in conjunction with the SkyCity Rewards Card.
  - The account based cashless gaming system has some pre-commitment tools, may identify patrons and works alongside the South Australian voluntary pre-commitment system that must be offered to patrons.

### Outcome 2: Details of where these technologies are operating including the regulatory frameworks and industry practices/requirements

Regulators differ in their approach to the mandatory / voluntary nature of the use of PCG in gaming. For example:

- Using the PCG is mandatory to gamble on the equivalent of EGMs in Nova Scotia, Norway and Sweden.
- Whereas patrons in the other jurisdictions can choose to use the PCG system.

All jurisdictions’ PCG systems have the potential to identify patrons, but some jurisdictions, such as VIC, SA, Qld and Nova Scotia, have anonymous options for players to use.

PCG systems allow for payment methods independent of the PCG system, such as TITO in SA and VIC.

- In other words, the mechanism used to pay is not always the same as the mechanism used to access pre-commitment.

The high-level pre-commitment features used in the jurisdictions reviewed comprised:

- Core features:
  - time limits, which can apply to over a day, week, month and year
  - expenditure limits, which can apply over the same periods
  - player activity data (live / historical).

- Other features:

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\(^{31}\) Anna Thomas, Darren Christensen, Julie Deblaquiere, Andrew Armstrong, Sharnee Moore, Rachel Carson and Angela Rintoul Review of electronic gaming machine pre-commitment features: Limit setting, Australian Gaming Research Centre. Accessed 15 December 2021


\(^{33}\) Ibid.

\(^{34}\) Newsdesk, IGT receives full Nevada regulatory approval for cashless gaming solution, Inside Asian Gaming website. Accessed 26 January 2022

• self-exclusion
• breaks in play
• on-screen messaging
• money limits, such as maximum balance or transfer limits.

EGMs use communications protocols to communicate usage data to a monitoring system. Communication protocols can be mandated by regulators and accordingly that affects the type and thus features of EGMs used.

Gaming machine protocols in use include:
• X-standard (used in NSW)\textsuperscript{36}
• QCOM (used in Qld, SA, TAS, NT and in VIC gaming venues)\textsuperscript{37}
• ASP (used in VIC Melbourne casino)
• IGT SAS protocol (widely used internationally).\textsuperscript{38}

\textbf{Outcome 3: Evidence of effectiveness including the minimisation of harm caused by gambling}

Evidence of the effectiveness of player card gambling in terms of minimising harm caused by gambling was identified for Queensland, Victoria, New Zealand, Norway, Nova Scotia and Nevada (USA).

A range of issues related to harm minimisation were identified as a result of Queensland’s trialling of PCG, including:
• potential to improve the written information given to players about harm minimisation to support cashless card based gaming
• people who received warnings in relation to their gambling activity reflected on their gambling spend
• people who used pre-commitment to set limits decreased their spending on gambling
• the way information was presented on expenditure statements in the provider’s system, SIMPLAY, needed improvement.\textsuperscript{39}

Victoria’s evaluation (2019) of YourPlay found the usage was low owing to YourPlay being an opt-in, voluntary pre-commitment system. Furthermore, high loss limit setting was observed among many YourPlay users which suggests that the loss limit setting feature is unlikely to have a significant impact on harm reduction.\textsuperscript{40}

In New Zealand’s commissioned report, \textit{An exploratory study examining pre-commitment in New Zealand}, the relevance of cashless gambling technology to pre-commitment systems, and thus its role in harm minimisation, was questioned.

\textit{The reason why cashless gambling was raised as a useful feature of pre-commitment systems by problem gamblers is unclear.}

\textit{Early trials of cashless gambling based pre-commitment systems in some jurisdictions have anecdotally reported that cashless gambling may allow improved expenditure monitoring by gamblers (as money is held in an account on a card).}


\textsuperscript{38} International Game Technology, Slot Accounting System, Protocol Version 6.02, 2005. Document provided by expert consultant


However, the longer-term impacts of cashless gambling remain unknown. It is also apparent that, while some gamblers consider cashless gambling as useful, some members of the community in New Zealand remain concerned about possible ‘unknown’ effects of cashless gambling (e.g., whether it could lead to greater gambling expenditure).

This may thus highlight the potential to examine both cashless and non-cashless pre-commitment systems in any future New Zealand trials.\(^{41}\)

Norway experienced some harm minimisation effects where Ladouceur, Blaszczynski and Lalande (2012) put forward ‘arguments offered by both proponents and opponents of pre-commitment referred to available data derived from trials conducted in …Norway with no apparent consensus on what the data demonstrated in respect of the effectiveness of pre-commitment as a public health measure.’\(^{42}\)

Notably, Rintoul and Thomas suggest that ‘An assessment of the impact of [Norway’s full pre-commitment system including a universal maximum loss limit per day and month] demonstrated that losses fell following the introduction of new machines in 2009, while calls to gambling helplines reduced substantially, providing indirect evidence that the changes were successful (Lund, 2009).’\(^{43}\)\(^{44}\)

Figures reported by Norsk Tipping (a Norwegian Government owned company offering gambling services) in 2012 indicate that in Q4 of 2011:

- 15% of gamblers were stopped by their Global monthly limit
- 1.6% of gambling sessions stopped with the mandatory break (after 1 hour of continuous play)
- 1.1% set personal time limits
- 2.3% set stricter personal money limits.\(^{45}\)

They report this as a success and discuss that although the ‘ban on bank notes and the later ban on slot machines had the biggest effect on [reducing player gambling expenditure] but the introduction of IVTs [interactive video terminals] did not bring the problems back.’\(^{46}\)

They also noted that the ‘Player Card imposed some challenges [regarding player impulse] arising from the transfer of money and availability.’\(^{47}\)

A report undertaken to evaluate Nova Scotia’s PCG scheme the “My-Play System” (MPS) suggests that there was a general decline in problem gambling rates within the cohort of problem video lottery gamblers that participated in the study, although this trend emerged before the introduction of the MPS. This was likely partially attributed to general declines.\(^{48}\)

The proportion of problem and medium-risk gamblers decreased from the baseline rate in 2008 of 53% to 29% in 2013 during the mandatory phase.\(^{49}\)


\(^{45}\) Bjørn Helge Hoffmann, op. cit., p 23

\(^{46}\) Ibid., p 8, 27

\(^{47}\) Ibid., p 23.


\(^{49}\) Ibid., p 53
The data suggested ‘…problem and medium-risk gamblers are disproportionately spending less time and money on VLT gambling than before as compared to non-problem or low-risk gamblers.’

In conclusion, ‘this report presents the final results of the evaluation of the MPS that took place over a five-year period from 2008 to 2013… Overall, the results suggest that while some aspects of the [MPS] were associated with reduced negative outcomes for [video lottery] gamblers, poor utilization of the system was a significant issue.’ Moreover, the effectiveness of the harm minimisation features of the MPS varies from having no effect to having a positive effect to being associated with increasing gambling spending.

There is little information regarding the impacts of cashless wagering systems in Nevada on harm minimisation. It is understood that the ‘Executive Director of the National Council on Problem Gambling (NCPG), reportedly stated that cashless systems …are designed to increase the time and money that gamblers spend at the table, and are inherently likely to negatively impact individuals with gambling problems (Whyte, 2020; Cited in Silverstein, 2019).’

Outcome 4: Evidence of weakness or adverse impacts including on recreational gamblers

Evidence of weakness or adverse impacts of PCG broadly related to low uptake of the systems being implemented.

Queensland’s trial of PCG experienced low uptake of the pre-commitment setting features.

A focus group undertaken during the evaluation of Victoria’s YourPlay scheme indicated that there were mixed views regarding the scheme:

- The majority of the focus group thought that the fact limits can be over-ridden when reached made YourPlay ineffectual.
- The main barrier of the focus group was:
  - they felt the scheme was aimed at at-risk gamblers
  - was unnecessary for them to use.
- Privacy concerns were raised in relation to YourPlay on-screen messaging popping up and being visible to others.
  - This concern underpinned feeling about the potential stigma of using a pre-commitment scheme.

During the exploratory study by Schlotter Consulting examining pre-commitment in New Zealand, a focus group of patrons ‘…discussed the concept of cashless gambling as a possible feature of a future pre-commitment system. There was a general view, however, that if the system was cashless, then a range of security features needed to be in place to ensure that gamblers did not lose the money they held on their card.’

The focus group also outlined specific views about cashless gambling, which included:

- Concerns about the security of cards, especially anonymous cards.
Potential for spending more money on gambling because:
- using the card could allow you to play longer
- the card is ‘…not as material as the actual cash in front of you.’

According to the Nova Scotia Gaming Corporation (NSGC), the Government removed the MPS from VLTs in August 2014 after determining that the system was ‘…not meeting its objectives.’

‘[The] data showed that more than 99.9% of video lottery players chose light enrolment, used multiple cards and card shared, and the vast majority of players were not using the system features at all.’

Therefore, the inherent weakness of the MPS was that, despite it being mandatory, patrons had significant choice on the types of harm minimisation features imposed on them – and the vast majority chose to not use them.

**Outcome 5: Information about implications or potential traps to be considered further by the expert consultant such as privacy concerns**

A report summarising Queensland’s trial of PCG identified some critical implementation issues, including:
- the uptake of card-based gaming took 3-4 months to peak before steadying
- the use of pre-commitment limit settings by patrons was dependent on the promotion of these features by the venue
- it being vital for the system provider to give ‘…simple and ongoing training for staff and detailed training for players.’

Standout findings regarding critical implementation issues included:
- ‘Any future rollout of card-based gaming to additional venues should have harm minimisation promoted as the primary objective of the technology offering.’
- ‘Early trials will require significant effort to encourage adoption to achieve the objectives of pre-commitment as a gambling harm minimisation measure.’
- ‘Given that many players just use card-based gaming for “cashless convenience”, [the] findings…further emphasise the need for venues to actively promote harm-minimisation benefits to ensure that they are leveraged by players.’
- ‘…pre-commitment systems were seen [by venue staff] to have some potential to reduce venue workloads and offer gamblers harm-minimisation benefits, though achieving those benefits would be more likely if venues opted for full cashless gaming and all gamblers used pre-commitment.’

A critical implementation issue identified in Victoria was the need to resolve a range of fundamental policy and design issues, such as the ones posed in the Pre-commitment Discussion Paper published by Department of Justice and Community Safety (DJCS) in 2011.

- Examples include defining:

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58 Ibid.
60 Ibid.
61 Ibid.
63 Ibid., p 6
64 Ibid., p 10
65 Ibid., p 14
66 Ibid., p 37
what pre-commitment is and what might it do (such as potential equipment, the features and processes, incentives that influence take-up and use of pre-commitment)
- what the technical options are for pre-commitment (such as networked or non-networked systems)
- who should provide pre-commitment (such as responsibilities and provider options).

The evaluation of YourPlay identified key issues of the implementation of YourPlay, including:

- Very low usage:
  - Comprised 0.01% of gaming machine turnover in hotels and clubs
  - In the casino, limits chosen are frequently too high to be realistically binding. Daily spending limits of more than $1 million have been reported as common.
- Hotels and clubs not complying with requirements of YourPlay:
  - YourPlay was only offered in 31% of visits when joining loyalty programs
- Poor cost effectiveness:
  - Cost per patron for the harm reduction benefits was $1,162.55.
- High loss limits set by patrons leading to diminished harm reduction benefits.

A set of 23 recommendations were outlined in the Evaluation of YourPlay Final Report to address these issues, which include:

- YourPlay be set to opt-out for linked loyalty schemes
- funding a communications strategy to improve the awareness of YourPlay
- developing options to better incentivise YourPlay use by patrons and venues.

The Department intends to consult with the Victorian Responsible Gambling Foundation and the Victorian Commission for Gambling and Liquor Regulation to implement the recommendations outlined in the YourPlay evaluation report. The timeline for the implementation of the recommendations is not clear.

However, as at January 2022, the Victorian Government passed legislation acting on nine of the 33 recommendations made on the Victorian Royal Commission into the Casino Operator and Licence, which have some similarities in enhancing harm minimisation measures, to those in the YourPlay Evaluation Report.

The relevant critical issues arising from the Nova Scotian MPS include:

- In a 2014 news release, the responsible Minister, Andrew Younger, stated:

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68 Steve Whetton et al., op. cit., p i
69 YourPlay – Victoria’s pre-commitment scheme, Department of Justice and Community Safety website. Accessed 20 January 2022
70 Ibid., p i
71 Ibid., p ii, xv
72 Ibid., p ii-iv
73 YourPlay – Victoria’s pre-commitment scheme, Department of Justice and Community Safety website. Accessed 20 January 2022
While the My-Play System may have been a reasonable attempt to improve responsible gaming features on VLTs, in the end, it did not reduce play by people with gambling addictions, and in fact, the vast majority of play sessions didn’t even use the main features of the product.\textsuperscript{75}

- the main features of the MPS include responsible gambling features such as time and spending limit setting, and player activity statements
- this shows a distinct failure of the system to achieve the harm minimisation goals outlined by the Nova Scotian Government.

**Issues with the data being used to evaluate the outcomes of the voluntary and mandatory phases of the implementation of the MPS arising from:**

- Delays in rolling out the voluntary and mandatory phases of the MPS:
  - disrupting the data collection approach and timelines leading to lags between surveys\textsuperscript{76}
  - loss of participants over time which ‘…impacted the generalizability of results’\textsuperscript{77}
- The system provider losing 9 months of data during the voluntary evaluation period\textsuperscript{78}

**Issues arising from players and venues not complying with the system:**

- ‘Players were sharing cards, as well as carrying multiple cards and disposing of them in a public way (i.e., garbage cans, littering the floors, or leaving them at the machines).
- Furthermore, despite compliance testing efforts, some establishments left pre-enrolled cards at the terminal for all players to use, which was against operating policies.
- With the large majority of players using the light enrolment option and multiple cards, it was increasingly difficult to interpret the systems data.’\textsuperscript{80}

It was also impossible to evaluate the benefits of a voluntary vs. mandatory MPS, as the mandatory light enrolment option was essentially the same as having the voluntary option.\textsuperscript{81}

The critical implementation issue arising from Nevada (United States) appears to be balancing reforms to support new technology with that of the potential impact on gamblers, as demonstrated by Sandra Morgan, the Nevada Gaming Control Board Chairperson. She said of the implementation of cashless wagering systems, ‘I’ve been pretty public saying that I’m open to looking at new ways that technology can help attract new customers and be beneficial for not only the industry, but even for responsible gaming measures as well.\textsuperscript{82}

Widespread industry development of cashless wagering systems in Nevada following the regulatory changes to the Nevada legislation and the publishing of technical standards to allow for the use of cashless wagering systems\textsuperscript{83} indicates that there is likely to be benefits to the operators of the new

\textsuperscript{75} Nova Scotia Provincial Lotteries and Casino Corporation, Government to Remove My-Play System from VLTs. Accessed 24 January 2022

\textsuperscript{76} Responsible Gambling Council Centre for the Advancement of Best Practices, op. cit., p 9

\textsuperscript{77} Ibid.

\textsuperscript{78} Ibid.

\textsuperscript{79} Ibid.

\textsuperscript{80} Ibid., p 10

\textsuperscript{81} Ibid., p 10

\textsuperscript{82} Richard N. Velotta, Nevada commission considers regulations for more cashless gaming, Las Vegas Review-Journal. Accessed 27 January 2022

\textsuperscript{83} Howard Stutz, Nevada Gaming Commission approved regulation allowing cashless registration, The Nevada Independent. Accessed 27 January 2022
systems. However, there are suggestions, such as those by Keith Whyte, that cashless wagering systems are likely to negatively impact gamblers.84

### Outcome 6: Evidence of potential costs associated with implementing these technologies (where reasonably identifiable)

Information regarding costs associated with implementing PCG technologies were mostly unavailable. However, some information for the Victorian and Nova Scotia systems indicated costings. The estimated total costs of the Victorian YourPlay scheme comprised the following costs incurred from 2014/15 to 2018/19:

- $5,996,110.32 incurred by the Victorian Government:
  - Comprising staff implementation costs, software costs, communication strategy, evaluation and YourPlay days.85
- $58,837,589.92 incurred by the gaming industry:
  - Comprising pre-commitment system fees, costs to purchase card reader and kiosks, staff training costs and staff time to register players.86
- $2,339,417.88 incurred by gamblers:
  - Comprising time value of registering and inserting card and using a PIN.87

Nova Scotia – The total cost of the MPS was $CAD19,500,00088, comprising:

- $CAD13,100,000 in capital costs
- $CAD6,400,000 in costs related to developing and operating the system.89

Costing information was not identified for New Zealand, Norway, Sweden, Nevada (United States), South Australia, Queensland or NSW.

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84 Victorian Responsible Gambling Foundation, *What is the impact of cashless gaming on gambling behaviour and harm?*, 2020, p 64. Accessed 27 January 2022
85 Steven Whetton, et al, op. cit., p 120
86 Ibid.
87 Ibid.
88 Equivalent to approximately AUD$21.5million (as of 9 February, 2022)
Appendix A. Detailed Research

Facial recognition technology

**Global scan**

Table 3: Global scan of facial recognition technologies

<table>
<thead>
<tr>
<th>Research question</th>
<th>Facial Recognition Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 1: Global environmental scan</strong></td>
<td></td>
</tr>
</tbody>
</table>
| What are the technology options available? | Facial recognition technology (FRT) is being used by governments, businesses and people in many applications which include digitally accessing information, policing and travel / immigration in addition to gambling.  
There is a range of facial recognition systems in use but fundamentally facial recognition systems compare two images. This can comprise an ‘active’ image with a ‘control’ image.  
To illustrate, FRT used in licensed gaming venues in South Australia is defined as ‘...a biometric technology capable of identifying or verifying a natural person using a digital image or a video frame captured from a fixed video source.’ |
| What are the broad parameters / components of each option? | The widespread adoption and use of FRT has led to many permutations and combinations of their components and parameters.  
Fundamentally, a facial recognition system comprises:  
- an imaging device  
- control information  
- a comparison system.  
Imaging devices include digital cameras, video surveillance cameras, thermal imaging cameras and drones, |

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93 Professor Pete Fussey and Dr. Daragh Murray, [Independent Report on the London Metropolitan Police Service’s Trial of Live Facial Recognition Technology](https://www.essex.ac.uk/human-rights), Essex University Human Rights Centre, p 5. Accessed 13 December 2021

Control information includes biometric passports\textsuperscript{95}, images from social media or video surveillance footage.\textsuperscript{96}

The comparison system is used to compare and analyse the taken image with the control image and any other relevant information. An example would include video-based facial recognition systems, such as the one described by Thales\textsuperscript{97}, that uses algorithms to detect, track and recognise faces.

There is a wide range of FRT systems in use across a variety of applications, including in relation to gambling. To illustrate, see the examples of FRT systems in Table 4.

Table 4: Examples of FRT systems

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>FRT example</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Australia</td>
<td>South Australia has implemented a framework for the use of FRT in hotels, clubs and the casino. Licensed gaming venues that operate at least 30 EGMs (with at least one being fitted for a note acceptor) must operate a facial recognition system. Venues can choose their facial recognition system from a list of approved providers and systems. Approved facial recognition systems vary in that they can be used with existing CCTV infrastructure or be entirely separate, such as cloud-based comparison systems using specialised cameras. Further details are available in Table 7.</td>
</tr>
<tr>
<td>Queensland</td>
<td>Approved ID scanning equipment is being used in some licensed venues in Queensland. While this system is not facial recognition, it does have some similar characteristics. The systems comprise an ID scanner (imaging device) that has character recognition to read the person’s name and date of birth on their identification (control information) and compares (comparison system) the identification ‘…against a database of individuals who are subject to a banning order’ (control information).</td>
</tr>
<tr>
<td>International / Australia</td>
<td>Face ID is being used to facilitate gambling in Australia. For example, online betting agencies operating in Australia, such as Sportsbet, allow their users to use Face</td>
</tr>
</tbody>
</table>
ID in combination with Apple Pay\textsuperscript{100} to transfer money to their betting account. \textsuperscript{101}

Apple’s Face ID technology is a tangible and accessible example of a sophisticated FRT used in several applications including accessing finances and payment authorisation.

Face ID is comprised of a TrueDepth camera (imaging device) which captures accurate face data using infra-red projection, among other technologies. The face data is then processed into a mathematical representation of the users face and is then compared (comparison system) to the enrolled facial data (control information). \textsuperscript{102}

International

Automated border control systems are used in airports worldwide by the European Union and variety of countries, such as the United States of America, Australia, Hong Kong. \textsuperscript{103}

They comprise cameras installed in small kiosks inside electronic gates and take high-quality images of the person to compare against their passport. \textsuperscript{104}

### Jurisdictional Analysis

**Queensland**

Table 5: ID scanning technology used in Queensland licensed venues

<table>
<thead>
<tr>
<th>Research question</th>
<th>ID scanning technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome 1: Jurisdictional scan</td>
<td></td>
</tr>
<tr>
<td>What technology options are available?</td>
<td>Facial recognition technology is not used in ID scanning equipment approved for use in licensed venues. The Queensland Government has implemented ID scanning technology as a tool to assist specified licensed venues in identifying individuals subject to a liquor related banning order. \textsuperscript{105} The approved ID scanners must be used by licensed venues operating in safe night precincts that trade after midnight. Importantly, approved ID scanners can be used by licensed premises not required to install them. \textsuperscript{106}</td>
</tr>
</tbody>
</table>

\textsuperscript{100} Apple Pay allows users to make purchases using their credit or debit card held in a digital wallet on their phone

\textsuperscript{101} [What is Apple Pay? How do I deposit with Apple Pay?](#), Sportsbet website. Accessed 14 December 2021

\textsuperscript{102} [About Face ID advanced technology](#), Apple support website. Accessed 14 December 2021


\textsuperscript{104} Ibid.

\textsuperscript{105} ID scanning in licensed venues, Business Queensland website. Accessed 19 January 2022

\textsuperscript{106} Ibid.
There are three approved system providers who provide approved ID scanning equipment to licensed venue operators (see Table 6) in Queensland.

<table>
<thead>
<tr>
<th>Approved operator</th>
<th>Approved ID Scanning equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scantek Solutions Pty Ltd</td>
<td>Details not publicly available</td>
</tr>
<tr>
<td>Infosign Pty Ltd</td>
<td>Details not publicly available</td>
</tr>
<tr>
<td>IDU Technologies Pty Ltd</td>
<td>Details not publicly available</td>
</tr>
</tbody>
</table>

### Table 6: Queensland approved operators and approved ID scanning equipment

**What are the technology’s broad parameters / components?**

The approved ID scanning equipment broadly comprises:

- **An ID scanner terminal (IST):**
  - ‘A device that is capable of scanning a person’s identification and provides user functionality.’

- **A local venue host (LVH):**
  - ‘A device that serves as the central point of communication for ISTs in a venue.’

- **Central host (CH):**
  - ‘A device/server that communicates with venue LVHs and the Queensland Government Data Centre. A CH can only be operated by an approved operator.’

When an ID is scanned:

- An IST scans the photo ID presented to the terminal operator and records patron scan data.
  - Patron scan data comprises ‘[a] person’s full name, date of birth and the photograph of the identification holder as displayed on their identification document.’

- Checks the full name and date of birth ‘…against a database of individuals who are subject to a banning order’.

Both the ID scanning system and venue staff notify the Queensland Police Service if a person subject to a banning order is positively identified attempting to enter the licensed venue.

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110 There can also be combined LST / LVH. Ibid.
111 Ibid.
112 Ibid.
113 Ibid.
The approved ID scanning equipment must comply with *ID Scanning Minimum Technical Requirements*.  

**Outcome 2: Where and how**

**What is the regulatory framework that applies?**

The legislative framework for ID scanning was established by the *Safe Night Out Legislation Amendment Act 2014*[^117] through the insertion of Part 6AA into the *Liquor Act 1992*. On 1 July 2017 mandatory operation of approved ID scanning equipment was introduced in licensed venues operating during specified times.

The legislative framework is determined by the *Liquor Act 1992* alongside:

- Liquor Regulation 2002
- ID Scanning Minimum Technical Requirements[^118]
- Guideline 64: Privacy obligations for establishing and operating identification scanning systems[^119]

Figure 5 visualises the governance framework resulting from legislation and outlines the relationships between key stakeholders in ID scanning systems.

**Figure 5: ID scanning system – Qld governance framework**

**What business practices/requirements are in place?**

The key business practices / requirements in place for licensed venues are:

[^116]: Department of Justice and Attorney-General, *Identification scanning system minimum technical requirements*. Accessed 20 January 2022


[^118]: Department of Justice and Attorney-General, *Identification scanning system minimum technical requirements*. Accessed 20 January 2022

- patron’s IDs must be scanned from 10pm until closing from Friday to Sunday and on public holidays\textsuperscript{120}
- staff operating the ID scanner must be a licensed crowd controller unless otherwise not required/exempt\textsuperscript{121}
- staff must be trained in the operation of approved ID scanners
- only specified forms of ID are accepted\textsuperscript{122}
- venues must comply with the privacy obligation guideline.

### Outcome 3: Evidence of effectiveness

<table>
<thead>
<tr>
<th>What research outcomes exist that the technology is effective:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• From an operational perspective A report prepared for the Queensland Government investigating alcohol related violence and night time economy monitoring observed that the ID scanner technology improves the ability to enforce banning orders (note that these banning orders refer to liquor rather than gambling).\textsuperscript{123}</td>
</tr>
<tr>
<td>• In minimising gambling harm The system is only used by certain licensed premises and is not used to police gambling areas.</td>
</tr>
</tbody>
</table>

### Outcome 4: Evidence of weaknesses/impacts

<table>
<thead>
<tr>
<th>Have any weaknesses of the technology been identified, and what evidence exists of the extent of these weaknesses?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation issues in relation to processing and software of the ID scanners were identified. In addition, issues related to the training required to operate scanners, rescanning of patrons and the days and times of operation. These weaknesses were identified in a report prepared for the Queensland Government and were not considered significant.\textsuperscript{124}</td>
</tr>
<tr>
<td>Have any adverse impacts on recreational gamblers been identified? What evidence exists on the extent of these impacts?</td>
</tr>
<tr>
<td>The system as currently implemented does not apply to gambling. However, the introduction of scanners corresponded with an increase in the number of licensed liquor venues with patrons queueing for entry, due to the increased time required to process patrons for entry.\textsuperscript{125}</td>
</tr>
</tbody>
</table>

### Outcome 5: Implications or potential traps

\textsuperscript{120} Licensee requirements for scanning a person’s ID, Business Queensland website. Accessed 19 January 2022
\textsuperscript{121} Operational requirements for networked ID scanning, Business Queensland website. Accessed 19 January 2022
\textsuperscript{122} Ibid. Accessed 20 January 2022
\textsuperscript{124} Ibid., p 540. Accessed 21 January 2022
\textsuperscript{125} Ibid., p 562. Accessed 21 January 2022
What are the critical implementation issues or concerns?

The cost of ID scanner operation has been flagged as high, as licensed security guards need to be paid for a minimum of four hours. It has been reported that this has resulted in the increase of some venues’ security bills by 40 per cent.126

Outcome 6: Potential costs

What are the implementation costs for the technology:

- **Capital costs**
  - The costs of implementing ID scanners to the Queensland Government comprised the following from 2016-17 to 2017-18:
    - $4,253,000 arising from:
      - Office of Liquor and Gaming Regulation (OLGR) compliance initiatives and staff costs127
    - $811,000 arising from:
      - ID scanner subsidies paid to venues by OLGR128

- **Operational costs**
  - The costs of implementing ID scanners to industry comprised $3,347,000 arising from the purchase of ID Scanners (not including the $811,000 subsidy) from 2016-17 to 2017-18.129

- **Training costs**

South Australia

Table 7: Facial recognition technology used in relation to South Australian EGMs

<table>
<thead>
<tr>
<th>Research question</th>
<th>Facial Recognition Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 1: Jurisdictional scan</strong></td>
<td></td>
</tr>
<tr>
<td>What technology options are used?</td>
<td>There are a total of 14,682 gaming machine entitlements130 in South Australia, comprising:</td>
</tr>
<tr>
<td></td>
<td>• 13,687 for hotels and clubs131</td>
</tr>
<tr>
<td></td>
<td>• 995 for the casino,132</td>
</tr>
</tbody>
</table>

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127 Ibid., p 643
128 Ibid., p 643
129 Ibid., p 643
130 A right to operate a gaming machine
There are five approved system providers who provide facial recognition technology to licensed gaming venue operators (see Table 8) in South Australia.\textsuperscript{133}

Table 8: South Australian approved system providers and approved FRT systems

<table>
<thead>
<tr>
<th>Approved system provider\textsuperscript{134}</th>
<th>Approved FRT Systems\textsuperscript{135}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torutek Limited</td>
<td>Concern and Guardian</td>
</tr>
<tr>
<td></td>
<td>Concern and Guardian (Edge)</td>
</tr>
<tr>
<td>Vix Vision Pty Ltd</td>
<td>Imagus Facial Recognition</td>
</tr>
<tr>
<td>RealNetworks Australia Pty Ltd</td>
<td>SAFR</td>
</tr>
<tr>
<td>Tekhne Logia Pty Ltd</td>
<td>NX Witness</td>
</tr>
<tr>
<td>Camvex (VIC) Pty Ltd</td>
<td>Optimum Facial Recognition Solution</td>
</tr>
</tbody>
</table>

What are the technology’s broad parameters / components?

Approved facial recognition systems in South Australia are ‘…biometric technologies capable of identifying or verifying a natural person using a digital image or a video frame captured from a fixed video source.’\textsuperscript{136}

The specific parameters of the technology options are dependent on the approved provider and the scope, features and support for the approved facial recognition system. Both the providers and the systems must meet the requirements outlined in the following guidelines:

- Gambling Administration Guidelines Facial Recognition System Provider Requirements
- Gambling Administration Guidelines Facial Recognition Systems – Gaming Machine Licence
- Gambling Administration Guidelines Facial Recognition Systems – Casino Licence.\textsuperscript{137}


The guidelines set the framework for providers and systems within South Australia and allow for a market-based solution to the development of the relevant facial recognition technologies.

Outcome 2: Where and how

What is the regulatory framework that applies?

The South Australian parliament passed legislation in 2019 to require certain gaming machine venues and the Casino to operate FRT to identify barred patrons.

Specifically, FRT reforms comprised:

\begin{itemize}
  \item \textsuperscript{133} Facial recognition technology, Consumer and Business Services website. Accessed 12 January 2022
  \item \textsuperscript{134} Ibid. Accessed 12 January 2022
  \item \textsuperscript{135} Ibid. Accessed 12 January 2022
  \item \textsuperscript{136} Consumer and Business Services, Gambling Administration Guidelines - Facial Recognition System Providers, p2. Accessed 14 January 2022
  \item \textsuperscript{137} Gambling Administration Guidelines, Consumer and Business Services website. Accessed 12 January 2022
\end{itemize}
- Requiring venues that operate 30 or more gaming machines (with at least one of them having a bank note acceptor) were required to install approved facial recognition systems.
  - venues that did not meet this requirement are still able to install approved facial recognition systems.
- Requiring the casino licensee to install and operate an approved facial recognition system in the gaming areas of the licensed casino.

The regulatory framework in place in South Australia regarding FRT comprises:
- Gambling Administration Act 2019 (the GAA)
- Gaming Machines Act 1992 (the GMA)
- Gaming Machines Regulations 2020 (the GMR)
- Casino Act 1997 (the CA)
- Casino Regulations 2013 (the CR).

Section 40D under both the CA and the GMA enables the Commissioner to approve a facial recognition system for use in the casino or hotels and clubs if the facial recognition systems meet the technical requirements for such systems as outlined in the guidelines.

A key interaction of any approved facial recognition system is with the Barring and Online Employee Notification system. Through venue staff, BOEN can allow patrons to be excluded from one or many venues but not be barred from gambling venues state-wide.

A barring order can also be made at the request of a third party if the licensee or the Commissioner if satisfied that the person is at risk of harm from gambling or is at risk of causing harm to a family member of the person, because of gambling.

<table>
<thead>
<tr>
<th>What business practices/requirements are in place?</th>
<th>Approved facial recognition systems are an additional tool for venues to employ that complements their existing business practices and requirements. Approved system providers are responsible for the installation of the facial recognition system in the licensed gaming venue and must ensure the system is installed in the premises meets the following installation requirements.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>‘A device or devices installed or utilised by the system to capture the facial image of a person entering or who has entered the gaming area must be located on the licensed premises / casino premises:</td>
</tr>
<tr>
<td></td>
<td>in such a manner which affords the best opportunity for the facial image of each person entering or who has entered the gaming area to be captured; and</td>
</tr>
<tr>
<td></td>
<td>be positioned to allow for changes in external and internal lighting conditions or where poor lighting conditions are generally present’.</td>
</tr>
</tbody>
</table>

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138 SQLServer2016 Enterprise Edition SP2
For systems installed in the casino, approved providers must also ensure the installation is undertaken by a special employee or someone under the supervision of a special employee.141

Under the Casino Act 1997, a special employee means a person employed or appointed by the licensee to carry out any of the following duties in respect of operations under the casino licence:

- (a) conducting authorised games
- (b) handling, dealing with and accounting for money or gambling chips in the casino premises
- (c) exchanging money or chips for casino patrons
- (d) security and surveillance of the casino premises
- (e) operating, maintaining, constructing or repairing equipment for gambling
- (f) duties relating to intervention programs for patrons adversely affected by, or at risk of harm from, gambling
- (g) duties relating to the operation and conduct of gambling in premium gaming areas, including premium player attraction programs
- (h) accounting
- (i) supervising the carrying out of the duties in paragraphs (a) to (h)
- (j) any other duties related to the operations under the casino licence specified by the Commissioner for the purposes of this definition and notified to the licensee.

### Outcome 3: Evidence of effectiveness

<table>
<thead>
<tr>
<th>What research outcomes exist that the technology is effective:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• From an operational perspective</td>
</tr>
<tr>
<td>• In minimising gambling harm</td>
</tr>
</tbody>
</table>

### Outcome 4: Evidence of weaknesses/impacts

| Have any weaknesses of the technology been identified, and what evidence exists of the extent of these weaknesses? | Research did not identify information to address this issue |

<table>
<thead>
<tr>
<th>Have any adverse impacts on recreational gamblers been identified? What evidence exists on the extent of these impacts?</th>
<th>Research did not identify information to address this issue</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 5: Implications or potential traps</strong></td>
<td>The critical implementation issue facing CBS was how venue staff dealt with potentially barred persons who may or may not have entered the gaming area. The issue was resolved by the Commissioner issuing new gaming machine licence conditions which:</td>
</tr>
<tr>
<td>What are the critical implementation issues or concerns?</td>
<td>• Outlined a procedure detailing the in-venue management of suspected barred person.</td>
</tr>
<tr>
<td></td>
<td>• Requiring venues ensure devices that receive BOEN notifications are not visible to the general public.</td>
</tr>
<tr>
<td><strong>Outcome 6: Potential costs</strong></td>
<td>The critical implementation issue facing CBS was how venue staff dealt with potentially barred persons who may or may not have entered the gaming area. The issue was resolved by the Commissioner issuing new gaming machine licence conditions which:</td>
</tr>
<tr>
<td>What are the implementation costs for the technology:</td>
<td>• Outlined a procedure detailing the in-venue management of suspected barred person.</td>
</tr>
<tr>
<td></td>
<td>• Requiring venues ensure devices that receive BOEN notifications are not visible to the general public.</td>
</tr>
<tr>
<td>• Capital costs</td>
<td>Research did not identify information to address this issue</td>
</tr>
<tr>
<td></td>
<td>Research did not identify information to address this issue</td>
</tr>
<tr>
<td>• Training costs</td>
<td>Research did not identify information to address this issue</td>
</tr>
</tbody>
</table>

**Japan**

Table 9: Facial recognition technology used in relation to Japanese EGMs

<table>
<thead>
<tr>
<th>Research question</th>
<th>Facial Recognition Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 1: Jurisdictional scan</strong></td>
<td>There were 2.43 million pachinko gaming machines in Japan in 2020. Currently, casinos do not operate in Japan. The Japan Casino Regulatory Commission, that oversees the regulation of gambling in Japan, is working</td>
</tr>
<tr>
<td>What technology options are available?</td>
<td>There were 2.43 million pachinko gaming machines in Japan in 2020. Currently, casinos do not operate in Japan. The Japan Casino Regulatory Commission, that oversees the regulation of gambling in Japan, is working</td>
</tr>
</tbody>
</table>

---

142 Consumer and Business Services South Australia, Gambling reform update, p 1. Accessed 14 January 2022
143 Ibid, p 2
144 Ibid, p 2
145 Alexandru Arba, Number of pachinko gaming machines in Japan from 2011 to 2020, Statista website. Accessed 27 January 2022
towards the operation of new Integrated Resorts (including Casinos) in Japan. As such, any implementation of facial recognition technologies in Casinos is proposed and may proceed only if Casinos are established.

Melco Resorts Japan did indicate in 2018 that it intended to use MelGuard facial recognition technology.

Desktop research was not able to identify the range of available facial recognition technologies planned across gambling venues in Japan.

<table>
<thead>
<tr>
<th>What are the technology’s broad parameters / components?</th>
<th>The MelGuard system involves venue attendees being issued with membership cards. Upon arrival at the venue, the system verifies the individual electronically using fingerprints and facial recognition technology. Once verification is confirmed, the person is permitted to enter the venue.</th>
</tr>
</thead>
</table>

**Outcome 2: Where and how**

<table>
<thead>
<tr>
<th>What is the regulatory framework that applies?</th>
<th>The Japan Casino Regulatory Commission oversees the regulation of casinos and other gambling venues in Japan. <em>Basic Act on Countermeasures for Gambling Addiction</em> was enacted in 2018. It requires that a list of issues be examined in relation to gambling activity, including the restriction of betting by problem gamblers. This Act covers ‘straightforward’ gambling and pachinko. The Japanese Government has proposed the installation of facial recognition systems at pachinko parlours (similar to gaming machine venues), boat and horseracing venues to minimise gambling harm. Conceptually, under the Government’s proposals, the FRT will be introduced to aid in barring excluded patrons and minors (persons under 20) ‘make it possible to refuse entry of verified gambling addicts and minors (under the age of 20).’</th>
</tr>
</thead>
</table>

| What business practices/requirements are in place? | While not yet implemented, a biometrics-based casino security solution system proposed to be introduced by Melco Resorts Japan is envisaged to include a national database of excluded individuals, shared amongst licensed casino operators in the country. |

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146 Shintaro Kamimura, Japan Casino Regulatory Commission provides new details on regulatory approach., Accessed 16 February 2022


148 Ibid.

149 Summary of Basic Act on Countermeasures for Gambling Addiction, Anderson Mori & Tomotsune website. Accessed 21 January 2022


151 Summary of Basic Act on Countermeasures for Gambling Addiction, Anderson Mori & Tomotsune website. Accessed 21 January 2022

152 Nathan Joyes, Japan wants facial recognition at gambling establishments, Gambling Insider website. Accessed 20 January 2022

153 Gov’t plans to use facial recognition system to help prevent gambling addiction, Japan Today website. Accessed 26 January 2022

154 Ibid.

In 2019, the introduction of the system was summarised as follows:

‘The proposition is aimed at keeping verified problem gamblers and underaged people (less than 20 years old) out of gaming venues, by storing images of their faces in the system by their own request or their families’. Furthermore, they have suggested to remove ATM machines from pachinko parlours.

The intended measure will be turned to the public in order to get their feedback before March 27. Should they support the proposal, the government plans to create a properly finalised policy for the nation’s public gambling facilities before May and set the infrastructure by 2021.

The Japan Casino Regulatory Commission published a set of draft casino regulations, part of which included entry regulation:

‘Entry for Japanese citizens and foreign citizens living in Japan will require presentation of a My Number Card, while foreign visitors will be required to present a passport. This will allow casinos to identify those who are barred from entry. Regarding surveillance via patrol and surveillance cameras, the regulations stipulate operators must “make efforts to install the latest technology”, suggesting facial-recognition systems will be commonplace’.

Outcome 3: Evidence of effectiveness

<table>
<thead>
<tr>
<th>What research outcomes exist that the technology is effective:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• From an operational perspective</td>
</tr>
<tr>
<td>Research did not identify information to address this issue</td>
</tr>
<tr>
<td>• In minimising gambling harm</td>
</tr>
<tr>
<td>Research did not identify information to address this issue</td>
</tr>
</tbody>
</table>

Outcome 4: Evidence of weaknesses/impacts

<table>
<thead>
<tr>
<th>Have any weaknesses of the technology been identified, and what evidence exists of the extent of these weaknesses?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research did not identify information to address this issue</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Have any adverse impacts on recreational gamblers been identified? What evidence exists on</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research did not identify information to address this issue</td>
</tr>
</tbody>
</table>

156 Japan to set facial recognition systems in gaming venues, Focus Gaming News website. Accessed 24 January 2022

the extent of these impacts?

Outcome 5: Implications or potential traps

What are the critical implementation issues or concerns?

Research did not identify information to address this issue

Outcome 6: Potential costs

What are the implementation costs for the technology:

- Capital costs
  Research did not identify information to address this issue
- Operational costs
  Research did not identify information to address this issue
- Training costs
  Research did not identify information to address this issue

Macau

Table 10: Facial recognition technology used in relation to Macau EGMs

<table>
<thead>
<tr>
<th>Research question</th>
<th>Facial Recognition Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome 1: Jurisdictional scan</td>
<td></td>
</tr>
<tr>
<td>What technology options are available?</td>
<td>There were 8,906 slot machines in Macau casinos in 2020.</td>
</tr>
<tr>
<td></td>
<td>It appears that two or three casinos in Macau were testing the operation of facial recognition technology in 2019. However, it is not clear what technologies were being used.</td>
</tr>
<tr>
<td>What are the technology's broad parameters / components?</td>
<td>Research did not identify information to address this issue</td>
</tr>
<tr>
<td>Outcome 2: Where and how</td>
<td></td>
</tr>
</tbody>
</table>

158 Lai Lin Thomala, Number of slot machines in casinos in Macao from 2010 to 2020, Statista website. Accessed 27 January 2022
159 Newsdesk, Half of Macau casino ops testing face recognition tech, GGR Asia website. Accessed 27 January 2022
| What is the regulatory framework that applies? | The Directorate for Gaming Inspection and Coordination in the Macau Special Administrative Region is responsible for gambling policy, the implementation of its policy, as well as the regulation, supervision and coordination of the operation [of] gaming activities.  

It was reported in 2019 that Macau's casino operators may be required to upgrade their in-house surveillance technology to include facial recognition, and that this requirement may be included in gaming law for Macau. |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>What business practices/requirements are in place?</td>
<td>Research did not identify information to address this issue</td>
</tr>
</tbody>
</table>

Outcome 3: Evidence of effectiveness

<table>
<thead>
<tr>
<th>What research outcomes exist that the technology is effective:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• From an operational perspective</td>
<td>Research did not identify information to address this issue</td>
</tr>
<tr>
<td>• In minimising gambling harm</td>
<td>Research did not identify information to address this issue</td>
</tr>
</tbody>
</table>

Outcome 4: Evidence of weaknesses/impacts

| Have any weaknesses of the technology been identified, and what evidence exists of the extent of these weaknesses? | Research did not identify information to address this issue |
| Have any adverse impacts on recreational gamblers been identified? What evidence exists on the extent of these impacts? | Research did not identify information to address this issue |

Outcome 5: Implications or potential traps

| What are the critical implementation issues or concerns? | Research did not identify information to address this issue |

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161 [Newsdesk](https://www.ggrasia.com/), Face recognition mulled for Macau casino ops; police, GGR Asia website. Accessed 27 January 2022
Outcome 6: Potential costs

What are the implementation costs for the technology:

- Capital costs: Research did not identify information to address this issue
- Operational costs: Research did not identify information to address this issue
- Training costs: Research did not identify information to address this issue

New Zealand

Table 11: Facial recognition technology used in relation to New Zealand EGMs

<table>
<thead>
<tr>
<th>Research question</th>
<th>Facial Recognition Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>What technology options are available?</td>
<td>As at September 2021, 14,704 EGMs were operated in New Zealand. (^{162}) <em>Prima facie</em>, there are two FRT systems that have been deployed in New Zealand, The Guardian and The Guardian Edge. These systems were developed by a partnership between Torutek Limited and COMS Systems Limited. Development and implementation of this system are industry led rather than being government mandated. (^{163}) According to Paul Andrew, COMS Systems director, the system is ‘…an additional measure on top of the industry’s already stringent harm minimisation measures.’ (^{164})</td>
</tr>
<tr>
<td>What are the technology’s broad parameters / components?</td>
<td>The Guardian and the Edge variant are essentially the same system sold at two different price points and have different installation, equipment and features. Broadly, The Guardian and Guardian Edge are FRT systems that compare images extracted from a live video feed and compared (using their cloud-based comparison system) to those on the database of excluded problem gamblers (CONCERN). (^{165}) CONCERN is administered by the Ministry of Health. (^{166})</td>
</tr>
</tbody>
</table>

Outcome 2: Where and how

\(^{162}\) [GMP Quarterly Dashboard September 2021](Data.govt.nz website). Accessed 27 January 2022


\(^{164}\) Ibid.


\(^{166}\) [Multi-Venue Exclusion (MVE)](National MVE Administrator website). Accessed 27 January 2022
| What is the regulatory framework that applies? | Facial recognition technology can be used in New Zealand without the approval of the Secretary of the Department of Internal Affairs (the Department). Gaming machine operators are required to ensure that its costs are ‘actual, reasonable and necessary’ under the *Gambling Act 2003*. Consequently, the Department assesses whether the costs of installing FRT in venues is commensurate with the benefits obtained by using it. The FRTs in operation in New Zealand alert staff to the presence of problem gamblers by screening persons entering the gaming area. Therefore, FRT reduces the burden on venue staff to identify and check for excluded patrons.\(^\text{167}\) Accordingly, FRT augments the existing barring requirements outlined in Part 4, subpart 2 of the *Gaming Act 2003*. |
| What business practices / requirements are in place? | There are no regulatory requirements relating to the use of FRT in gambling venues. Venues need to operate the facial recognition system in accordance with the operator’s manual.\(^\text{168}\) |

### Outcome 3: Evidence of effectiveness

**What research outcomes exist that the technology is effective:**

- **From an operational perspective**
  
  According to SkyCity Chief Operating Officer, Michael Ahearne, The Guardian systems installed have been working ‘really well’ and that the number of false positives ‘…have been quite low.’\(^\text{169}\)

- **In minimising gambling harm**
  
  According to the Chief Executive of Christchurch Casino, Brett Anderson, ‘*we have been looking at [an] 88 percent success rate over a recent two-month period*’\(^\text{170}\) in relation to the facial recognition system used to detect voluntarily excluded persons.

  It has been reported that facial recognition technology has been successfully trialled at several gaming venues in New Zealand.\(^\text{171}\)

  No evidence was identified.

### Outcome 4: Evidence of weaknesses/impacts

**Have any weaknesses of the technology been identified, and what evidence exists of:**

Research did not identify information to address this issue

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\(^{167}\) Gaming Machine Association of New Zealand, op. cit.


\(^{170}\) Ibid.

the extent of these weaknesses? & Research did not identify information to address this issue

<table>
<thead>
<tr>
<th>Have any adverse impacts on recreational gamblers been identified? What evidence exists on the extent of these impacts?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research did not identify information to address this issue</td>
</tr>
</tbody>
</table>

### Outcome 5: Implications or potential traps

**What are the critical implementation issues or concerns?**

The critical implementation issue for the FRT system is the cost of purchasing, installing and operating the system, particularly for venues operating a small number of EGMs.172 173

A salient consideration from a regulatory perspective is that there appears to be no governmental oversight of the operation of the system.

### Outcome 6: Potential costs

**What are the implementation costs for the technology:**

- **Capital costs**
  - The cost for venues to install a Guardian system depends on the number of cameras and the type of system chosen. The initial hardware costs for:
    - The Guardian system comprises:
      - 2 to 6 camera systems cost between $NZ17,918.28 to $NZ31,278.48.174
    - The Guardian Edge system comprises:
      - 1 to 6 camera systems cost between $NZ10,545.00 and $NZ19,170.00.175
  - These prices do not include costs for optional upgrades, installation or pre-wiring requirements.

- **Operational costs**
  - The operational costs of running a Guardian system vary. The monthly fee for:
    - The Guardian system comprises:

---

<table>
<thead>
<tr>
<th>Research question</th>
<th>Facial Recognition Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 1: Jurisdictional scan</strong></td>
<td></td>
</tr>
<tr>
<td>What technology options are available?</td>
<td>Between April and September 2020, there was an average of 116,333 gaming machines operated in Great Britain. The number in Northern Ireland could not be determined. Facial recognition providers known to have worked in the UK gambling industry include:</td>
</tr>
<tr>
<td></td>
<td>- the Face Recognition Company (FRC)</td>
</tr>
<tr>
<td></td>
<td>- NEC Pty Ltd.</td>
</tr>
<tr>
<td>What are the technology’s broad parameters / components?</td>
<td>Broadly, the parameters of the FRT being used in the UK is similar to those found in other jurisdictions. For example, the FRT system offered by FRC comprises a smart camera which records video for AI facial analysis to be undertaken by their system. The system compares the face against a watchlist of face signatures and if a match is found an alert is sent to the user via their phone app.</td>
</tr>
</tbody>
</table>

| **Outcome 2: Where and how** | |
| What is the regulatory framework that applies? | The Gambling Commission is responsible for regulating gambling in Great Britain and administers the *Gambling Act 2005* and other supporting legislation. It is unclear if facial recognition technology is regulated within the UK gambling legislation framework. Notably, "The regulatory regime governing

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178 S. Lock, *Average number of gaming machines across all gambling sectors in Great Britain from April 2010 to September 2020*, Statista website. Accessed 20 January 2022
the use of FRT in the private sector is less extensive than the one for law enforcement agencies.\textsuperscript{183}

It appears that the licensing conditions may be the basis for regulation regarding the use of FRT in casinos.\textsuperscript{184}

The Department for Communities regulates gambling in Northern Ireland.\textsuperscript{185}

However, the situation in Northern Ireland is likely to be of limited relevance as ‘In Northern Ireland gambling (other than the National Lottery) is regulated under the Betting, Gaming, Lotteries & Amusements (NI) Order 1985. The legislation is old and complex and has not kept pace with emerging technologies and other changes.’\textsuperscript{186}

| What business practices/requirements are in place? | Gaming machine operators, like Hippodrome Casino\textsuperscript{187}, and their system providers that store biometric data must meet the privacy requirements for biometric data as outlined in the General Data Protection Regulation (GDPR) EU law.\textsuperscript{188} FRT systems in casinos in the UK are used in conjunction with the Self Enrolment National Self Exclusion (SENSE) scheme and the internal exclusion scheme of the casino to help venue staff exclude excluded persons.\textsuperscript{189} SENSE is a voluntary, national exclusion scheme operated by the Betting and Gaming Council (BGC) that allows patrons to be excluded from specific venues or all venues.\textsuperscript{190} |

<table>
<thead>
<tr>
<th>Outcome 3: Evidence of effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>What research outcomes exist that the technology is effective:</td>
</tr>
<tr>
<td>• From an operational perspective</td>
</tr>
<tr>
<td>• In minimising gambling harm</td>
</tr>
</tbody>
</table>


\textsuperscript{184} \textit{Facial Recognition Policy}, Hippodrome Casino London website. Accessed 20 January 2022

\textsuperscript{185} \textit{Betting, gaming, lotteries and amusements}, Department for Communities (Northern Ireland) website. Accessed 25 January 2022

\textsuperscript{186} Ibid.

\textsuperscript{187} Ibid.

\textsuperscript{188} Article 6 of the \textit{General Data Protection Regulation (EU)}. Accessed 20 January 2022

\textsuperscript{189} \textit{Facial Recognition Policy}, Hippodrome Casino London website. Accessed 20 January 2022

\textsuperscript{190} \textit{Self-exclusion}, Gambling Commission (Great Britain) website. Accessed 20 January 2022
### Outcome 4: Evidence of weaknesses/impacts

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have any weaknesses of the technology been identified, and what evidence exists of the extent of these weaknesses?</td>
<td>Research did not identify information to address this issue</td>
</tr>
<tr>
<td>Have any adverse impacts on recreational gamblers been identified? What evidence exists on the extent of these impacts?</td>
<td>Research did not identify information to address this issue</td>
</tr>
</tbody>
</table>

### Outcome 5: Implications or potential traps

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the critical implementation issues or concerns?</td>
<td>The perception of how the FRT systems operate is a critical issue to manage. Concerns have been raised in the UK regarding:</td>
</tr>
<tr>
<td></td>
<td>- The use and legality of using facial recognition in popular spaces such as shopping centres, museums and conference centres.191 192</td>
</tr>
<tr>
<td></td>
<td>- The use of FRT ‘…often without warning visitors’.193</td>
</tr>
<tr>
<td></td>
<td>- Police trials using facial recognition in a shopping centre which ‘…could have scanned more than 2 million faces’.194 195</td>
</tr>
<tr>
<td></td>
<td>There is support for the FRT within the gambling industry which see benefits for196:</td>
</tr>
<tr>
<td></td>
<td>- improving security                                                                ächter</td>
</tr>
<tr>
<td></td>
<td>- identifying minors</td>
</tr>
<tr>
<td></td>
<td>- preventing fraud</td>
</tr>
<tr>
<td></td>
<td>- preventing barred players from entering gambling premises.197</td>
</tr>
<tr>
<td></td>
<td>Moreover, the concerns may be overstated. According to Kosta, Steinacker and Meckel, notions of convenience and improved security are foremost concerns for Chinese, Germans, British and Americans – not surveillance and control. In fact, <em>based on an online survey resembling the Internet</em>-</td>
</tr>
</tbody>
</table>

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193 Damien Gayle, op. cit.
194 Ibid.
195 Ed Riley, op. cit.
196 Improving security, identifying minors and preventing fraud were not specifically investigated in this report.
connected population the study shows high levels of approval for FRT across all four countries.\textsuperscript{198}

<table>
<thead>
<tr>
<th>Outcome 6: Potential costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the implementation costs for the technology:</td>
</tr>
<tr>
<td>- Capital costs</td>
</tr>
<tr>
<td>- Operational costs</td>
</tr>
<tr>
<td>- Training costs</td>
</tr>
</tbody>
</table>

Pricing for FRT systems varies depending on the scope of the system and the systems provider.\textsuperscript{199}


\textsuperscript{199} Pricing, The Face Recognition Company website. Accessed 20 January 2022
Player card gaming

Global scan

Table 13: Global scan of player card gaming

<table>
<thead>
<tr>
<th>Research question</th>
<th>Player card gaming</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the technology options available?</td>
<td>Research indicates that player card gaming (PCG) systems generally involve three main components.</td>
</tr>
<tr>
<td></td>
<td>- Patron identification:</td>
</tr>
<tr>
<td></td>
<td>- Meaning a patron must register their details to access the card.</td>
</tr>
<tr>
<td></td>
<td>- It can include identification of excluded persons.</td>
</tr>
<tr>
<td></td>
<td>- Cashless gaming:</td>
</tr>
<tr>
<td></td>
<td>- Meaning a cashless payment method that can interface with the card.</td>
</tr>
<tr>
<td></td>
<td>- Includes ticket-in ticket-out (TITO) systems, card based cashless systems, account based systems and mobile / digital wallets.</td>
</tr>
<tr>
<td></td>
<td>- Pre-commitment tools:</td>
</tr>
<tr>
<td></td>
<td>- Meaning features such as time and expenditure limits, tracking gambling activity and prompting breaks in play.</td>
</tr>
<tr>
<td></td>
<td>PCG systems can have one or more of these components. However, only those systems that have all three components would meet the expectations of the State Government given the nature of their reference to the Commission.</td>
</tr>
<tr>
<td></td>
<td>Based on research, it is understood that cashless gaming is not considered to have any innate harm minimisation features as it is simply an alternative payment method to cash. To illustrate:</td>
</tr>
<tr>
<td></td>
<td>- TITO systems essentially replace cash for loading credit into EGMs and receiving winnings</td>
</tr>
<tr>
<td></td>
<td>- Card based cashless systems can be charged with cash or charged virtually through an online account / wallet and receive winnings on the card.</td>
</tr>
<tr>
<td></td>
<td>- Digital / mobile wallets allow the user to transfer and withdraw money using a linked card or account.</td>
</tr>
<tr>
<td></td>
<td>Furthermore, PCG systems can be anonymous or registered to an identified person.</td>
</tr>
<tr>
<td></td>
<td>PCG systems have been trialled and used in Australia, Canada (Nova Scotia), Norway, Sweden and other countries internationally.</td>
</tr>
<tr>
<td></td>
<td>Examples of the types of player card gaming currently in use include:</td>
</tr>
</tbody>
</table>

- The PCG system planned to be trialled in Newcastle, NSW that ‘…is linked to identity [and] a bank account with harm minimisation settings.’

- The IGT ADVANTAGE™ system being used in Nevada, USA.
  - This system is digital wallet based and must be able to identify the patron and allow them to set transfer limits.

- The account-based cashless gaming system used at SkyCity Adelaide Casino in conjunction with the SkyCity Rewards Card.
  - The account based cashless gaming system has some pre-commitment tools and may identify patrons and works alongside the South Australian voluntary pre-commitment system that is mandatory to allow patrons to use.

The research identified that there are a range of client risk management systems used in conjunction with player card gaming. These systems assist in identifying problematic patron gambling behaviour.

For example, South Australia has an Automated Risk Monitoring System (ARMS) that monitors gambling activity on gaming machines to detect potentially harmful gambling activity. It is understood that ARMS ‘…is intended to serve as an “early intervention” tool for detecting “at-risk” and problematic behaviour.’

What are the broad parameters/components of each option?

The main components of PCG systems are outlined in the discussion of the conceptual model above.

It was observed that:

- Player card gaming systems can be used to play on EGMs (or jurisdictional equivalents), automated table games and wagering in addition to table games.

- Not all examples of PCG systems reviewed use all three components outlined in the conceptual model. For example:
  - the My-Play pre-commitment system used in Nova Scotia did not have a cashless gaming component.
  - the Victorian YourPlay pre-commitment system only assesses the gambling activity of a patron on a gaming machine and does not take into account the payment method used to play.

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202 Ibid.

203 Newsdesk, IGT receives full Nevada regulatory approval for cashless gaming solution, Inside Asian Gaming website. Accessed 26 January 2022


206 Cashless Gaming, GlobalPayments website. Accessed 26 January 2022

207 Cash Top Up FAQ, Sportsbet website. Accessed 26 January 2022


Regulators differ in their approach to the mandatory / voluntary nature of the use of PCG in gaming. For example:

- Using the PCG is mandatory to gamble on EGM equivalents in Nova Scotia, Norway and Sweden.
- Whereas patrons in the other jurisdictions can choose to use the PCG system.

All jurisdictions’ PCG systems have the potential to identify patrons, but some jurisdictions, such as VIC, SA, Qld and Nova Scotia, have anonymous options for players to use.

PCG systems allow for payment methods independent of the PCG system, such as TITO in SA and VIC.

- In other words, the mechanism used to pay is not always the same as the mechanism used to access pre-commitment.

EGMs use communications protocols to communicate usage data to a monitoring system. Communication protocols can be mandated by regulators and accordingly that affects the type and thus features of EGMs used.

Gaming machine protocols in use include:

- X-standard (used in NSW)\(^{210}\)
- QCOM (used in Qld, SA, TAS, NT and in VIC gaming venues)\(^{211}\)
- ASP (used in VIC Melbourne casino)
- IGT SAS protocol (widely used internationally)\(^{212}\)

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**Jurisdictional Analysis**

**New South Wales**

Table 14: Player card gaming used in relation to New South Wales EGMs

<table>
<thead>
<tr>
<th>Research question</th>
<th>Player card gaming</th>
</tr>
</thead>
</table>
| Outcome 1: Jurisdictional scan            | For context, there are approximately 96,000 gaming machines in NSW in 2021.\(^{213}\)  
Cashless gaming technologies in the form of PCG systems have been used in NSW for many years.  
It is understood that the PCG systems used in NSW are available from Aristocrat Technologies Australia Pty Ltd\(^ {214}\), International Game Technology. |

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\(^{213}\) Alexandra Smith, *NSW cabinet to consider an extra 100 pokies for Star casino*, The Sydney Morning Herald website. Accessed 27 January 2022

\(^{214}\) Technology Platforms, Aristocrat Gaming website. Accessed 7 February 2022
Technologies (Australia) Pty Ltd\textsuperscript{215}, MAX (Tabcorp Holdings Limited)\textsuperscript{216} and Utopia Gaming Systems.\textsuperscript{217}

Importantly, the card based gaming systems are a replacement for putting cash into an EGM and do not have harm minimisation features attached.

Accordingly, the focus of research has been on the planned trial of a PCG system comprising digital wallet based payment technology and harm minimisation features.

Gambling using non-card based cashless systems (i.e. an online wallet) is not legal under NSW legislation but there is a mechanism that allows Liquor & Gaming NSW to undertake trials for technologies that would normally be illegal.

The PCG system to be used in the planned trial can be used to play EGMs as well as paying for all club services, such as meals and membership.\textsuperscript{218}

<table>
<thead>
<tr>
<th>What are the technology’s broad parameters / components?</th>
<th>The PCG system used in the planned trial will involve a digital wallet that ‘...is linked to identity, a bank account and with harm minimisation settings.’\textsuperscript{219}</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The harm minimisation parameters available to the user include:</td>
</tr>
<tr>
<td></td>
<td>• money limits</td>
</tr>
<tr>
<td></td>
<td>• session time limits</td>
</tr>
<tr>
<td></td>
<td>• information and real-time messaging to patrons and gambling marshals</td>
</tr>
<tr>
<td></td>
<td>● exclude themselves from the club.\textsuperscript{220}</td>
</tr>
</tbody>
</table>

### Outcome 2: Where and how

<table>
<thead>
<tr>
<th>What is the regulatory framework that applies?</th>
<th>Gambling in NSW is regulated by the Department of Customer Service through Liquor &amp; Gaming NSW. The key pieces of legislation comprise:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Gaming Machines Act 2001</td>
</tr>
<tr>
<td></td>
<td>• Gaming Machines Regulation 2019</td>
</tr>
<tr>
<td></td>
<td>• Casino Control Act 1992</td>
</tr>
<tr>
<td></td>
<td>• Casino Control Regulations 2019.</td>
</tr>
<tr>
<td></td>
<td>The relevant sections of the legislation regarding the approval of subsidiary equipment for the trial is section 64 of the <em>Gaming Machines Act</em>.</td>
</tr>
<tr>
<td></td>
<td>The trial itself will comprise:</td>
</tr>
<tr>
<td></td>
<td>• installation and testing of the system at the club</td>
</tr>
<tr>
<td></td>
<td>• the live trial.\textsuperscript{221}</td>
</tr>
</tbody>
</table>

\textsuperscript{215} IGT Advantage Club®, IGT Australia website. Accessed 7 February 2022

\textsuperscript{216} Integrated systems, MAX website. Accessed 7 February 2022

\textsuperscript{217} Global Gaming System (NSW), Utopia Gaming Systems website. Accessed 7 February 2022


\textsuperscript{220} Ibid.

\textsuperscript{221} Ibid.
An evaluator (an independent academic researcher) will have access to this data and will provide evaluation of the outcomes of trial to Liquor & Gaming NSW.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What business practices/requirements are in place?</td>
<td>Research did not identify information to address this issue</td>
</tr>
<tr>
<td><strong>Outcome 3: Evidence of effectiveness</strong></td>
<td></td>
</tr>
<tr>
<td>What research outcomes exist that the technology is effective:</td>
<td></td>
</tr>
<tr>
<td>- From an operational perspective</td>
<td>The planned trial has not yet commenced and accordingly, no evidence has been published regarding its effectiveness from an operational perspective or in minimising harm caused by gambling.</td>
</tr>
<tr>
<td>- In minimising harm caused by gambling</td>
<td></td>
</tr>
<tr>
<td><strong>Outcome 4: Evidence of weaknesses/impacts</strong></td>
<td></td>
</tr>
<tr>
<td>Have any weaknesses of the technology been identified, and what evidence exists of the extent of these weaknesses?</td>
<td>The planned trial has not yet commenced and accordingly, no evidence has been published regarding any weaknesses and adverse impacts on recreational gamblers.</td>
</tr>
<tr>
<td>Have any adverse impacts on recreational gamblers been identified? What evidence exists on the extent of these impacts?</td>
<td></td>
</tr>
<tr>
<td><strong>Outcome 5: Implications or potential traps</strong></td>
<td></td>
</tr>
<tr>
<td>What are the critical implementation issues or concerns?</td>
<td>Research did not identify information to address this issue</td>
</tr>
<tr>
<td><strong>Outcome 6: Potential costs</strong></td>
<td></td>
</tr>
<tr>
<td>What are the implementation</td>
<td></td>
</tr>
</tbody>
</table>

---

222 Ibid.
### Queensland

Table 15: Player card gaming used in relation to Queensland EGMs

<table>
<thead>
<tr>
<th>Research question</th>
<th>Player card gaming</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 1: Jurisdictional scan</strong></td>
<td></td>
</tr>
</tbody>
</table>
| What technology options are available? | As at January 2022, there were 40,380 operational EGMs used in 1068 operational sites (hotels and clubs).  
The Queensland Government has introduced a legislative framework allowing for the use of the following types of cashless gaming:  
- card-based gaming systems (CBGS)  
- ticket-in ticket-out (TITO).  
Notably, CBGS have harm minimisation features. Therefore, for the purposes of this report, CBGS is considered a PCG system.  
The high-level components of PCG in QLD are outlined in Table 16. |

Table 16: QLD player card gaming

<table>
<thead>
<tr>
<th>Patron identification</th>
<th>Cashless gaming</th>
<th>Pre-commitment tools</th>
</tr>
</thead>
</table>
| • Optional, patrons can be registered or anonymous  
• CBGS cards must not be registered or issued to excluded persons | • Player account within CBGS | • Time and expenditure limits  
• Maximum balance and transfer limits  
- Default amounts for the above limits  
• Activity statements |

Notably, TITO is only a cashless gaming payment method that mimics cash and does not include specific harm minimisation tools beyond those of cash.

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whereas CBGS does. Therefore, TITO has not been considered to be a component of PCG.

Prior to the legislative changes there were two cashless trials undertaken at the Sandgate and Redcliffe RSL Clubs.\textsuperscript{225}

Notably, ‘Card-based gaming in Queensland must only be offered in clubs and hotels via the club’s or hotel’s licensed monitoring operator (LMO) as defined in the Gaming Machine Act and in casinos by the casino operator. This does not prevent LMOs or casino operators from obtaining a CBGS from a third party.’\textsuperscript{226}

<table>
<thead>
<tr>
<th>What are the technology’s broad parameters / components?</th>
<th>Card-Based Gaming System</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Broadly, ‘A CBGS is any system that facilitates the electronic transfer of credits to and from a player account for the purposes of gambling via a player, member, loyalty or other type of card.’\textsuperscript{227}</td>
</tr>
<tr>
<td></td>
<td>CBGS can be anonymous or registered accounts. Both account types have similar limits.\textsuperscript{228}</td>
</tr>
<tr>
<td></td>
<td>Authorised systems must meet the requirements outlined in Card-Based Gaming Minimum Technical Requirements.</td>
</tr>
<tr>
<td></td>
<td>Notably, pre-commitment was mandatory for operators to provide and patrons to use under previous versions of the card-based gaming minimum technical requirements in force between 2005 until 2013.</td>
</tr>
<tr>
<td></td>
<td>The minimum technical requirements for CBGS comprises:</td>
</tr>
<tr>
<td></td>
<td>• System requirements:</td>
</tr>
<tr>
<td></td>
<td>- including limits for CBGS, pre-commitment default values and exclusion.\textsuperscript{229}</td>
</tr>
<tr>
<td></td>
<td>• Hardware:</td>
</tr>
<tr>
<td></td>
<td>- including card reader and encryption requirements.\textsuperscript{230}</td>
</tr>
<tr>
<td></td>
<td>• CBGS host requirements:</td>
</tr>
<tr>
<td></td>
<td>- including system documentation, reporting capabilities and system backup.\textsuperscript{231}</td>
</tr>
<tr>
<td></td>
<td>• Data recovery.\textsuperscript{232}</td>
</tr>
</tbody>
</table>

\textsuperscript{225} Office of Regulatory Policy, Queensland Card-based Gaming Trials, p 6-7. Accessed 21 January 2022
\textsuperscript{228} Office of Liquor and Gaming Regulation, Card-Based Gaming Minimum Technical Requirements, p 4. Accessed 21 January 2022
\textsuperscript{230} Ibid., p3, 11
\textsuperscript{231} Ibid., p3, 12-13
\textsuperscript{232} Ibid., p3, 14
### Ticket-in Ticket-out

Broadly, a TITO system is any system that:

- ‘accepts and verifies tickets with a ticket-in reader. Banknote readers frequently double as ticket readers.’

- ‘prints tickets in the appropriate format as specified in this document for credits that can be redeemed at cashiers or be inserted back into a TI system.’

The minimum requirements for TITO systems in Queensland are outlined in *Ticket-in Ticket-out (TITO) Minimum Technical Requirements*.

### Outcome 2: Where and how

<table>
<thead>
<tr>
<th>What is the regulatory framework that applies?</th>
<th>The relevant legislative framework for both CBGS and TITO is made under:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Casino Control Act 1982 (the CCA)</td>
</tr>
<tr>
<td></td>
<td>• Casino Control Regulation 1999</td>
</tr>
<tr>
<td></td>
<td>• Gaming Machine Act 1991 (the GMA)</td>
</tr>
<tr>
<td></td>
<td>• Gaming Machine Regulation 2002</td>
</tr>
<tr>
<td></td>
<td>CBGS and TITO systems are evaluated and approved under the CCA and GMA for use in casinos, hotels and clubs respectively.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What business practices/requirements are in place?</th>
<th>Card-Based Gaming System</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Casinos, hotels and clubs must ensure that ‘the card may only be linked to a premises’ membership, player account and player loyalty systems if approved by Office of Liquor Gaming Regulator. Cards issued for card-based gaming must only be linked to systems approved for card-based gaming and cannot be linked to other systems such as EFTPOS.’</td>
</tr>
<tr>
<td></td>
<td>Importantly, system providers are not required to offer pre-commitment as part of a CBGS. If, however, they choose to provide pre-commitment, they must comply with the minimum technical requirements – which include default expenditure limits. Moreover, if cashless gaming is utilised in CBGS, then maximum balance and maximum transfer limits must be available. The minimum technical requirements state that if a patron enrols for pre-commitment and has not selected the default pre-commitment limits or the cashless gaming limits, the default pre-commitments will apply. Regarding patrons changing limits:</td>
</tr>
</tbody>
</table>

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234 Ibid.

235 Under section 62 of the *Casino Control Act 1982*

236 Under section 232 of the *Gaming Machine Act 1991*


238 Ibid., p 4

239 Ibid., p 4

240 Ibid., p 9
• ‘Increases to previously set player limits may only occur on request by the player and shall take effect no sooner than the next business day of the gaming provider.’

• Decreases to previously set player limits must take effect immediately on request by the player. The new limit must be implemented at the gaming venue immediately. Where the card is a multi-venue card, the decrease is to take effect within 1 hour of the initial request made by the player.’

The limits for CBGS outlined in the minimum technical requirements are outlined in Table 17 and the default values for the pre-commitment system are outlined in Table 18.

Table 17: QLD limits for CBGS

<table>
<thead>
<tr>
<th><strong>QLD CBGS Limits</strong></th>
<th><strong>Registered account default values</strong></th>
<th><strong>Anonymous account default values</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>MAXCR - The CBGS must not 'credit' the betting terminal that would cause the machine's credit meter to exceed this value</td>
<td>$199.99 (Clubs &amp; Hotels) $9999.99 (Casinos)</td>
<td>$199.99 (Clubs &amp; Hotels) $9999.99 (Casinos)</td>
</tr>
<tr>
<td>MINTRTIME - Minimum time a card is accepted in a betting terminal</td>
<td>12 Months</td>
<td>2 Days</td>
</tr>
<tr>
<td>MINTRCASHIERTIME - Default minimum expire time of a card</td>
<td>12 months</td>
<td>12 months</td>
</tr>
<tr>
<td>MAXBAL - Maximum account balance</td>
<td>$9999.99</td>
<td>$5000 (Clubs &amp; Hotels) $9999.99 (Casinos)</td>
</tr>
<tr>
<td>MAXTRF - Maximum credit value to transfer to a betting terminal (possible range: $20 to MAXCR)</td>
<td>$100</td>
<td>$100</td>
</tr>
</tbody>
</table>

Table 18: Pre-commitment default values

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241 Ibid., p 10
242 Ibid., p 10
243 ‘The venue may be able to set their own limits up to MAXBAL’. Ibid., p 16
244 Ibid., p 15
### Pre-commitment limits

<table>
<thead>
<tr>
<th>Default values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAXSPEND</strong> [Maximum spending limit]</td>
</tr>
<tr>
<td>Default of $100 with a maximum of <strong>MAXBAL</strong></td>
</tr>
<tr>
<td><strong>MAXSESS</strong> [maximum session time]</td>
</tr>
<tr>
<td>Default of unlimited (displayed in HH:MM, e.g. 00:00)</td>
</tr>
</tbody>
</table>

If pre-commitment has been implemented in a Card Based Gaming System (Cashless System) then the following limits must also be available:

<table>
<thead>
<tr>
<th>Default values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAXBAL</strong> [Maximum balance]</td>
</tr>
<tr>
<td>Maximum $9999.99 (Registered Accounts)</td>
</tr>
<tr>
<td>Maximum $2000 (Anonymous Accounts)</td>
</tr>
<tr>
<td><strong>MAXTRF</strong> [Maximum transfer limit]</td>
</tr>
<tr>
<td>Default of maximum banknote denomination that is accepted by a betting terminal, while respecting <strong>MAXCR</strong>. (i.e. possible range: $20 to <strong>MAXCR</strong>)</td>
</tr>
</tbody>
</table>

### Ticket-in Ticket-out

TITO systems must be provided by an LMO. Furthermore, compliance with requirements relating to pre-commitment systems are only required if a pre-commitment system solution exists for the operator.246

Cash redemption terminals (CRTs) and cashiers are an integral part of the system allowing patrons to have access to credit and redeem winnings.247

#### Outcome 3: Evidence of effectiveness

**What research outcomes exist that the technology is effective:**

- From an operational perspective

  A summary report, *Queensland Card-based Gaming Trials*, undertaken by the Office of Regulatory Policy, contained a number of key findings from an operational perspective from the two trials undertaken:

  - venue staff reportedly had positive experiences with the gaming, useability of the CBGS and the support from system providers
  - productivity gains were only realised by the venue achieving a critical mass of players using the CBGS
  - the operational benefits from operating a CBGS were uncertain at the Redcliffe RSL.248

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245 Ibid., p 16
247 Ibid, p 9-10
In minimising harm caused by gambling

**Trials**
From a harm minimisation perspective, there were a range of varied issues for harm minimisation arising from the trials including:

- potential to improve the written information given to players about harm minimisation to support cashless card based gaming
- people who received warnings in relation to their gambling activity reflected on their gambling spend
- people who used the pre-commitment to set limits decreased their spending on gambling
- the way information was presented on expenditure statements in the system providers system, SIMPLAY, needed improvement.

<table>
<thead>
<tr>
<th>Outcome 4: Evidence of weaknesses/impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Have any weaknesses of the technology been identified, and what evidence exists of the extent of these weaknesses?</strong></td>
</tr>
<tr>
<td>- There were small sample sizes for both trials:</td>
</tr>
<tr>
<td>- 66 players at the Sandgate RSL</td>
</tr>
<tr>
<td>- 341 players at the Redcliffe RSL.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Have any adverse impacts on recreational gamblers been identified? What evidence exists on the extent of these impacts?</th>
<th>According to the summary report, the key findings arising from the trials related to players experience included:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- the signup process was easy and straightforward for players</td>
<td>- <strong>‘players reported high levels of satisfaction with the overall functionality and usability of the systems’</strong></td>
</tr>
<tr>
<td>- ‘expenditure statements were of low interest to players at both sites, but players acknowledged the usefulness of this option’</td>
<td>- ‘time limits were less important to most players compared to monetary limits’</td>
</tr>
<tr>
<td>- most players found that:</td>
<td>- ‘CBGC encouraged them to think more about their expenditure...’</td>
</tr>
<tr>
<td>- ‘CBGC encouraged them to think more about their expenditure...’</td>
<td></td>
</tr>
</tbody>
</table>

---

250 Office of Regulatory Policy, op. cit., p 10
251 Ibid., p 10
252 Ibid., p 6
253 Ibid., p 7
254 Ibid., p 7
255 Ibid., p 6
Outcome 5: Implications or potential traps

<table>
<thead>
<tr>
<th>What are the critical implementation issues or concerns?</th>
<th>Critical implementation issues outlined in the summary report arising from the trials included:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- The convenience of using the card was a major benefit in addition to the ability to set limits. 256</td>
<td>- the uptake of PCG took 3-4 months to peak before steadying&lt;br&gt; - the use of pre-commitment limit settings by patrons was dependent on the promotion of these features by the venue&lt;br&gt; - it being vital for the system provider to give “…simple and ongoing training for staff and detailed training for players.” 257</td>
</tr>
</tbody>
</table>

Standout findings regarding critical implementation issues included:

- ‘Any future rollout of card-based gaming to additional venues should have harm minimisation promoted as the primary objective of the technology offering.’ 258
- ‘Early trials will require significant effort to encourage adoption to achieve the objectives of pre-commitment as a gambling harm minimisation measure.’ 259
- ‘Given that many players just use card-based gaming for “cashless convenience”, [the] findings…further emphasise the need for venues to actively promote harm-minimisation benefits to ensure that they are leveraged by players.’ 260
- ‘…pre-commitment systems were seen [by venue staff] to have some potential to reduce venue workloads and offer gamblers harm-minimisation benefits, though achieving those benefits would be more likely if venues opted for full cashless gaming and all gamblers used pre-commitment.’ 261

Outcome 6: Potential costs

<table>
<thead>
<tr>
<th>What are the implementation costs for the technology</th>
<th>Research did not identify information to address this issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Capital costs</td>
<td></td>
</tr>
<tr>
<td>- Operational costs</td>
<td></td>
</tr>
<tr>
<td>- Training costs</td>
<td></td>
</tr>
</tbody>
</table>

256 Ibid., p 6<br>257 Ibid., p 6<br>258 Ibid., p 6<br>259 Ibid., p 10<br>260 Ibid., p 14<br>261 Ibid., p 37
South Australia

Table 19: Player card gaming used in relation to South Australian EGMs

<table>
<thead>
<tr>
<th>Research question</th>
<th>Player card gaming</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 1: Jurisdictional scan</strong></td>
<td></td>
</tr>
<tr>
<td>What technology options are available?</td>
<td>PCG in South Australia is comprised of the voluntary pre-commitment system and cashless gaming technologies available to licensed gaming venues and the licensed casino in South Australia. Cashless gaming technologies comprise:</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gaming venues and the licensed casino are obliged to allow patrons to register with the voluntary pre-commitment system under schedule 3 / 2, respectively, of the <em>Gaming Machines Regulations 2020</em> and the <em>Casino Regulations 2013</em>.</td>
</tr>
<tr>
<td></td>
<td>The voluntary pre-commitment (VPC) system has harm minimisation tools comprising:</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The high-level components of PCG in SA are outlined in Table 20.</td>
</tr>
</tbody>
</table>

Table 20: SA player card gaming

<table>
<thead>
<tr>
<th>Patron identification</th>
<th>Cashless gaming</th>
<th>Pre-commitment tools</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Voluntary pre-commitment</strong></td>
<td></td>
<td><strong>Voluntary pre-commitment</strong></td>
</tr>
<tr>
<td>Mandatory to identify patrons</td>
<td></td>
<td>Expenditure limits</td>
</tr>
<tr>
<td>Optional to identify patrons in the casino</td>
<td></td>
<td>- With a daily default limit</td>
</tr>
<tr>
<td>Mandatory for hotels and clubs to identify patrons</td>
<td></td>
<td>Breaks in play</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No play periods</td>
</tr>
<tr>
<td></td>
<td></td>
<td>On-screen messaging</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Communicating with players about their expenditure limits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Activity statements</td>
</tr>
<tr>
<td></td>
<td><strong>ABCG</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Account based cashless gaming systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TITO</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- hotel and club TITO tickets can only be redeemed at cashiers</td>
</tr>
</tbody>
</table>
What are the technology’s broad parameters / components?

<table>
<thead>
<tr>
<th>Account Based Cashless Gaming</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABCG systems in South Australia have mandatory system attributes which broadly comprise:</td>
</tr>
<tr>
<td>- user accounts:</td>
</tr>
<tr>
<td>- patron identification and account value limits</td>
</tr>
<tr>
<td>- payment of prizes:</td>
</tr>
<tr>
<td>- prize withdrawal amounts and withdrawal methods</td>
</tr>
<tr>
<td>- account statements:</td>
</tr>
<tr>
<td>- the content and provision of player account statements</td>
</tr>
<tr>
<td>- communications:</td>
</tr>
<tr>
<td>- how the system communicates with the monitoring system</td>
</tr>
<tr>
<td>- records:</td>
</tr>
<tr>
<td>- how the system will store data. 262 263</td>
</tr>
</tbody>
</table>

**Ticket-in Ticket-out**

TITO systems broadly comprise:

- A TITO host:
  - the core back-end servers and database of the TITO system
- TITO enabled devices:
  - a device such as a gaming machine, automated table game, cash redemption terminal (CRT) or cashier terminal which is configured to issue tickets or accept tickets for redemption, or both
- TITO peripherals:
  - hardware by which a TITO enabled device conducts a TITO transaction, such as TITO ticket readers and printers and note acceptors. 264 265

Like with facial recognition technologies, the South Australian Liquor and Gambling Commissioner have published guidelines that outline the specific approval requirements for both ABCG and TITO systems. These comprise:

- [Gambling Administration Guidelines Gaming Machines Act 1992 Account Based Cashless Gaming Systems](#)
Gambling Administration Guidelines Casino Act 1997 Account Based Cashless Gaming Systems
Gambling Administration Guidelines Casino Act 1997 Ticket-in Ticket-out Systems

Similar to the situation in SA for facial recognition technology, the publication of the mandatory requirements outlined in the guidelines allows for a market-based solution to the development of these technologies by system providers.

Outcome 2: Where and how

What is the regulatory framework that applies?

The South Australian parliament passed legislation in 2019 which allowed for TITO and ABCG gaming to be used. This included:

- Section 17 of the Gambling Administration Act 2019, which allowed for the publication of gambling administration guidelines.
- Removal of the prohibition on banknote acceptors on EGMs and ATGs.

The regulatory framework in place in South Australia now comprises:

- Gambling Administration Act 2019 (the GAA)
- Gaming Machines Act 1992 (the GMA)
- Gaming Machines Regulations 2020 (the GMR)
- Casino Act 1997 (the CA)
- Casino Regulations 2013 (the CR).

Automated Risk Monitoring Service

The ARMS is operated by the LMO in relation to gaming venues and SkyCity Host Responsibility in relation to the casino and ‘monitors length of play and player activity as an indicator for identifying potential problem gambling behaviour.’

Furthermore, the ARMS ‘…is intended to serve as an “early intervention” tool for detecting “at-risk” and problematic gambling.

The ARMS is ‘…provided in connection with gaming machines operating in South Australian hotel and club gaming venues and at the licensed casino.’

The governance framework of the South Australian PCG systems is illustrated in Figure 6.

Figure 6: Player card gaming - SA governance framework

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266 Gambling Administration Guidelines, Consumer and Business Services website. Accessed 12 January 2022
268 Ibid.
269 Ibid.
What business practices/requirements are in place?

**Pre-commitment**

Further to the brief outline of pre-commitment under outcome 1, pre-commitment is required to be connected to ABCG as outlined section 7(1)(d) of the ABCG guidelines.

However, pre-commitment is not dependent on the use of ABCG. Under section 53A (1)(d) of the GMA and section 42B of the CA gaming on EGMs or, in the casino ATGs, pre-commitment cannot be provided unless the EGM or ATG ‘…is operated in connection with a pre-commitment system…’

Furthermore, hotels, clubs and the casino ‘…must not only offer pre-commitment in conjunction with a loyalty system.‘ 270 271

As pre-commitment is provided at the machine, the payment method, be it cash, TITO or account based cashless, is just the payment method. The pre-commitment system provides the harm minimisation features.

The precommitment system used must allow a patron to:

- set:
  - a daily or weekly expenditure limit
  - breaks in play periods
  - no play periods
  - a personal reminder message if they exceed their expenditure limit or do not comply with a break in play or no play period

- default expenditure limit of $100 per day, if the customer does not specify a limit. 272 273

If any variations are made to a patron’s pre-commitment:

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270 Schedule 3, clause 2 of the *Gaming Machines Regulations 2020*

271 Schedule 2, clause 2 of the *Casino Regulations 2013*

272 Schedule 3 of the *Gaming Machines Regulations 2020*

273 Schedule 2 of the *Casino Regulations 2013*
- ‘a variation must be applied as soon as practicable if the customer has not played a gaming machine or automated table game since registering

- a variation (other than a variation to increase an expenditure limit) must be applied as soon as practicable if the customer has played a gaming machine or automated table game since registering

- if the customer has played a gaming machine or automated table game since registering and the requested variation is to increase an expenditure limit, the variation must only be applied if:
  - a period of 24 hours has passed since the making of the request
  - the customer has confirmed to the licensee (in person or by any other means) that he or she still requires the making of the variation.’  

‘The pre-commitment system must comply with the following requirements:

- the system must use the registered customer’s preferred language, if available, but may use English until the data about customer preferences is analysed to identify a minimum set of common languages to be offered by the system

- the system must be capable of displaying on-screen messages on a primary screen or an ancillary screen

- the system must enable the display of a reminder message set by the licensee on the primary screen or the ancillary screen when the registered customer reaches 50%, 75% and 90% of his or her expenditure limit

- if a registered customer exceeds his or her expenditure limit, the system must enable the display of the customer’s personal reminder message (or, if the customer has not set a reminder message, a default message set by the licensee) on the primary screen or the ancillary screen

- if the registered customer continues to play after exceeding his or her expenditure limit, the system must enable a further reminder message to be displayed on the primary screen or the ancillary screen when the customer exceeds his or her expenditure limit by 10%, 20% and 50%

- the system must notify casino staff when the registered customer exceeds his or her expenditure limit or fails to comply with a break in play period or no play period; if a registered customer fails to comply with a break in play period or a no play period, the system must enable the display of the customer’s personal reminder message (or, if the customer has not set a reminder message, a default message set by the licensee) on the primary screen or the ancillary screen;

- if a reminder message is displayed on a primary screen, the system must not allow the message to be removed from the display until the registered customer acknowledges the message

- if a reminder message is displayed on an ancillary screen, the system must not allow a registered customer to continue play until the customer acknowledges the message.’  

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274 Schedule 3 of the Gaming Machines Regulations 2020
275 Schedule 2 of the Casino Regulations 2013
276 Schedule 3 of the Gaming Machines Regulations 2020
277 Schedule 2 of the Casino Regulations 2013
Account Based Cashless Gaming

ABCG is designed to be used in conjunction with the ARMS and the voluntary pre-commitment system.

The business practices and requirements for ABCG are outlined in the mandatory system attributes in the guidelines which include:

- the maximum value to be stored in a user account
- prize withdrawal limits
- the maximum initial transfer to an EGM
- information provided in player account statements.\(^\text{278} \) \(^\text{279} \)

The limits outlined for ABCG systems are detailed in Table 21.

Table 21: SA ABCG User Accounts and Payment of Prizes

<table>
<thead>
<tr>
<th>Limits</th>
<th>Hotels and Clubs Transparent Account(^{280} )</th>
<th>Casino Transparent Account(^{281} )</th>
<th>Casino Anonymous Account(^{282} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum value to be stored in a user account</td>
<td>Initial: $1,000 Increase from winnings: value stored about $1,000</td>
<td>Initial: $5,000 Increase from winnings: value stored about $5,000</td>
<td>Initial: $5,000 Increase from winnings: value stored about $5,000</td>
</tr>
<tr>
<td>Maximum transfer into EGM</td>
<td>$250</td>
<td>$500</td>
<td>$500</td>
</tr>
<tr>
<td>Transfer from EGM to account</td>
<td>Up to whole value</td>
<td>Up to whole value</td>
<td>Up to whole value</td>
</tr>
</tbody>
</table>
| Immediate redemption           | Up to $2,000 in cash Remainder by cheque or EFT | **Non-premium customer**  
                                      | Up to $5,000 in cash Remainder by cheque or EFT | **Premium customer** |


Ticket-in Ticket-out

TITO systems must be able to operate in either a ticket-in or a ticket-in and ticket-out configuration. This means that in either situation a ticket can be used to load credit but only in the latter case can a ticket be printed by the machine to issue winnings.283 284

Patrons can only use CRTs or cashiers for TITO-based play. CRTs are a self-service machine that allows patrons to redeem or be issued tickets285 and break notes, whereas cashiers are operated by staff.286 287

Outcome 3: Evidence of effectiveness

What evidence exists that the technology is effective:

- From an operational perspective
  
  Research did not identify information to address this issue

- In minimising harm caused by gambling
  
  It is expected that the harm minimisation effectiveness of these PCG technologies would be examined in the next gambling prevalence report.

Outcome 4: Evidence of weaknesses/impacts

Have any weaknesses of the technology been identified, and what evidence exists of the extent of these weaknesses?

No significant weakness of these technologies has been identified.

Have any adverse impacts on recreational gamblers been identified? What evidence exists on

Research did not identify information to address this issue

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285  Issuing tickets can only be done by CRTs in the casino


the extent of these impacts?

Outcome 5: Implications or potential traps

What are the critical implementation issues or concerns?

Research did not identify information to address this issue

Outcome 6: Potential costs

What are the implementation costs for the technology

- Capital costs
  Research did not identify information to address this issue

- Operational costs
  Research did not identify information to address this issue

- Training costs
  Research did not identify information to address this issue

Victoria

Table 22: Player card gaming used in relation to Victorian EGMs

<table>
<thead>
<tr>
<th>Research question</th>
<th>Player card gaming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome 1: Jurisdictional scan</td>
<td></td>
</tr>
<tr>
<td>What technology options are available?</td>
<td>To outline the scale of EGM gaming in Victoria, the total number of EGMs is capped at 30,000, comprising:</td>
</tr>
<tr>
<td></td>
<td>• 2,628 allocated to Melbourne casino</td>
</tr>
<tr>
<td></td>
<td>• 27,372 is split evenly between hotels and clubs.288</td>
</tr>
<tr>
<td></td>
<td>The Victorian Government has implemented YourPlay, which is a physical card-based tool used to track the money and time patrons spend on EGMs in Victorian hotels, clubs and casino. YourPlay is a statewide voluntary pre-commitment scheme.289</td>
</tr>
<tr>
<td></td>
<td>The YourPlay system is provided by the licensed gaming machine monitor, Intralot Gaming Service Pty Ltd (Intralot). Intralot provide relevant training to venue operators and staff to ensure they meet their requirements under the relevant responsible gambling Code of Conduct.290</td>
</tr>
</tbody>
</table>


290 Ibid.
There is a framework for the use of card based cashless (CBC) gaming card. However, no solutions are currently in use. Theoretically, a CBC card could be used to play an EGM. To do this, the patron will need to setup an account or cashless wallet with the venue.

Notably, the physical card used for CBC gaming cards, loyalty cards and YourPlay must be the type of magstripe card prescribed for YourPlay. Accordingly, the card has up to three separate functions – YourPlay voluntary precommitment, player loyalty and CBC gaming. It is important to note that the YourPlay tool on the card can be used on any EGM in Victoria to access pre-commitment, but the player loyalty and CBC gaming are only able to be used at the specific venue that operates the player loyalty and CBC gaming.

The high-level components of Victorian player card gaming are outlined in Table 23.

Table 23: VIC player card gaming

<table>
<thead>
<tr>
<th>Patron identification</th>
<th>Cashless gaming</th>
<th>Pre-commitment tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Optional through YourPlay</td>
<td>• TITO</td>
<td>• Time and expenditure limits</td>
</tr>
<tr>
<td></td>
<td>• CBC</td>
<td>• Track gambling activity across all Victorian gaming venues</td>
</tr>
<tr>
<td></td>
<td>- No systems are in use</td>
<td></td>
</tr>
</tbody>
</table>

What are the technology’s broad parameters / components?

YourPlay is a card-based tool that players use to set a loss and/or time limit while the card is inserted in a gaming machine. The card allows the player, via YourPlay, to monitor and manage their gambling activity on EGMs.

Specifically, YourPlay allows EGM players to:

• set limits on time or money spent
• track their EGM activity across multiple venues in Victoria.

Players insert their player card, which has a pre-commitment account attached to it, into the card reader on the EGM and enter the PIN. Furthermore, any pre-commitment limits set by the player will be applied to that gambling session.

CBC cards:

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291 [Cashless gaming commences at Victorian venues](#), Victorian Responsible Gambling Foundation website. Accessed 7 February 2022


293 Ibid.

294 [Cashless gaming commences at Victorian venues](#), Victorian Responsible Gambling Foundation website. Accessed 7 February 2022


297 Ibid., p vi.
- Can be identified (i.e. registered to a player) or anonymous.  
- '[M]ust be linked to an account or cashless wallet with a unique identifier / account number.'  
- Have a maximum balance of $1,000.

Furthermore, ‘Cashless accounts can be used only at the venue that issued the card and cashless wallet, although the card may be used for pre-commitment in other venues.’

### Outcome 2: Where and how

<table>
<thead>
<tr>
<th>What is the regulatory framework that applies?</th>
<th>The legislative basis for the YourPlay system was established by the:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Gambling Regulation Act 2003</td>
</tr>
<tr>
<td></td>
<td>• Gambling Regulation (Pre-commitment and Loyalty Scheme) Regulations 2014.</td>
</tr>
<tr>
<td></td>
<td>The Victorian Player Account Equipment Technical Standard and Victorian Pre-commitment System Requirements Standards provide the technical requirements that underpin YourPlay.</td>
</tr>
<tr>
<td></td>
<td>Furthermore, Intralot entered into a pre-commitment agreement in July 2014 with the Department which provided the framework for YourPlay to integrate with the monitoring system.</td>
</tr>
<tr>
<td></td>
<td>On 30 January 2019, the Gambling Amendment (Cashless Gaming) Regulations 2019 came into effect. The amendments to the Gambling Regulations 2015 allowed venue operators to provide cashless gaming on EGMs.</td>
</tr>
<tr>
<td></td>
<td>Concurrently, technical standards for CBC gaming were published by the Victorian Commission for Gambling and Liquor Regulation under section 10.1.5B of the Gambling Regulation Act 2003.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What business practices/requirements are in place?</th>
<th>YourPlay is a voluntary (opt-in) system, the limits are discretionary and set by the user. Daily and weekly limits for time and money are available. Players access and register YourPlay through venues and the Melbourne casino. YourPlay cards:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• can be obtained from gaming machine venues and the Melbourne casino in Victoria</td>
</tr>
</tbody>
</table>

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299 Ibid.

300 Ibid.

301 Ibid.


• work at any EGM in Victoria
• come in two varieties:
  - registered cards (where the player is identified)
  - ‘casual’ cards where the player is anonymous.

Importantly:
• ‘it is a legal requirement to offer YourPlay to anyone joining a gaming loyalty scheme.’
• Loyalty schemes are provided by venues.
• The anonymous cards have all of the core features of registered cards despite their anonymity.

As a player approaches their limit, a pop-up message will notify the player at 75% and 90% of their limit. If their limit is reached, a message will appear onscreen notifying them and they will be given the option to select ‘Stop playing’ or ‘continue playing’. If they continue, they will be given live action summaries that show them the amount they exceed their limit by.

The specific technical requirements for CBC cards are outlined in the technical standards - *Ticket-In Ticket-Out (TITO) and Card Based Cashless (CBC) Gaming in Gaming Venues*.

### Outcome 3: Evidence of effectiveness

<table>
<thead>
<tr>
<th>What research outcomes exist that the technology is effective:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• From an operational perspective The operational effectiveness of the YourPlay system was evaluated and determined to have been successfully implemented by Liquor and Gaming. The key points from the evaluation reporting were:</td>
</tr>
<tr>
<td>• The complex IT project underpinning the pre-commitment system was managed on time and budget and was proven to be very stable.</td>
</tr>
<tr>
<td>• The management of stakeholders was exemplary.</td>
</tr>
<tr>
<td>• In minimising harm caused by gambling The evaluation determined that YourPlay usage was low owing to YourPlay being an opt-in, voluntary pre-commitment system. Regarding the limit setting, which was ‘...considered to be the most likely route to realising harm reduction.’, it was ‘...understood that the voluntary nature of the scheme, together with the ability to override and set limits and</td>
</tr>
</tbody>
</table>

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306 Steve Whetton et al., op. cit., p vi
307 Ibid., p i
308 Ibid., p vi.
309 Ibid., p vi.
311 Steve Whetton et al., op. cit., p i
312 Ibid., p vii.
keep gambling with the YourPlay card in play, reduced the potential effectiveness of any harm reduction.’

Furthermore, it was found that a large amount of players chose to set high loss limits. ‘The median limit chosen by YourPlay cardholders was $50,000, however 8,301 of the 29,992 gamblers who set a limit chose a daily loss limit that was $500,000 or higher.’

‘This suggests that in practice the limit setting features is unlikely to have much, if any, impact on harm reduction as it will not even be able to fulfil an information provision function (e.g. it is extremely unlikely that these extreme values represent the genuine daily affordable loss limits for all but a few high rollers, and as players are extremely unlikely to actually reach these limits they are not provided with the warnings at 70 per cent and 90 per cent of their limit).’

‘Whilst YourPlay was effectively implemented and delivers benefits for those using it, usage is very low in hotels and clubs… If usage is to be increased to a level where YourPlay will have impacts consistent with its costs, then the incentives facing venues and/or gamblers need to be changed.’

It was also observed that users of YourPlay achieved benefits in that:

- ‘23 to 28 percent reported being more aware of their expenditure
- ‘24 to 29 percent reported that YourPlay made it easier to stick to the limits they set for themselves.’

Outcome 4: Evidence of weaknesses/impacts

| Have any weaknesses of the technology been identified, and what evidence exists of the extent of these weaknesses? | YourPlay
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No weaknesses of YourPlay were identified. See research outcomes for operational effectiveness for more information.</td>
<td></td>
</tr>
</tbody>
</table>

Cashless gaming

The Victorian Responsible Gambling Foundation (VRGF) commissioned a review of research literature to “…better understand the effects of cashless gaming on gambling behaviour and harm, given the potential for cashless gaming to become more widely used across Victoria due to COVID-19.”

Outcomes of the literature review regarding the weaknesses of the technology include:

- ‘Little gambling research has examined the unique effects of cashless gaming as a payment method, when compared to cash (as distinct from other features of cashless gaming such as pre-commitment).’
- ‘Many of the benefits of cashless gaming have been conflated with the benefits of other gambling harm-minimisation tools (e.g., player...’
tracking, pre-commitment effects have been confused with the effects of cashless gaming).\textsuperscript{320}

<table>
<thead>
<tr>
<th>Have any adverse impacts on recreational gamblers been identified? What evidence exists on the extent of these impacts?</th>
</tr>
</thead>
</table>

**YourPlay**

Mixed views regarding the scheme were identified in a focus group undertaken during the evaluation:

- The majority of the focus group thought that the fact limits can be over-ridden when reached made YourPlay ineffectual.\textsuperscript{321}
- The main barrier of the focus group was:
  - that they felt the scheme was aimed at at-risk gamblers
  - was unnecessary for them to use.\textsuperscript{322}
- Privacy concerns were raised in relation to YourPlay on-screen messaging popping up and being visible to others.\textsuperscript{323}
  - This concern underpinned feeling about the potential stigma of using a pre-commitment scheme.\textsuperscript{324}

**Cashless gaming**

The major findings from the literature review commissioned by the VRGF regarding impacts on recreational gamblers using cashless gambling were:

- ‘Consumer behaviour literature indicates that cashless payment methods are generally associated with increased expenditure. Evidence appears to support that this applies to credit cards, debit cards, and potentially also mobile payments (using eWallets).’\textsuperscript{325}
- ‘Literature relating to the ‘pain of payment’ – including recent neurological evidences – suggests that cashless payment methods are largely associated with less ‘pain of payment’ when compared to cash. This suggests that cashless payment methods have an ‘easy money’ effect and that cash is better for expenditure regulation.’\textsuperscript{326}
- The distinctiveness or salience of payments is important for patrons being able to identify their spending. ‘Low salience payments have been found to be difficult to track and undermine budgeting, when compared to high salience payments.’\textsuperscript{327}
- ‘Certain segments in the community may have difficulties with working memory or mental accounting, which is required in budgeting and expenditure management. These may include older people, people with comorbidities – such as anxiety and depression – and people with low

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\textsuperscript{320} Ibid., p 2  
\textsuperscript{321} Steve Whetton et al., op. cit., p 37  
\textsuperscript{322} Ibid., p 37  
\textsuperscript{323} Ibid., p 37  
\textsuperscript{324} Ibid., p 37  
\textsuperscript{325} Sarah Hare, op. cit., p 2  
\textsuperscript{326} Ibid., p 2  
\textsuperscript{327} Ibid., p 2
financial literacy and low education. Such groups may potentially experience issues with transactional expenditure information in cashless gaming.  

- While some consumer benefits (such as allowing money to be stored on a card or being able to move between EGMs more easily) have been claimed, ‘…[the] discrete effects of cashless gaming relative to cash have not been examined’.  

- ‘While some gamblers indicate that cashless gaming may help with management of gambling expenditure, others report that it makes expenditure management more difficult. This may highlight individual differences within gamblers (although the reasons for differences remain unclear).’  

- ‘[The] tokenisation of money tends to lead gamblers to spend more, when compared to cash (and presumably with less conscious reflection).’  

- ‘While many jurisdictions are increasingly moving towards cashless gaming, research also highlights that some vulnerable members of society may be at risk. In Australia, these may include both older people and people in the lower two income quartiles.’  

- ‘While research cannot identify how best to reduce the risks of cashless gaming, literature research points to some potential value of making the ‘pain of payment’ of cashless gaming equivalent to, or as close as possible, to cash.’  

### Outcome 5: Implications or potential traps

<table>
<thead>
<tr>
<th>What are the critical implementation issues or concerns?</th>
<th>A critical implementation issue identified in Victoria was the need to resolve a range of fundamental policy and design issues, such as the ones posed in the Pre-commitment Discussion Paper published by DJCS in 2011. Examples include defining:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- what pre-commitment is and what might it do (such as potential equipment, features and processes and incentives that influence take-up and use of pre-commitment)</td>
<td></td>
</tr>
<tr>
<td>- what the technical options are for pre-commitment (such as networked or non-networked systems)</td>
<td></td>
</tr>
<tr>
<td>- who should provide pre-commitment (such as responsibilities and provider options).</td>
<td></td>
</tr>
</tbody>
</table>

The evaluation of YourPlay identified key issues of the implementation of YourPlay, including:  

- Very low usage in hotels and clubs:

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328 Ibid., p 2  
329 Ibid., p 2  
330 Ibid., p 2  
331 Ibid., p 2  
332 Ibid., p 3  
333 Ibid., p 3  
- Comprised 0.01% of gaming machine turnover.\textsuperscript{335}

- Hotels and clubs not complying with requirements of YourPlay:
  - YourPlay was only offered to 31% of visits when joining loyalty programs.\textsuperscript{338}

- Poor cost effectiveness:
  - Cost per patron for the harm reduction benefits was $1,162.55.\textsuperscript{337}

- High loss limits set by patrons leading to diminished harm reduction benefits.\textsuperscript{338}

A set of 23 recommendations were outlined in the \textit{Evaluation of YourPlay Final Report} which address these issues including:

- YourPlay be set to opt-out for linked loyalty schemes
- funding a communications strategy to improve the awareness of YourPlay
- developing options to better incentivise YourPlay use by patrons and venues.\textsuperscript{339}

The Department intends to consult with the Victorian Responsible Gambling Foundation and the Victorian Commission for Gambling and Liquor Regulation to implement the recommendations outlined in the YourPlay evaluation report.\textsuperscript{340} A timeline for the implementation of the recommendations is not clear.

As at January 2022, the \textit{Casino and Gambling Legislation Amendment Act 2021} was passed, allowing the Victorian Government to implement nine of the 33 recommendations made on the Victorian Royal Commission into the Casino Operator and Licence.\textsuperscript{341} 342 343

The key recommendations that could minimise harms related to EGM gambling at the Melbourne Casino were recommendations 9 and 10 and made in relation to carded play and pre-commitment and time limits, respectively.\textsuperscript{344}

The nine recommendations implemented through the amendment Act ‘allow for the appointment of the Special Manager, strengthen regulatory powers and enable the State to act on the recommendation.’ Notably, this does not include clauses to implement recommendations 9 and 10. \textit{The Government}

\textsuperscript{335} Steve Whetton et al., op. cit., p i
\textsuperscript{336} Ibid., p i
\textsuperscript{337} Ibid., p ii
\textsuperscript{338} Ibid., p ii, xv
\textsuperscript{339} Ibid., p ii-iv
\textsuperscript{340} \textit{YourPlay – Victoria’s pre-commitment scheme}, Department of Justice and Community Safety website. Accessed 20 January 2022
also supports in-principle the other 24 recommendations, subject to further detailed analysis and consultation being undertaken, including to ensure there are no unintended consequences from our actions.  

Carded play

‘As has been shown, it is nearly impossible to monitor uncarded players at the Melbourne Casino. For that reason, it is appropriate that all customers should use a player card for all forms of gambling at the Melbourne Casino. A recommendation to that effect has been made in Chapter 6.

To enable proper research into problem gambling, it is important that the player card also be used to collect data.’  

Recommendation 9: Player card data

‘It is recommended that a direction be given to Crown Melbourne pursuant to section 23(1) of the Casino Control Act that the player card collect, to the extent practicable, data relating to:

- player buy-in (time, amount)
- player buy-out (time, amount)
- play periods (date, start time, end time)
- player turnover
- player losses and wins
- gambling product
- such further information as the regulator reasonably requires for anti-money laundering and Responsible Service of Gaming purposes.’  

Pre-commitment and time limits

‘An important step is to control gambling on EGMs, which is a form of gambling that causes more harm than others.

Pre-commitment is an obvious area of reform. If a full, mandatory, binding, pre-commitment system is implemented, that will significantly reduce the incidence of problem gambling.

The State has explained that there are practical difficulties that stand in the way of an immediate implementation of this system. Nonetheless, when these practical difficulties can be overcome such a system should be introduced.’  

Recommendation 10: Pre-commitment and time limits

‘It is recommended that as soon as possible, the YourPlay system be a full, mandatory, binding, pre-commitment system for Australian residents gambling on EGMs at the Melbourne Casino.

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The pre-commitment system should operate in the following manner:

- Each player must set a daily, weekly or monthly time limit and a daily, weekly or monthly loss limit.
- If the pre-set time limit or the pre-set loss limit is reached, the player cannot continue to gamble on an EGM and the limit(s) cannot be altered, for 36 hours.
- No player can gamble on an EGM for more than 12 hours in any 24-hour period.
- If a player has gambled for 12 hours in any 24-hour period, the player must take a break for 24 hours.
- A player cannot gamble continuously on an EGM for more than three hours.
- A player must take a break of at least 15 minutes after three hours of continuous gambling.
- A player cannot gamble on EGMs for more than 36 hours per week.
- There should be a default pre-set loss limit that the player can modify.
- The default pre-set loss limit should be set by regulation. It could be calculated by reference to the median income of a wage earner less the standard cost of living. Or it could be calculated by estimating the median losses of a recreational gambler. The pre-set loss limit should be reviewed at least annually.

For the effective operation of a full, mandatory, binding YourPlay system, internal control systems are needed to ensure that a customer is unable to acquire more than one card. The systems need to be approved under section 122 of the Casino Control Act.\(^{350}\)

<table>
<thead>
<tr>
<th>Outcome 6: Potential costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the implementation costs for the technology</td>
</tr>
<tr>
<td>- Capital costs</td>
</tr>
<tr>
<td>- Operational costs</td>
</tr>
<tr>
<td>- Training costs</td>
</tr>
<tr>
<td>The estimated total costs of YourPlay comprised the following costs incurred from 2014/15 to 2018/19:</td>
</tr>
<tr>
<td>- $5,996,110.32 incurred by the Victorian Government:</td>
</tr>
<tr>
<td>- Comprising staff implementation costs, software costs, communication strategy, evaluation and YourPlay days.(^{351})</td>
</tr>
<tr>
<td>- $58,837,589.92 incurred by the gaming industry:</td>
</tr>
<tr>
<td>- Comprising pre-commitment system fees, costs to purchase card reader and kiosks, staff training costs and staff time to register players.(^{352})</td>
</tr>
<tr>
<td>- $2,339,417.88 incurred by patrons:</td>
</tr>
</tbody>
</table>

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351 Steven Whetton, et al, op. cit., p 120

352 Ibid.
New Zealand

Table 24: Player card gaming used in relation to New Zealand EGMs

<table>
<thead>
<tr>
<th>Research question</th>
<th>Player card gaming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome 1: Jurisdictional scan</td>
<td></td>
</tr>
</tbody>
</table>
| **What technology options are available?** | Player card gaming in New Zealand is comprised of the voluntary pre-commitment system offered as part of the player loyalty system offered in New Zealand casinos in conjunction with cashless gaming technologies. As at July 2017, cashless gaming technology has been implemented by two main types of venue:  
- casino  
- class 4 venues (the New Zealand equivalent to hotels and clubs).  
Cashless technology in New Zealand can be broadly split into two groups:  
- Player account:  
  - player loyalty cashless account for casinos  
  - white card for SkyCity Adelaide only  
- Ticket-in ticket-out:  
  - Printed Ticket, Ticket-in Ticket-out (TITO) for casinos  
  - De-Centralised Off-line Cash-In-Ticket-Out (DOCITO) for hotels and clubs.  
Ticket-in Ticket-out (TITO) is prohibited in hotels and clubs. |
<table>
<thead>
<tr>
<th><strong>Patron identification</strong></th>
<th><strong>Cashless gaming</strong></th>
<th><strong>Pre-commitment tools</strong></th>
</tr>
</thead>
</table>

353 Ibid.
357 Ibid.
359 Ibid.
360 Her Majesty the Queen in Right of New Zealand acting by and through the Minister for Economic Development and SKYCITY Entertainment Group Limited, New Zealand International Convention Centre Project and Licensing Agreement, 2013, p 107-108
361 Ibid., p 28
<table>
<thead>
<tr>
<th>What are the technology’s broad parameters / components?</th>
<th>Casino</th>
</tr>
</thead>
</table>
| - Mandatory for player loyalty cashless accounts  
- Optional for white cards  
- Player loyalty cashless accounts  
- White cards (SkyCity Auckland Casino only)  
- Voluntary pre-commitment  
  - Only available to casino patrons through the loyalty card  
  - Time and expenditure limits  
  - On-screen messaging when approaching limits |

### Casino

‘Player Loyalty Cashless Account means a centralised account held on the Casino Electronic Monitoring System [CEMS] that is only able to be utilised by the use of a player’s loyalty card (or equivalent).’

White cards are cards issued by SkyCity Adelaide to patrons solely for the purposes of cashless gaming with transactions being recorded against, at minimum, a unique card number and are not related to the loyalty scheme.

‘Printed Ticket, Ticket-In Ticket-Out (TITO) means any ticket used or capable of being used in a casino in the conduct of gambling on a gaming machine or other gaming device in place of cash.’

### Hotel and club

DOCITO systems comprise:

- ticket printer device (replacing the gaming machine’s coin hopper)
- a Cashier’s Redemption Terminal (CRT) operated solely by venue staff
- optionally, an Automated Kiosk which is a stand-alone self-service machine for ticket redemption.

Notably, DOCITO systems do not have direct, real-time communication between the ticket printer, CRT or any central controlling server / equipment.

---


366 Ibid., p 2
Outcome 2: Where and how

| What is the regulatory framework that applies? | Sections 327 and 328(2) of the Gambling Act 2003 comprise the legislative basis for the Secretary of Internal Affairs to prescribe minimum standards for gaming equipment. These minimum standards form the basis for the implementation of technology in venues.

**Casino**

‘The ad hoc approach to cashless gambling in New Zealand casinos has created a “patchy” environment where minimum standards are created in response to particular requests from casinos and tailored to the particular way the requesting casino wishes to operate.’

The framework that applies to cashless technology for casinos comprises:

- ‘For SkyCity Auckland, Minimum Technical Requirements for Cashless Gambling as contained in Schedule 14 of the New Zealand International Convention Centre Project (NZICC) and Licensing agreement…’
- [GLI-16: Cashless Systems in Casinos](#)

- For all other casinos it is:
  - [Minimum Cashless Technical Requirements for Printed Ticket-In Ticket Out and Player Loyalty Account-Based Cashless Gambling Technology](#)

The governance framework of the New Zealand PCG systems is illustrated in Figure 7.

---


Hotel and club

There is limited provision for cashless technology in hotels and clubs under Minimum Technical Requirements for Class 4 De-Centralised Off-Line Cash-In-Ticket-Out Systems 2017. 372

<table>
<thead>
<tr>
<th>What business practices/requirements are in place?</th>
<th>Casino</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Casinos can issue player loyalty cashless accounts to patrons. These integrate with the voluntary pre-commitment schemes offered by the casino. 373</td>
</tr>
<tr>
<td></td>
<td>There are other requirements and practices outlined in the minimum standard which include requirements related to:</td>
</tr>
<tr>
<td></td>
<td>- player loyalty card reader interfaces</td>
</tr>
<tr>
<td></td>
<td>- electronic transfer limits. 374</td>
</tr>
<tr>
<td></td>
<td>Casinos can operate TITO systems which need to meet their relevant minimum technical requirements outlined by the regulator which include:</td>
</tr>
<tr>
<td></td>
<td>- system requirements (ticket validation, invalid tickets, acceptance conditions, ticket information, etc.)</td>
</tr>
<tr>
<td></td>
<td>- banknote and ticket acceptance specifications</td>
</tr>
<tr>
<td></td>
<td>- automated kiosk</td>
</tr>
<tr>
<td></td>
<td>- electronic transfer limits. 375</td>
</tr>
</tbody>
</table>

Hotel and club

372 Ibid.
374 Ibid., p 4-6
375 Ibid., p 6-12
DOCITO offered in hotels and clubs has operational requirements outlined by the regulator that include but are not limited to:

- $999 limit of the value of tickets to spend or redeem
- the ticket printer and CRT must be uniquely paired to ensure the tickets printed at the venue can only be redeemed at the venue
- requirements for ticket coding (e.g. barcode)
- security measures to ensure only valid tickets are used
- requirements for CRT
- reporting requirements (number of tickets, detailed for each ticket, date and time, etc.).

### Outcome 3: Evidence of effectiveness

<table>
<thead>
<tr>
<th>What research outcomes exist that the technology is effective:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• From an operational perspective</td>
</tr>
<tr>
<td>Research did not identify information to address this issue</td>
</tr>
<tr>
<td>• In minimising harm caused by gambling</td>
</tr>
</tbody>
</table>
| In the Schlotter Consulting report, *An exploratory study examining pre-commitment in New Zealand*, the relevance of cashless gambling technology to pre-commitment systems, and thus its role in harm minimisation, was questioned.

> 'The reason why cashless gambling was raised as a useful feature of pre-commitment systems by problem gamblers is unclear.

*Early trials of cashless gambling based pre-commitment systems in some jurisdictions have anecdotally reported that cashless gambling may allow improved expenditure monitoring by gamblers (as money is held in an account on a card).

*However, the longer-term impacts of cashless gambling remain unknown. It is also apparent that, while some gamblers consider cashless gambling as useful, some members of the community in New Zealand remain concerned about possible ‘unknown’ effects of cashless gambling (e.g., whether it could lead to greater gambling expenditure).

*This may thus highlight the potential to examine both cashless and non-cashless pre-commitment systems in any future New Zealand trials.*

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### Outcome 4: Evidence of weaknesses/impacts

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have any weaknesses of the technology been identified, and what evidence exists of the extent of these weaknesses?</td>
<td>Research did not identify information to address this issue</td>
</tr>
</tbody>
</table>
| Have any adverse impacts on recreational gamblers been identified? What evidence exists on the extent of these impacts? | During the exploratory study (the Schlotter report) examining pre-commitment in New Zealand, a focus group of patrons “…discussed the concept of cashless gambling as a possible feature of a future pre-commitment system. There was a general view, however, that if the system was cashless, then a range of security features needed to be in place to ensure that gamblers did not lose the money they held on their card.”

The focus group also outlined specific views about cashless gambling, which included:
- Concerns about the security of cards, especially anonymous cards.
- Potential for spending more money on gambling because:
  - using the card could allow you to play longer
  - the card is “…not as material as the actual cash in front of you.” |

### Outcome 5: Implications or potential traps

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the critical implementation issues or concerns?</td>
<td>Research did not identify information to address this issue</td>
</tr>
</tbody>
</table>

### Outcome 6: Potential costs

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the implementation costs for the technology</td>
<td></td>
</tr>
<tr>
<td>- Capital costs</td>
<td>Research did not identify information to address this issue</td>
</tr>
<tr>
<td>- Operational costs</td>
<td></td>
</tr>
<tr>
<td>- Training costs</td>
<td></td>
</tr>
</tbody>
</table>

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379 Ibid.
Table 26: Player card gaming used in relation to Norwegian interactive video terminals (IVTs)

<table>
<thead>
<tr>
<th>Research question</th>
<th>Player card gaming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome 1: Jurisdictional scan</td>
<td>The Norwegian Government banned all EGMs in July 2007 and in 2009 installed new interactive video terminals (IVTs) which are similar to EGMs. As at April 2012, there were 2,750 IVTs in Norway. The state-owned company, Norsk Tipping, previously operated all gaming machines and now operates all IVTs in Norway. The PCG system used in Norway is a mandatory card based cashless system with robust harm minimisation features. Patrons must use a Norsk Tipping player card to use an IVT. The high-level components of Norwegian PCG are outlined in Table 27.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 27: Norwegian player card gaming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patron identification</td>
</tr>
<tr>
<td>• Mandatory</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

What technology options are available?
- Broadly, Norsk Tipping player cards:
  - are registered to specific patrons (i.e. not anonymous)
  - must be accessed using a Personal Identification Number (pin)
  - are only available to Norwegian citizens
  - have predetermined limits (such as on daily spend, maximum bets, maximum wins and breaks)
  - can have personal limits set by patrons, including self-exclusion

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380 Angela Rintoul and Anna Thomas, Pre-commitment systems for electronic gaming machines, Australian Gambling Research Centre, p 7. Accessed 24 January 2022
382 About us, Norsk Tipping website. Accessed 24 January 2022
<table>
<thead>
<tr>
<th><strong>Outcome 2: Where and how</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What is the regulatory framework that applies?</strong></td>
</tr>
<tr>
<td></td>
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<td></td>
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<td></td>
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<td></td>
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<tr>
<td><strong>What business practices / requirements are in place?</strong></td>
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<td></td>
</tr>
</tbody>
</table>

[^384]: Ibid.
[^385]: Gambling Act etc. Accessed 24 January 2022
[^386]: Act on lotteries, etc. Accessed 28 January 2022
[^387]: Bjørn Helge Hoffmann, op. cit., p 12
[^388]: Ibid.
[^390]: Ibid, p 4-5
## Outcome 3: Evidence of effectiveness

<table>
<thead>
<tr>
<th>What research outcomes exist that the technology is effective:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• From an operational perspective</td>
</tr>
<tr>
<td>In a presentation delivered by Bjørn Helge Hoffmann, a Norsk Tipping Senior Advisor, the ban of slot machines and the introduction of the Aristocrat Lotteries Multix IVTs was heralded as a success.(^{391})</td>
</tr>
<tr>
<td>• In minimising harm caused by gambling</td>
</tr>
<tr>
<td>Ladouceur, Blaszcynski and Lalande (2012) put forward ‘Arguments offered by both proponents and opponents of pre-commitment referred to available data derived from trials conducted in …Norway with no apparent consensus on what the data demonstrated in respect of the effectiveness of pre-commitment as a public health measure.’(^{392})</td>
</tr>
<tr>
<td>Notably, Rintoul and Thomas suggest that ‘An assessment of the impact of [Norway’s full pre-commitment system including a universal maximum loss limit per day and month] demonstrated that losses fell following the introduction of new machines in 2009, while calls to gambling helplines reduced substantially, providing indirect evidence that the changes were successful (Lund, 2009).’(^{393})(^{394})</td>
</tr>
<tr>
<td>Figures reported by Norsk Tipping in 2012 indicate that in Q4 of 2011:</td>
</tr>
<tr>
<td>• ‘15% of gamblers were stopped by their Global monthly limit</td>
</tr>
<tr>
<td>• 1.6% of gambling sessions stopped with the mandatory break (after 1 hour of continuous play)</td>
</tr>
<tr>
<td>• 1.1% set personal time limits</td>
</tr>
<tr>
<td>• 2.3% set stricter personal money limits.’(^{395})</td>
</tr>
<tr>
<td>They report this as a success and discuss that although the ‘ban on bank notes and the later ban on slot machines had the biggest effect on [reducing player gambling expenditure] but the introduction of IVTs did not bring the problems back.’(^{396})</td>
</tr>
<tr>
<td>They also noted that the ‘Player Card imposed some challenges [regarding player impulse] arising from the transfer of money and availability.’(^{397})</td>
</tr>
</tbody>
</table>

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\(^{391}\) Bjørn Helge Hoffmann, op. cit., p 26


\(^{393}\) Angela Rintoul and Anna Thomas, Pre-commitment systems for electronic gaming machines, Australian Gambling Research Centre, p 7. Accessed 24 January 2022


\(^{395}\) Ibid., p 8, 27.

\(^{396}\) Ibid., p 23.
### Outcome 4: Evidence of weaknesses/impacts

<table>
<thead>
<tr>
<th>Have any weaknesses of the technology been identified, and what evidence exists of the extent of these weaknesses?</th>
<th>Research did not identify information to address this issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have any adverse impacts on recreational gamblers been identified? What evidence exists on the extent of these impacts?</td>
<td>Research did not identify information to address this issue</td>
</tr>
</tbody>
</table>

### Outcome 5: Implications or potential traps

<table>
<thead>
<tr>
<th>What are the critical implementation issues or concerns?</th>
<th>The following critical implementation issues / concerns were identified:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Ladouceur, Blaszczynski and Lalande indicated that the Norwegian experience is not directly comparable to the Australian EGM environment – stating that 'caution is expressed regarding the validity of extrapolating the Norway findings to other jurisdictions, given differences in the types of low-intensity electronic gaming machines compared to North American and Australian machines.'</td>
</tr>
<tr>
<td></td>
<td>• Norway’s full pre-commitment system is facilitated by Norsk Tipping having a monopoly on all IVTs.</td>
</tr>
</tbody>
</table>

### Outcome 6: Potential costs

<table>
<thead>
<tr>
<th>What are the implementation costs for the technology</th>
<th>Research did not identify information to address this issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Capital costs</td>
<td></td>
</tr>
<tr>
<td>• Operational costs</td>
<td></td>
</tr>
<tr>
<td>• Training costs</td>
<td></td>
</tr>
</tbody>
</table>

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398 Ladouceur, et al., op. cit., p 7
Novo Scotia (Canada)

Table 28: Player card gaming used in relation to Nova Scotian video lottery terminals (VLTs)

<table>
<thead>
<tr>
<th>Research question</th>
<th>Player card gaming</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 1: Jurisdictional scan</strong></td>
<td></td>
</tr>
<tr>
<td>What technology options are available?</td>
<td>In 2009 there were a total of 3,791 VLTs, comprising:</td>
</tr>
<tr>
<td></td>
<td>• 962 in casinos</td>
</tr>
<tr>
<td></td>
<td>• 2,234 in 391 liquor licenced venues</td>
</tr>
<tr>
<td></td>
<td>• 595 in First Nations gaming sites.(^{400})</td>
</tr>
</tbody>
</table>

Notably, there was moratorium on VLTs introduced in 2005 \(^{401}\) which was continued in 2011.\(^{402}\)

The Government of Nova Scotia introduced the MPS, a pre-commitment system, in 2010 for VLTs, which are equivalent to EGMs, following several trials of pre-commitment systems.

The MPS was:

- ‘…[a] province wide card-based player system for VLTs’ \(^{403}\)
- provided by Techlink Entertainment (now declared bankrupt)\(^{404}\) \(^{405}\)
- made mandatory in both in 2012 with light and full enrolment options\(^{406}\)
- discontinued in 2014.\(^{407}\)

For the purposes of this report, the MPS was the PCG system used in Nova Scotia and its high-level components are outlined in Table 29.

Table 29: Nova Scotia player card gaming

<table>
<thead>
<tr>
<th>Patron identification</th>
<th>Cashless gaming</th>
<th>Pre-commitment tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Optional:</td>
<td>• Not identified</td>
<td>• Time and expenditure limits</td>
</tr>
<tr>
<td>- Light (anonymous)</td>
<td></td>
<td>• Ability to stop your access for 24, 48, or 72</td>
</tr>
</tbody>
</table>

---


| What are the technology’s broad parameters / components? | The MPS comprised a magnetic card reader fitted to a VLT. During the mandatory phase, patrons had to be enrolled in the MPS and needed to swipe their card to use the VLT.  

‘The My-Play System [provided] the player with:

- historical information on the total amount spent and the time played by day, week, month, and year
- information on current in-play activity, including the amount spent and the amount cashed out in the current session
- the ability to set spending and time limits by day, week, month, or year
- the ability to immediately stop play for 24, 48, or 72 hours.’ |

Outcome 2: Where and how

| What is the regulatory framework that applies? | The Alcohol, Gaming, Fuel and Tobacco Division of Service Nova Scotia (the regulator) administers the:

- Gaming Control Act
- Video Lottery Regulations
- Atlantic Lottery Regulations
- Casino Regulations.  

These pieces of legislation underpin the legislative framework for the operation of VLTs in Nova Scotia.

The Nova Scotia Gaming Corporation (NSGC) is a Crown corporation with a mandate to ‘ensure gaming is as socially responsible as possible and generates reasonable economic returns.’

Accordingly, the NSGC was the body responsible for the implementation of the MPS and worked with the system developer, Techlink Entertainment, to build the system. |

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413 Ibid., p 5
What business practices/requirements are in place?

The MPS had two main types that patrons could choose:

- **Light**
  - ‘A player receives a player card with a unique identifier number, but no personal information is used or stored to generate the account.’ 414

- **Full**
  - ‘To create an account, a player swipes or scans a government issued ID at an enrolment terminal. The ID data is then scrambled to make a unique, confidential account identifier in the system. This unique identifier allows players to access their play activity as well as use the player information tools.’ 415

### Outcome 3: Evidence of effectiveness

<table>
<thead>
<tr>
<th>What research outcomes exist that the technology is effective:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- <strong>From an operational perspective</strong></td>
</tr>
<tr>
<td>The My-Play System Evaluation: Final Report (the report) ‘presents the final results of the evaluation of the [MPS] that took place over a five-year period from 2008 to 2013.’ 416</td>
</tr>
<tr>
<td>A key finding from that report regarding the operational effectiveness of the MPS was, ‘Player resistance to the [MPS], whether in the voluntary or mandatory stage, is a key observation and an issue that needs to be addressed in any further adoptions of a system such as the [MPS].’ 417</td>
</tr>
<tr>
<td>Throughout, there was a large group of players who simply didn’t see a need for such a system because they did not gamble enough or they did not have a gambling problem.</td>
</tr>
<tr>
<td>Despite extensive efforts to promote and sell the [MPS], most players did not come around to see the benefits of using the system for themselves.’ 417</td>
</tr>
</tbody>
</table>

- **In minimising harm caused by gambling** |
| Outcomes from the report suggests that there was a general decline in problem gambling rates within the cohort of problem video lottery gamblers that participated in the study, although this trend emerged before the introduction of the MPS. This was likely partially attributed to general declines. 418 |
| The proportion of problem and medium-risk gamblers decreased from the baseline rate in 2008 of 53% to 29% in 2013 during the mandatory phase. 419 |
| The data suggested ‘...problem and medium-risk gamblers are disproportionately spending less time and money on VLT gambling than before as compared to non-problem or low-risk gamblers.’ 420 |

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414 Ibid., p 3.
415 Ibid.
416 Ibid., p 57
417 Responsible Gambling Council Centre for the Advancement of Best Practices, op. cit., p 59
418 Ibid., p 53
419 Ibid., p 53
420 Ibid., p 53
Regarding limits and breaks in play, the ‘...usage of the control features (My Play Limit, My Money Limit, and Quick Stop) is relatively low.’ It was observed that following the MPS being made mandatory there was an increase of control feature usage but the majority were rare or one-off occurrences.  

Furthermore, ‘...there is no robust evidence that control features ...have an effect on player behaviour.’

It was observed that the self-exclusion tool ‘...reduces spending by a statistically significant margin. Hours spent gambling reduces by roughly 12 hours, cash played reduces by $4,100, and out-of-pocket spending reduces by $250 on average over the six-month period.’

The MPS monitoring features (My Account and My Live Action) which allow users to see their activity, were shown to be used by more patrons than the control features.

Interestingly, it was observed that patrons that viewed their live gaming action reduced their spending but patrons that viewed their past activity increased their spending.

In conclusion, 'this report presents the final results of the evaluation of the MPS that took place over a five-year period from 2008 to 2013... Overall, the results suggest that while some aspects of the [MPS] were associated with reduced negative outcomes for [video lottery] gamblers, poor utilization of the system was a significant issue.' Moreover, the effectiveness of the harm minimisation features varies from having no effect to having a positive effect to being associated with increasing gambling spending.

**Outcome 4: Evidence of weaknesses/impacts**

| Have any weaknesses of the technology been identified, and what evidence exists of the extent of these weaknesses? | According to the Nova Scotia Gaming Corporation (NSGC), the Government removed the MPS from VLTs in August 2014 after determining that the system was ‘...not meeting its objectives.’

'[The] data showed that more than 99.9% of video lottery players chose light enrolment, used multiple cards and card shared, and the vast majority of players were not using the system features at all.'

Therefore, the inherent weakness of the MPS was that, despite it being mandatory, patrons had significant choice on the types of harm minimisation features imposed on them – and the vast majority chose to not use them. |

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421 These control features correspond to the pre-commitment tools expenditure limit, time limit and breaks in play, respectively. Ibid., p 5

422 Ibid., p 44

423 Ibid., p 52

424 Ibid., p 52

425 These monitoring features correspond to the pre-commitment tools access to historical / current data. Ibid., p 5

426 Ibid., p 44

427 Ibid., p 52

428 Ibid., p 57


430 Ibid.

431 Ibid.
Have any adverse impacts on recreational gamblers been identified? What evidence exists on the extent of these impacts?

The report had interesting findings related to issues raised by patrons, including:

- ‘Focus group participants consistently raised the concern that the government was monitoring their play and that the information (such as winnings) could be used against them.’ 432
- ‘…many players found that privacy (in the sign-up process) was a concern.’ 433
  - Note that this is in relation to patrons being embarrassed to sign up to the MPS. 434

Other issues reported by the focus groups related to:

- ‘inconvenience
- confusing to use
- lack of knowledge
- the system decreased the entertainment value [of using a VLT].’ 435

Outcome 5: Implications or potential traps

What are the critical implementation issues or concerns?

The relevant critical issues arising from the Nova Scotian MPS are:

- In a 2014 news release, the responsible Minister, Andrew Younger, stated:
  - ‘While the My-Play System may have been a reasonable attempt to improve responsible gaming features on VLTs, in the end, it did not reduce play by people with gambling addictions, and in fact, the vast majority of play sessions didn’t even use the main features of the product.’ 436
  - This shows a distinct failure of the system to achieve the harm minimisation goals outlined by the Nova Scotian Government.
- Issues with the data being used to evaluate the outcomes of the voluntary and mandatory phases of the implementation of the MPS arising from:
  - Delays in rolling out the voluntary and mandatory phases of the MPS:
    - disrupting the data collection approach and timelines leading to lags between surveys437
    - loss of participants over time which ‘…impacted the generalizability of results’ 438

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432 Responsible Gambling Council Centre for the Advancement of Best Practices, op. cit., p 59
433 Ibid.
434 Ibid.
435 Ibid., p 9
437 Responsible Gambling Council Centre for the Advancement of Best Practices, op. cit., p 9
438 Ibid.
The system provider losing 9 months of data during the voluntary evaluation period\textsuperscript{439}

- Focus group research undertaken by NSGC during the mandatory phase of the MPS showed that player perceptions of the system ‘\textit{...were quite negative}.’\textsuperscript{440}
- Issues arising from players and venues not complying with the system:
  - ‘Players were sharing cards, as well as carrying multiple cards and disposing of them in a public way (i.e., garbage cans, littering the floors, or leaving them at the machines).
  - Furthermore, despite compliance testing efforts, some establishments left pre-enrolled cards at the terminal for all players to use, which was against operating policies.
  - With the large majority of players using the light enrolment option and multiple cards, it was increasingly difficult to interpret the systems data.
  - It was also impossible to evaluate the benefits of a voluntary vs. mandatory MPS, as the mandatory light enrolment option was essentially the same as having the voluntary option.’\textsuperscript{441}

### Outcome 6: Potential costs

<table>
<thead>
<tr>
<th>What are the implementation costs for the technology</th>
<th>The total cost to the NSGC of the MPS was $\text{CAD}19,500,000, comprising:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capital costs</strong></td>
<td>$\text{CAD}13,100,000 in capital costs</td>
</tr>
<tr>
<td><strong>Operational costs</strong></td>
<td>$\text{CAD}6,400,000 in costs related to developing and operating the system.\textsuperscript{442}</td>
</tr>
<tr>
<td><strong>Training costs</strong></td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{439} Ibid.

\textsuperscript{440} Ibid.

\textsuperscript{441} Ibid., p 10


87
Sweden

Table 30: Player card gaming used in relation to Swedish EGMs

<table>
<thead>
<tr>
<th>Research question</th>
<th>Player card gaming</th>
</tr>
</thead>
</table>
| Outcome 1: Jurisdictional scan | Svenska Spel, the state owned monopoly operator, administers ‘…land-based electronic gambling machines and land-based casinos.’

The number of land-based EGMs was unable to be determined. To get an idea of scale, the population of Sweden in 2020 was approximately 10.3 million – less than half of the population of Australia.

Svenska Spel made it mandatory for all customers to register with their pre-commitment system, thereby mandating the use of their player card – the Spellkortet customer card.

It is understood that when a Spellkortet customer card is issued to a person, it is linked to their social security number.

The Svenska Spel pre-commitment system and Spellkortet customer card form the basis for player card gaming in Sweden and its high-level components are outlined in Table 31.

Table 31: Sweden player card gaming

<table>
<thead>
<tr>
<th>Patron identification</th>
<th>Cashless gaming</th>
<th>Pre-commitment tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Mandatory</td>
<td>• Mobile wallet</td>
<td>• Self-imposed limits on gambling</td>
</tr>
<tr>
<td>- Linked to patron’s social security number</td>
<td></td>
<td>• Self-exclusion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No mandated limits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Thus, patron autonomy on limit setting</td>
</tr>
</tbody>
</table>


448 Ibid. Accessed 16 February 2022
What are the technology's broad parameters / components?

It was announced in 2020 that Svenska Spel would implement IGTPay™, an app providing players with a mobile wallet method to deposit and withdraw ‘funds from their mobile device’. 449

It is unclear whether the physical card has been phased out, or whether the new mobile wallet will run in parallel.

It is also worth noting that, in addition to their pre-commitment system, Svenska Spel owns and uses the Playscan tool in relation to their gaming machine activities. 450 Playscan is a responsible gambling tool that carries out three critical functions:

- risk assessment:
  - Playscan monitors player behaviour / gambling activity for harmful behaviours alongside factoring a self-rated test (GamTest)

- feedback from the risk assessment:
  - this is provided to the player on the Playscan website

- receiving advice:
  - the player can choose to receive advice in relation to gambling related supports (e.g., restrict level of gambling, budget setting and self-exclusion). 451

Outcome 2: Where and how

What is the regulatory framework that applies?

The Swedish Gambling Authority (Spelinspektionen) ‘...is responsible for ensuring that the Swedish gaming and gambling market is legal, safe and reliable. We issue permits for lotteries and have overall responsibility for control and supervision of gambling and lottery activities in Sweden.’ 452

The relevant regulatory framework comprises:

- the Swedish Gambling Act (2018:1138)
  - Technical requirements made under Chapter 16 of the Swedish Gambling Act

- the Swedish Gambling Ordinance (2018:1475)

- Swedish Gambling Authority (Lotteriinspektionen) Regulations

- General Guidelines on Responsible Gambling (LIFS 2018:2). 453

What business practices/requirements are in place?

All licensed gambling operators in Sweden have duty of care which requires licence holders to ensure that social and health considerations are observed in gaming operations. 454

Requirements under the legislative framework include:

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450 Anna Thomas, et al., op. cit.


452 About the Swedish Gambling Authority, Spelinspektionen website. Accessed 25 January 2022


- Self-imposed gambling limits:
  - Licensees must allow patrons to have limits or self-exclude.\textsuperscript{455}
- Social responsibility:
  - Licensees ‘...must counteract excessive gambling and help gamblers reduce their gambling when there is reason to do so.’ \textsuperscript{456}

From January 2019, it has been mandatory for licensed gambling operators to participate and bar individuals who have self-excluded under the national self-exclusion system - Spelpaus. It is understood that patrons self-exclude through the Spelpaus.se website.\textsuperscript{457} \textsuperscript{458} \textsuperscript{459}

<table>
<thead>
<tr>
<th>Outcome 3: Evidence of effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>What research outcomes exist that the technology is effective:</td>
</tr>
<tr>
<td>From an operational perspective</td>
</tr>
<tr>
<td>No evidence on the operational effectiveness was identified.</td>
</tr>
<tr>
<td>In minimising harm caused by gambling</td>
</tr>
<tr>
<td>No research outcomes regarding harm minimisation were identified that specifically related to the player card gaming system used by Svenka Spel. However, there are research outcomes that relate to harm minimisation outcomes of the Spelpaus national self-exclusion system. Håkansson and Henzel found that ‘After the introduction of a novel nationwide system of self-exclusion from gambling, enrolment into such a system appears to be associated with younger age and, not surprisingly, with problem gambling. However, self-exclusion in this type of system may also apply to broader groups than only individuals who screen positive for a recent gambling problem. However, several potentially high-risk-oriented gambling activities were more common in self-excluders than among others.’ \textsuperscript{460}</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcome 4: Evidence of weaknesses/impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have any weaknesses of the technology been identified, and what evidence exists of the extent of these weaknesses?</td>
</tr>
<tr>
<td>Research did not identify information to address this issue</td>
</tr>
</tbody>
</table>

\textsuperscript{455} Responsible Gambling, Spelinspektionen website. Accessed 25 January 2022
\textsuperscript{456} Ibid.
\textsuperscript{457} This is how shutdown works on Spelpaus.se, Spelpause.se website. Accessed 25 January 2022
\textsuperscript{458} A Håkansson, V Henzel, op. cit., p 3
\textsuperscript{459} Home page, Spelpause.se website. Accessed 15 February 2022
\textsuperscript{460} A Håkansson, V Henzel, op. cit., p 11
Have any adverse impacts on recreational gamblers been identified? What evidence exists on the extent of these impacts?

Research did not identify information to address this issue

Outcome 5: Implications or potential traps

What are the critical implementation issues or concerns?

Research did not identify information to address this issue

Outcome 6: Potential costs

What are the implementation costs for the technology?

- Capital costs
  - Research did not identify information to address this issue
- Operational costs
- Training costs

United States

Table 32: Player card gaming used in relation to USA EGMs

<table>
<thead>
<tr>
<th>Research question</th>
<th>Player card gaming</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 1: Jurisdictional scan</strong></td>
<td></td>
</tr>
<tr>
<td>What technology options are available?</td>
<td>EGMs, known in the United States of America (USA) as slot machines, are found in every state, except New Hampshire, District of Columbia, Tennessee, Hawaii, Utah, and Vermont.⁴⁶¹</td>
</tr>
<tr>
<td></td>
<td>The top five US states for the number of EGMs in 2019 was:</td>
</tr>
<tr>
<td></td>
<td>- Nevada – 163,612</td>
</tr>
<tr>
<td></td>
<td>- California – 75,369</td>
</tr>
<tr>
<td></td>
<td>- Oklahoma – 75,140</td>
</tr>
<tr>
<td></td>
<td>- Illinois – 42,940</td>
</tr>
</tbody>
</table>

Louisiana – 39,998.\textsuperscript{462}

For the purposes of this analysis, Nevada was chosen to focus our research. Nevada is home to a large gambling industry that engages in trade with Australia.\textsuperscript{463}

Nevada has a framework for the approval of cashless wagering systems. It is understood that ‘…most major gaming equipment providers have developed or are in the process of creating mobile wallets.’\textsuperscript{464}

Examples of cashless wagering systems used in Nevada are:

- IGT ADVANTAGE™ system\textsuperscript{465}
- Global Payments VIP pay\textsuperscript{466}
- ACS PlayOn\textsuperscript{467}
- Sightline Payments\textsuperscript{468} 469
- Resorts World mobile app\textsuperscript{470} 471
- Boyd Pay Wallet™.\textsuperscript{472}

Approved systems are primarily used to facilitate cashless gambling but do have harm minimisation features. Accordingly, approved systems are considered to be forms of player card gaming in Nevada.

The high-level components of player card gaming in Nevada are outlined in Table 33.

<table>
<thead>
<tr>
<th>Patron identification\textsuperscript{473}</th>
<th>Cashless gaming</th>
<th>Pre-commitment tools\textsuperscript{474}</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Mandatory</td>
<td>- Mobile / digital wallet</td>
<td>- Default transfer limits</td>
</tr>
</tbody>
</table>

\textsuperscript{462} Ibid.
\textsuperscript{463} Embassy of Australia, \textit{Australia’s Relationship with Nevada}, p 1. Accessed 26 January 2022
\textsuperscript{465} Newsdesk, \textit{IGT receives full Nevada regulatory approval for cashless gaming solution}, Inside Asian Gaming website. Accessed 26 January 2022
\textsuperscript{466} \textit{Cashless Gaming}, GlobalPayments website. Accessed 27 January 2022
\textsuperscript{467} Victorian Responsible Gambling Foundation, \textit{What is the impact of cashless gaming on gambling behaviour and harm?}, 2020, p 64. Accessed 27 January 2022
\textsuperscript{468} \textit{Cashless}, Sightline website. Accessed 27 January 2022
\textsuperscript{469} Howard Stutz, op. cit.
\textsuperscript{470} This is a mobile wallet developed by Konami gaming. Ibid.
\textsuperscript{471} Ibid.
\textsuperscript{472} Aristocrat Technologies Inc., \textit{Aristocrat Gaming™ and Boyd Gaming Launch Cashless Table Game Field Trial in Nevada}, Cision PR Newswire website. Accessed 26 January 2022
\textsuperscript{474} Ibid., p 4-5
### What are the technology’s broad parameters / components?

As defined under Regulation 14 of the Nevada Gaming Commission and Nevada Gaming Control Board, ‘Cashless wagering system means the collective hardware, software, communications technology, and other associated equipment used to facilitate wagering on any game or gaming device including mobile gaming systems and interactive gaming systems with other than chips, tokens or legal tender of the United States.’

To illustrate, the approved IGT ADVANTAGE™ system allows ‘…players the option to fund their cashless wagering accounts directly from their personal mobile devices eliminating the need to handle cash or visit a casino cage, ATM or kiosk.

By combining Resort Wallet™ and IGTPay™, players can securely transfer funds to and from their cashless wagering account from a range of external payment sources such as bank accounts, credit and debit cards or Sightline Play+ prepaid accounts, the company explained.

Funds within the PIN-protected cashless wagering account can then be transferred to and from a slot game with a simple tap of a smartphone when initiating or concluding cashless slot play.

Additionally, cashless gaming kiosks can be a part of the system. A cashless gaming kiosk ‘…is a device capable of accepting or generating wagering instruments and/or wagering credits or is capable of initiating electronic transfers of money to or from a wagering account or is used to facilitate other forms of cashless wagering functionality.’

### Outcome 2: Where and how

#### What is the regulatory framework that applies?

The regulatory framework for gambling depends on each state, as each state, through their laws, determines what types, if any, of gambling are permissible.

Accordingly, there is not a regulatory framework that applies universally to gambling in the USA.

In Nevada the following regulatory framework applies for PCG technology.

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475 ‘Enables funds transfer to and from the game using your mobile device’ [IGT ADVANTAGE Cashless](https://www.igt.com), International Game Technology website. Accessed 26 January 2022

476 ‘…IGT’s proprietary external funding gateway.’ [Resort Wallet](https://www.igt.com), International Game Technology website. Accessed 26 January 2022

477 Newsdesk, [IGT receives full Nevada regulatory approval for cashless gaming solution](https://insideasiangaming.com/), Inside Asian Gaming website. Accessed 26 January 2022


The manufacture, sale and distribution of gaming devices and cashless wagering systems for use or play in Nevada and the operation of slot machine routes and inter-casino linked systems are subject to:

- the Nevada Gaming Control Act and the regulations promulgated thereunder (collectively, the “Nevada Act”); and
- various local ordinances and regulations.

Gaming and manufacturing and distribution operations in Nevada are subject to the licensing and regulatory control of the Nevada Gaming Commission, the Nevada State Gaming Control Board and various other county and city regulatory agencies, collectively referred to as the “Nevada Gaming Authorities”.

<table>
<thead>
<tr>
<th>What business practices/requirements are in place?</th>
</tr>
</thead>
<tbody>
<tr>
<td>The business practices / requirements in place for cashless wagering systems in Nevada are outlined under the Nevada Act, the foremost being the technical requirements for cashless wagering systems, comprising:</td>
</tr>
<tr>
<td>- Technical Standard 3 – Integrity of and Proper Accounting for On-line Slot Systems and Cashless Wagering Systems</td>
</tr>
<tr>
<td>- Technical Standard 5 – Cashless Wagering Kiosk.</td>
</tr>
<tr>
<td>These technical requirements govern the technical specifics that cashless wagering systems must comply with to gain approval and cover harm minimisation measures including:</td>
</tr>
<tr>
<td>- prohibition on using credit cards</td>
</tr>
<tr>
<td>- electronic funds transfer limits</td>
</tr>
<tr>
<td>- daily monetary transfer limit</td>
</tr>
<tr>
<td>- conspicuously displaying responsible gambling messaging on devices or printed items.</td>
</tr>
<tr>
<td>Notably, on 20 January 2022 the Nevada Gaming Commission allowed patrons using cashless wagering system in casinos to verify their identify remotely and fund a cashless wagering account without having to physically go into a casino.</td>
</tr>
</tbody>
</table>

### Outcome 3: Evidence of effectiveness

<table>
<thead>
<tr>
<th>What research outcomes exist that the technology is effective:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- From an operational perspective</td>
</tr>
<tr>
<td>It is understood that the Nevada Gaming Commission undertake field trials before approval of a cashless wagering system. Reportedly, these trials can last between 30 and 180 days. Accordingly, the technical effectiveness of a cashless wagering system is tacitly implied by the system being given</td>
</tr>
</tbody>
</table>

---


484 Howard Stutz, op. cit.
approval by the Nevada Gaming Commission. Operational effectiveness of cashes wagering systems is not evident.

Findings from field trials do not appear to be publicly available. A search of the Nevada Gaming Commission website did not find any results.

- In minimising harm caused by gambling

There is little information regarding the impacts of cashless wagering systems on harm minimisation. It is understood that ‘Keith Whyte, Executive Director of the National Council on Problem Gambling (NCPG), reportedly stated that cashless systems …are designed to increase the time and money that gamblers spend at the table, and are inherently likely to negatively impact individuals with gambling problems (Whyte, 2020; Cited in Silverstein, 2019).’

Outcome 4: Evidence of weaknesses/impacts

| Have any weaknesses of the technology been identified, and what evidence exists of the extent of these weaknesses? | Research did not identify information to address this issue |
| Have any adverse impacts on recreational gamblers been identified? What evidence exists on the extent of these impacts? | See the harm minimisation research outcomes above. |

Outcome 5: Implications or potential traps

| What are the critical implementation issues or concerns? | The critical implementation issue appears to be balancing reforms to support new technology with that of the potential impact on gamblers, as demonstrated by Sandra Morgan, the Nevada Gaming Control Board Chairperson. She said of the implementation of cashless wagering systems, 'I’ve been pretty public saying that I’m open to looking at new ways that technology can help attract new customers and be beneficial for not only the industry, but even for responsible gaming measures as well.'

Widespread industry development of cashless wagering systems in Nevada following the regulatory changes to the Nevada legislation and the publishing of technical standards 3 and 5 to allow for the use of cashless wagering systems indicates that there is likely to be benefits to the operators of the new systems. However, there are suggestions, such as those by Keith Whyte, that cashless wagering systems are likely to negatively impact problem gamblers. |

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487 Howard Stutz, op. cit.

### Outcome 6: Potential costs

<table>
<thead>
<tr>
<th>What are the implementation costs for the technology</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Capital costs</td>
<td>Research did not identify information to address this issue</td>
</tr>
<tr>
<td>• Operational costs</td>
<td></td>
</tr>
<tr>
<td>• Training costs</td>
<td></td>
</tr>
</tbody>
</table>