

Convergence of gambling and gaming in digital media

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June, 2015



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Acknowledgements

The authors would like to acknowledge the valuable contribution of Ms. Brittany Keen who assisted with the content analysis of advertisements.

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Executive summary

Overview

This project aimed to examine the following research questions provided by the Victorian Responsible Gambling Foundation:

- Are gaming and gambling converging, in what ways and to what extent?
- To what extent are young people being exposed to gambling-like content through games?
- What influence do gambling-like elements and simulated gambling in games have on young people's gambling behaviour?
- What are the likely long term consequences for young people exposed to gambling-like experiences through gaming?
- How are gambling-like games marketed and promoted to young people, and what impact does this marketing have?

Literature review

Are gaming and gambling converging, in what ways and to what extent?

- It is clear that the products within gaming and gambling industries are converging in multiple ways.
- Gambling products are increasingly incorporating gaming themes and elements, primarily in an effort to engage with a younger audience. This may include betting on video game tournaments (esports) and incorporating skill elements into gambling games (including electronic gaming machines).
- Gambling themes have been increasingly incorporated into games, reflecting the popularity and appeal of these themes across audiences. These include stand-alone social casino games which closely simulate gambling, and may involve purchases, but do not generally award prizes of value. Practice or demo games are free-play versions of products offered by gambling companies. Many online, video and social games contain gambling elements within a larger game context.
- There is an increasing convergence between gambling and game operators. Social casino games may be offered as a separate product to customers, or be linked directly to a gambling product (online or land-based).
- There appears to be an overlap in the market for gambling-themed games and gambling, indicating a mutual interest in both activities, which may be used by operators to encourage migration in either direction.

- There is no regulation specifically developed for gambling-themed games currently within Australia.

To what extent are young people being exposed to gambling-like content through games?

- Young Australians are highly active online and participation in gaming is a very popular activity. This includes participation in gambling-themed games.
- Recent Australian studies of adolescents found 13-23% of respondents reported playing games with gambling themes in the past 12 months. Males and older adolescents are more likely to engage in these games.
- Young people may be exposed to additional advertising for gambling products and gambling-themed games as a result of engaging with gambling-themed games.

What influence do gambling-like elements and simulated gambling in games have on young people's gambling behaviour?

- Preliminary research indicates that there is a positive association between gambling, problem gambling and playing social casino games.
- Preliminary research evidence suggests that playing gambling-themed games may increase confidence in winning and persistence in gambling.
- Most adolescent social casino game players surveyed in a recent Australian study reported that these games had no impact on their desire to gamble, or their actual gambling; although a notable proportion of youth (30% of 127 youth surveyed who played social casino games) surveyed reported increased gambling as a result of these games. A proportion (9%) of these social casino game players reported gambling less as a result of social casino games, and 62% reported no impact of their experience with social casino games on how much they gamble. Among the 25% (n=32) who had played social casino games as a result of gambling, almost half (47%) of these respondents reported that the games were as much fun as gambling.
- Some young people also experience significant problems associated with online gaming. These problems appear to share some similarities with problematic gambling and there is some evidence of co-morbidity between these disorders.

What are the likely long term consequences for young people exposed to gambling-like experiences through gaming?

- Young people who play gambling-themed games are more likely to also engage in gambling and experience gambling problems. However, it is difficult to discern a causal direction and role of these games.
- Gambling-themed games may normalise gambling as a socially acceptable, enjoyable, and risk-free activity.
- Making payments within gambling games may increase the normalising effect and represent a barrier that, once crossed, may increase the likelihood of transitioning to gambling.

- Gambling games allow young people to engage with gambling without spending money. These games may increase their confidence in winning at gambling, perception of personal skill and their risk taking within gambling.
- For some young people, playing gambling games may substitute for or reduce gambling, particularly if gambling-themed games are viewed to be as fun and enjoyable as gambling for a lower (or no) cost.
- Currently, there is no firm evidence on the consequences of gambling-themed games for young people. The impact is likely to differ based on young people's individual characteristics and other factors in their psycho-social environment.

How are gambling-like games marketed and promoted to young people, and what impact does this marketing have?

- The lack of age restrictions on gambling-themed games means that advertisements for these may be viewed by young people.
- Research from broader public health fields indicates that young people are vulnerable to the impacts of marketing.

Content Analysis of Advertisements Present in Social Media and General Internet Use

- Screen-shots of advertisements for gambling and gambling-themed games were collected by 20 student participants recruited from the University of Adelaide's School of Psychology over one week based on their typical Internet and social media use.
- This study used a content analysis to map the textual and visual content of the different advertisements. Coding was independently conducted by two researchers.
- The majority of captured advertisements were for gambling-themed games played on social network services (SNS), with about one third of advertisements for Internet gambling products and a small number for tournament or competition, live venue gambling, and stand-alone games.
- The majority of advertisements came from companies that are not regulated in Australia.
- Nearly three quarters of advertisements were captured during Facebook use, with a small number from Twitter, Instagram, and YouTube.
- The most advertised game type was slots, followed by race/sports betting, general casino, poker, blackjack, video poker, and bingo.
- The visual display of advertisements typically featured: bright colours, character images of young adults, cartoon animal characters, gambling activities, sporting activities, references to popular culture and references to Las Vegas.
- Marketing techniques typically used included: calls to action (such as "Play Game," "Install Now," or "Download") and game and location specific language (e.g., pokies). Benefits

commonly promoted included free chips/coins, ease of sign-up and use, good game play experience, and the experience of a real gambling game.

- Latent and manifest message themes that were uncovered during analysis included glamorisation of gambling, winning, normalisation of gambling, play for free, and a general encouragement to play. Smaller, emerging themes included education (e.g., suggesting that gambling-themed game was a way to learn how to play the game) and the compulsive element of gaming.
- Notably, nearly 90% of the advertisements did not include any responsible or problem gambling language. No advertisements for gambling-themed games on SNS included responsible or problem gambling language.

The technological convergence of gambling and gaming: A typology of common features

- A typology of features observed in gambling and gaming is presented to classify distinct and overlapping features of the two activities. This typology may be employed as a checklist for classifying hybrid gaming and gambling activities.
- The presented typology considers core components of interactivity, monetisation, betting and wagering, types of outcomes, structural fidelity, context and centrality of gambling, and advertising.
- Gaming is defined according to its interactivity, skill-based play, and contextual indicators of progression and success.
- Gambling is defined according to its betting and wagering mechanics, predominantly chance-determined outcomes, and monetisation features that involve risk and payout to the player.
- Many digital games incorporate both free and paid virtual currencies or items, indicating there is a niche social interest in and uptake of virtual goods.
- Betting and wagering mechanics are commonly observed in many types of video games, although often this is not the central activity.
- This work indicates that it may be necessary to consider some hybrid or converging activities according to specific features, on the basis that some terms alone (e.g., “gambling game”) may not sufficiently capture the complexity of such activities.

Recommendations for Policy Responses

- As gambling and gaming are converging in many different ways, policy makers and operators are encouraged to regularly consult with experts to discuss the best strategies for minimising harms associated with any new and existing products.
- International standards should be used where possible to classify games using a single set of guidelines for developers.

- Policies should promote industry standards and higher levels of self-regulation due to difficulties with enforcement and compliance when dealing with international companies.
- Discussions should be held with SNS and website operators to reduce the exposure of young people to advertising for gambling products; particularly marketing that may be appealing to youth, including offshore gambling sites.
- Gambling-themed games provided by gambling operators should require the same policies and restrictions as apply to gambling products, even if these do not require monetary payments or return outcomes of monetary value.
- Practice games should include information about responsible and problem gambling, be clearly labelled as for adult use only, and should not be advertised in a way that is appealing to youth.
- Gambling-themed games should allow users to set limits on their time and monetary expenditure, access summaries of the time and money spent within the game, and information about problematic game play. Users should be able to self-exclude from these games.
- Gambling-themed games should include warnings that these may not be suitable for people who have gambling-related problems, for children and that the games may not accurately depict gambling.
- Games should not include links to or advertisements for gambling products.
- Public education and awareness campaigns are needed, particularly to inform parents, teachers and young people about the potential negative impact of gambling-themed games.
- Parents should be encouraged to monitor children's game use and educate young people about gambling and the risks involved within this activity.

Gambling and Gaming Review

The project will examine the following research questions:

- Are gaming and gambling converging, in what ways and to what extent?
- To what extent are young people being exposed to gambling-like content through games?
- What influence do gambling-like elements and simulated gambling in games have on young people's gambling behaviour?
- What are the likely long term consequences for young people exposed to gambling-like experiences through gaming?
- How are gambling-like games marketed and promoted to young people, and what impact does this marketing have?

The purpose of this project was to inform the Victorian Responsible Gambling Foundation's (VRGF) response to the convergence between gaming and gambling, particularly with regard to young people. To respond to the research questions the project included a comprehensive literature review, development of a typology to identify and classify features of activities that would distinguish them as gambling or gaming, identify and analyse types of advertisements seen by young Australians, and formulate recommendations about appropriate policy responses to this issue at a state and federal level.

This project was completed in May to June 2015.

Literature review

This chapter presents an overview of the research evidence on the convergence of gambling and gaming and its potential impact on young people. Specifically, this summarises the nature and structure of gambling and gambling-themed games available in Australia, including their similarities and differences. This discussion includes consideration of co-ownership and partnership between gambling and gaming operators and of regulatory issues, including international regulatory reviews. The review also examines rates of user uptake and participation in gambling-themed online activities in Australia, with particular attention to new gambling-themed games such as free-to-play apps termed 'social casino games'. The literature on young people's exposure to gambling-themed games and advertising is discussed. The chapter summarises research findings and expert opinion on the known and theorised influences of gambling-themed games on young people's gambling behaviour, including the risk potential for problematic consequences such as disordered gambling in adulthood.

Methodology

The purpose of this review was to summarise academic, industry, and governmental reports on the convergence of games and gambling activities. The scope of this review was limited to games and gambling accessible in Australia; however, some information from international jurisdictions is included where of potential relevance to the Australian context. Given that research on social media and gambling is only relatively new, and that the markets and underlying technologies, platforms, and content of gaming and gambling are changing rapidly, it was recognised that the academic literature would be limited in both quantity and relevance. To identify peer-reviewed academic literature, literature searches were conducted on multiple available bibliographic databases, *Academic Search Premier*, *PubMed*, *PsychINFO*, *ScienceDirect*, *Web of Science*, and major Internet search engines, such as *Google Scholar*. Searches were conducted using a range of keywords and logic, including "Social casino games; Internet OR online gambling; Internet OR online gaming; social media AND games; social media AND gambling; social gaming AND gambling; gambling AND social media promotions OR advertising; social gaming AND gambling problems; gambling AND mobile; gambling AND gaming consoles; responsible gambling AND social media". Reference lists of identified publications were also searched to identify further relevant publications. This search process identified key authors who were then sought using searches conducted in *Scopus*. Reference lists of reviews of social media and gambling were also examined as well as references of the included studies.

This review was conducted between April and June 2015. In addition, the review searched the websites of university-based research centres to identify any relevant research publications or projects either completed or in progress, both in Australia and internationally. Published conference proceedings from major gambling conferences held worldwide were also consulted for relevant papers. Additional search methods were employed to identify literature outside traditional academic sources, including: (1) government websites and State gambling regulatory bodies; (2) industry reports, such as reports published by SuperData and other companies that specialise in market research, and (3) review of media articles, including coverage of presentations by industry experts, reports of policy developments, and updates on industry developments relevant to gambling and gambling-themed gaming.

Are gaming and gambling converging, in what ways and to what extent?

Gaming and gambling industries are changing constantly, largely driven by increasing technological capabilities that grant users the ability to access online activities with ease and affordability. One consequence of the rapid advent and uptake of digital technologies has been the capacity for digital media content and functionality previously available only on a singular device to now span, influence, and be shared across multiple devices and networks. Sometimes referred to as 'digital convergence' (Griffiths, 2013; King, Delfabbro & Griffiths, 2010a), this phenomenon has also been observed in the crossover of some gambling and gaming products, platforms, and networks. These developments have led to concerns regarding the potential for the structural boundaries between gaming and gambling to become indistinguishable, such that 'hybrid' gambling activities adopt features of gaming (and vice-versa).

There have been very few rigorous attempts to examine the social impact of technological convergence on the gambling and gaming markets. Evidence to date shows that the gambling market has been influenced by the introduction of Internet gambling (see Gainsbury, 2012; Hing, Gainsbury, Blaszczynski, Wood, Lubman, Russell, 2014) which is reflected in increases in the uptake of online gambling, including in Australia (Gainsbury, 2012; Gainsbury, Russell et al., 2015; Wardle, Moody, Griffiths, Orford & Volberg, 2011; Wood & Williams, 2011). Similarly, the digital gaming market has been revolutionised by broadband technology, mobile devices such as tablets and smartphones, and the formation of large social communities and networks attached to gaming activities. In this context, the question is raised: *Do these gaming and gambling activities converge, in what ways and to what extent?*

Psychological research based on reports from selected samples of users suggests that there are increasing opportunities for digital gambling and gambling-themed games and activities (e.g., see King, Delfabbro, Kaptsis, & Zwaans, 2014). However, such research provides only a limited analysis of the scope and types of activities, opportunities, and promotions associated with convergence. This may be attributed to academics' relative lack of access to up-to-date information on the market and gambling/gaming intellectual property, as well as the difficulties associated with asking participants to recognise, recall, and report a wide range of activities and experiences for which there may be no established consensus on terminology (see Gainsbury, Hing, Delfabbro, & King, 2015). Industry reports can provide a useful resource to fill this gap in the knowledge base. A Morgan Stanley Research report (2012) stated there are five primary types of convergence between gambling and gaming:

- a) The introduction of gambling elements to gambling-games;
- b) The cross-selling and marketing of online gambling sites or land-based venues to social gaming customers;
- c) The introduction of social gaming features to online gambling sites;
- d) The consolidation of similar games on non-monetary social gaming and online gambling sites owned by the same operator; and
- e) The gamblification of non-gambling games, in which customers can win items of value

These types of convergence between gambling and gaming suggest that there is significant potential for new products to be introduced. For example, where online gambling is regulated, gambling

elements may be introduced into social games, such as betting on outcomes. As the customer base is already familiar with the product and may already be playing the games, this increases the likelihood of them migrating to betting activities. However, the extent to which gambling elements are present in these social games will depend upon jurisdictional regulations. Costs to the industry associated with adding gambling can include requirements for regulatory compliance, identity verification, anti-money laundering measures, fraud prevention and detection, and safe and secure monetary deposits and withdrawals. These complexities are one potential reason why one observes partnerships between gambling and gaming companies as a way to share expertise and economies of scale. Conversely, a gambling operator could attempt to migrate a gambling-themed game user to a separate gambling platform, potentially in partnership with the game operator or through targeted advertising. As game users have indicated some interest in gambling-themed activities, they may theoretically be interested in gambling online. However, as the vast majority of social casino players do not make any monetary payments (pay to play), this suggests that people's motivation for gambling on these activities relate principally to factors such as socialisation or excitement rather than monetary motives (Gainsbury, Hing, Delfabbro, & King, 2014). Migration can also occur in the opposite direction, that is, gambling operators provide free gambling-themed games for land-based or online gambling customers when they do not want to or are unable to gamble (Shortt, 2012). This could allow gambling operators with a way of increasing customer engagement and an opportunity to continue to market their products to a target audience of existing or potential customers. Finally, hybrid models may emerge which involve the inclusion of gambling-like elements in non-gambling games or the ability to win prizes of value in gambling-themed games.

There are some demonstrated overlaps between the structural and situational characteristics of digital gambling and video games (Bramley & Gainsbury, 2014; Griffiths, King, & Delfabbro, 2012; King, Delfabbro, Derevensky, & Griffiths, 2012; King, Delfabbro & Griffiths, 2010b; Wood, Griffiths, Chappell & Davies, 2004). Both activities may provide large rewards ('jackpots') delivered on a random basis, employ similar on-screen audiovisual cues, provide social spaces for interaction and competition, and offer opportunities for advancement and progression. Although online gambling and gaming activities have some similarities at face-value, the underlying game mechanics often differ between gambling and non-gambling activities (Gainsbury, Hing et al., 2014). One of the current limitations in the gambling and gaming fields is a lack of consistent terminology used by researchers, policy makers and regulators, the gambling and gaming industries, treatment providers and consumers (Gainsbury, Hing et al., 2014; Griffiths, 2010; Owens, 2010; Parke, Wardle, Rigbye & Parke, 2013). As there is also no single accepted definition of what constitutes a gambling-themed game, as well as ways to differentiate different types of activities that incorporate related elements, it is difficult to develop a reliable research base (Gainsbury, Hing et al., 2014). Such problems suggest the need for consistent language around these activities. A taxonomy will be proposed that is based on and extends upon work by Gainsbury, Hing and colleagues (2014). The basic structures of gambling and gambling-themed games will be discussed below.

The definition of gambling

Gambling has a legal definition in most jurisdictions, including Australia. The core legal components of gambling generally include the requirement for a monetary stake or wager (also referred to as 'consideration'), an outcome that is determined mostly or entirely by chance, and a prize of monetary or other value that is awarded to a winning participant (Nettleton & Chong, 2013; Parke et al., 2013; Rose & Owens, 2009). Although the terms monetary or real money gambling may be used to differentiate online gambling from gambling-themed games (also referred to as 'free-to-play', 'freemium', 'non-monetary' gambling games), the requirement for a monetary payment is implied in the term gambling.

The legal definition of gambling above may be advanced as an argument against the classification or recognition of gaming activities with gambling elements as a form of gambling. Following this view, one contention is that gambling-like activities should be viewed only as gaming or, more generically, as interactive entertainment. However, some other perspectives on gaming and gambling convergence have recognised other core aspects of gambling that are represented in these activities. For example, gambling involves, not only the dynamics of winning and losing something of value (typically money), but also the satisfaction of psychological motivations of excitement and diversion associated with these experiences (Walker, Shellink, & Anjou, 2008). Whether virtual currency in social gambling meets an accepted definition of 'something of value' is part of an ongoing debate on the socio-economic value of virtual assets and identities (King et al., 2014). With respect to play dynamics, it may be contended that financial and simulated gambling activities have a high degree of parity as psychological phenomena. Laboratory studies of gambling, for example, have long employed simulated gambling paradigms to examine human factors underlying disordered gambling (e.g., cognitive bias, physiological arousal) (Clark, Crooks, Clarke, Aitken, & Dunn, 2012; Dixon & Schreiber, 2002; Kushner et al., 2007). This work underscores the observation that a financial element of play is an important aspect in motivating gambling, but not the only element involved in the initiation and maintenance of gambling sessions, or development of gambling problems.

Attempts to regulate gambling-themed games are discussed in more detail below; however, the difficulty in defining social casino games has been a major hurdle to any putative attempts at regulation. The ability for players to pay to extend, advance, or enhance their play experience with social casino games introduces a monetary payment element, but this is optional for players. Furthermore, some social casino games may be considered to have prizes of value. These changing features of social casino games are likely to continue to attract regulatory and legal attention.

Online Gambling

A 2015 Morgan Stanley report estimated that global gambling revenue in 2014 was US\$423 billion, of which only 35% came from land-based casinos (Cohen, 2015). Online gambling was estimated to account for 9% or US\$37 billion of this amount. The Department of Broadband, Communication, and the Digital Economy (DBCDE) reported that the total value of Internet gambling in Australia in 2010 was likely to be around AUD\$1.6 billion, of which around 60% is spent on prohibited services based overseas and the remainder with Australian licensed services (DBCDE, 2013). Another report has stated that Australian expenditure on Internet sports betting had risen from \$928 million in 2010 to \$1.1 billion in 2012 (Roy Morgan Research, 2013). According to figures compiled by the Global Betting and Gaming Consultants, Australians spend substantially more gambling per capita than any other country (BusinessWire, 2015). Estimating the value of the online gambling market and Australian expenditure is difficult, particularly in relation to funds gambled with offshore gambling sites.

A national telephone survey indicated that the past-year adult prevalence rate of Internet gambling in Australia in 2010/2011 was 8% and the estimated percentage of land-based-only gamblers in the population was 56% (Gainsbury, Russell et al., 2015). The prevalence of Internet gambling was substantially higher than previous estimates (less than 1% in 1999, Productivity Commission [PC], 1999) and confirms reports of increased participation through regulated and offshore sites. This is consistent with the increased Internet penetration and use across multiple areas over the same time period.

In Australia, wagering and lotteries can be legally provided online through licensed providers and advertised nationally. The most popular forms of online gambling are sports and race betting and lotteries (Gainsbury, Russell et al., 2015). However, Australians are able to access offshore websites (which illegally provide these services to Australian residents) and bet on a large variety of casino,

slot, bingo, poker, and other gambling activities. A review of how Australians are using online gambling was published in 2014 (Hing et al., 2014).

Most online operators also offer mobile applications and Ladbrokes announced they will be the first Australian operator to launch an app for the new Apple Smartwatch (Schwartz, 2015). This reflects the large increase in mobile device betting over the past few years. Mobile and portable devices have been estimated to account for 30% of the online gambling sector by the end of 2015; for example Ladbrokes recorded a 50% share of their total revenue generated through mobile betting applications in 2014 (Schwartz, 2015).

In contrast to Apple's policy to allow gambling apps in the iStore, Google Play has banned apps that involve gambling for prizes of value (Amsel, 2013). In July 2013, Apple's Australian App Store removed gambling apps for *PokerStars* and *888*, as these were not legally permitted to be operating in Australia. Android users can still access gambling and betting apps, but must download these from the website of operators, rather than from the Play Store. This may make them less accessible as users have to find the operators online rather than browsing for apps and they would not be promoted to users through the Play Store. To install an app from outside of Google Play, users have to change their settings to admit installations from unknown sources, which opens them to greater risk of viruses and malware as the apps are outside the quality control checks that Google initially subjects apps to when submitted. Despite this, the increasing proportion of revenue that Australian gambling operators are reporting from mobile devices suggests that customers are using apps to a greater extent than previously (Hing et al., 2014). This parallels general use of mobile and mobile apps, which have increased across multiple activities. In December 2014, there were 21 million mobile handset subscribers in Australia and the volume of data downloaded via mobile handsets in the three months to 30 December 2014 represented a 36% increase from the three months to 30 June 2014 (Australian Bureau of Statistics [ABS], 2015).

Online gambling on games

Recent developments in the gambling market have involved an increased focus on integrating gaming elements into traditional gambling activities. This has been described as a specific response to the interests of the millennial generation and an attempt to attract and retain younger gambling consumers (Harwell, 2015; Trefis, 2015). In June 2015, Nevada passed a bill that allows an element of skill to be included in slot machine games (Nevada Senate Bill 443). Methods are in place to ensure that, even in skill gambling, the gambling industry retains an overall edge (Harwell, 2015). Some slot machine manufacturers have already introduced slot games that use themes from popular social games, traditional arcade games, or television game shows. Some slot machines also include features that give the impression of skill being involved, such as a joystick or gamblers making 'choices' despite outcomes being randomly determined.

Another development within Australia (and the UK) is the introduction (in June 2015) of online betting on eSports otherwise known as professional video gaming. Betting on eSports reflects the huge popularity of these games and tournaments; the 2014 tournament for *League of Legends* attracted 60 million online viewers (Boreham, 2015). Viewers and players of eSports are predominately young adults, with 59% estimated to be aged between 21 and 35 years of age within the US and Western Europe (Newzoo, 2014). These players are also more likely to spend money on games compared to gamers in general.

Through a partnership with US-based Unikrn, Tabcorp's wagering website *Luxbet* will begin offering markets for tournaments of popular online video games such as *Counter-Strike* and *League of Legends* (Gardner, 2015). Through Unikrn, users can access live viewing, discussions and competitive odds on eSports and bet on the outcome of matches and tournaments. Similarly, an

Australian-based site *ESportGaming* has a gambling license from Curacao and offers pari-mutuel betting on eSports (Boreham, 2015). Without a license, which they do not currently hold, the site will not accept play from Australians. The ability to bet on video games represents a clear point of convergence of genres. Given that the audience of eSports is young, likely to be employed, and willing to spend money, they represent a potentially new and lucrative market for betting companies.

In addition to betting on eSports, several websites provide a platform for gaming operators to convert their social games into gambling products, often using third-party providers. These sites allow gambling on games that are conventionally played without any monetary rewards or costs. Using a third party provider avoids the costs and changes required to convert a game to a gambling product. These include the costs and application process of becoming a licensed gambling operator, compliance with regulations, marketing and branding, as well as currency issues, anti-money laundering requirements, and ensuring fair play.

One example of a provider of gambling on games is Odobo, a HTML5 program for game developers to produce, distribute, and monetize their games content for the online regulated gambling industry. Odobo allows games developers to distribute content through a network of licensed, established gambling operators globally. This allows game developers to produce games for the gambling market without becoming a licensed operator, or developing the technology required, as Odobo provides this platform. The developer earns a license royalty on their games that generate revenue and the gambling operators can offer a larger variety of gambling content to their customers, beyond typical gambling games and wagering options. Odobo has partnered with major online casino companies including Betfair, Bet365, Unibet and Gala Coral Interactive. Customers of these operators can bet on the games available within the Odobo marketplace. Odobo has a gambling license from Gibraltar and also offers social casino games without any monetary cost or reward for users. This allows users to play free-to-play or real-money variants of the games available. These games are not licensed to provide services to users located within Australia.

Similarly, Betable is a standalone proposition site that allows users to place wagers on various events including social games and allows customers to connect directly from their Facebook and Twitter accounts. Betable has partnered with a number of social casino game operators and uses its gambling license and infrastructure to provide software which enables customers to gamble on social games (Takahashi, 2012). Betable is licensed by the UK Gambling Commission and its games are not licensed to be provided to users located within Australia.

Gambling on social games

According to a report by Morgan Stanley (2012), the vast population of social casino gamers may represent potential customers that could be recruited by gambling operators. Few studies have directly examined migration from social casino games to gambling. In a small scale longitudinal study, out of the 99 participants who played social casino games but had not previously gambled online before the survey, 26% had started gambling at the six-month follow-up survey (Kim, Wohl, Samon, Gupta & Derevensky, 2014). In a study of 2,010 Australian gamblers, 13% of respondents surveyed also played social casino games and this was more common among Internet gamblers, younger gamblers, males, those born in Australia, and those who smoked daily, used illicit drugs and had higher levels of psychological distress (Gainsbury, Russell, & Hing, 2014). Social casino game players were also more likely to have a positive attitude about the benefits of gambling and were more likely to participate in each form of gambling assessed as compared to gamblers who did not play social casino games. These findings confirm reports of some overlap between gamblers, particularly online gamblers, and social casino game players and game players may be encouraged to migrate to gambling sites or play these in addition to social casino games.

Following the demonstrated popularity of social casino games, several partnerships were formed between social casino game operators and gambling companies, or mergers and acquisitions occurred. However, attempts by social casino game operators to provide gambling have not been successful. For example, after initially announcing and launching betting games in the UK in 2013 in partnership with gambling operator Bwin.Party, Zynga has subsequently withdrawn from the gambling market (Cox, 2015). The company stated that it would continue to focus on free-to-play social games, which have been very successful, including their *Texas Hold'Em* poker game. Similarly, Paddy Power's social media-based gambling app, *BetDash*, which debuted in late 2012, was terminated in August 2014. This followed 888 Holdings shutting down its gambling *Magic888 Casino* app from Facebook in July 2012, barely 18 months after its 2013 debut, and Gamesys closing its *Bingo & Slots Friendzy* gambling Facebook app in May 2012 (Altaner, 2014; Amsel, 2014). The lack of success of operators attempting to offer gambling via social networking services and migrating social casino game players to gambling products suggests that the market of players is not the same for these activities or players' interests differ between activities. Additionally, creating the minimum standards required to be granted a gambling license may be substantially more difficult on a social networking service (SNS) than a standalone site. For instance, gambling operators have to be able to verify a customer's identity and ensure a secure log-in and that their account details are kept safe. The identity verification and security on SNS are not adequate for these purposes.

Skill games

A key area for convergence between gambling and gaming is the ability for players to bet on skill games that they themselves play. In many jurisdictions this is not classified as a gambling activity as the outcomes of games are primarily determined by skill. Similarly, fantasy sports and tipping competitions are also generally exempt from gambling regulation where the outcomes of these are considered to be based on a user's own skill (in using statistics to predict outcomes) rather than chance events and outcomes are determined based on multiple rather than a single event (e.g., UIGEA, 2006; Victorian Commission for Gambling & Liquor Regulation, 2013). However, it is important to note that over the past 12 months, daily fantasy sports have garnered a lot of attention from gambling regulators with debates over whether these should be classified or regulated as a form of gambling (Heitner, 2015).

Typically, players will be competing against one another, rather than against 'the house', which enables the outcome to be determined based on merit (skill) (Epps, 2014a). For example, Virgin Gaming allows users to enter organised gaming tournaments, challenge other users to multiplayer games, and place wagers on the outcome of their own video game challenges (Hsu, 2010). The providers take revenue from the outcome of games, but not based on who wins or loses. The monetary aspect of these activities is also considered in their classification such that all users pay the same entry fee and prizes are pre-determined. This means that a game has to offer the exact same opportunities for both players to win the game, without the influence of random luck such as a deck of cards, dice roll, or random number generator. For example, poker is only partially a game of skill; its gambling activity stems from the influence of a random deal, of the cards on the game outcome. In contrast, two players each playing an identical video game that creates the same challenges and opportunities for each player is a skill game. Monetary payments and awards are typically referred to as entry fees, tournaments, challenges, and contests, as opposed to stakes, gambling, and bets.

Betting on skill games versus gambling on games where chance also plays a role reflects a fine line that distinguishes between gambling and non-gambling activities. *Koalah* has created a web-based platform for skill-based games, where players can win money based on wagers they make on online and mobile games (Takahashi, 2015a). Game developers can adopt its platform to work with mobile and desktop games independently of the Apple App Store and Google Play Store. The terms and

conditions require users to be 18 years of age and to reside in a jurisdiction where participation in the competition is permitted by law; it is the customer's responsibility to ensure that they abide by these conditions. *Koalah* also provides information about responsible gaming as well as tools including voluntary deposit limits (daily), voluntary self-exclusion (minimum six months), information on how to recognize problem betting, and internet tools to prevent underage access. Similarly, *Skillz* is an online gaming platform available on the iOS where users can win money for playing online skill-based games (Moscaritolo, 2014). This is legal in the US, where other forms of online gambling are largely illegal. *Cashplay* is another provider of mobile game cash tournaments available through Android and iOS apps with more than 100 games including action, puzzle, shooter, and sports games (Takahashi, 2015b). The company has created more than 100 payment options for deposits and withdrawals.

The skill betting market is considerable. Revenues generated from betting on skill games (also referred to as amateur e-sports) have been predicted to exceed US\$10 billion between 2014 and 2017 (Epps, 2014b). Bloomberg Business estimated that more than 40 million people played fantasy sports in North America in 2014, 80% of whom are males, and almost 90% are Caucasian, with an average age of 34 years, and of which 78% have college or an advanced degree and 47% pay to play (Satariano, 2015). One of the largest sites, *FanDuel*, which offers daily fantasy sports, reported US\$57.3 million in revenue in 2014, after paying out US\$564.5 million in winnings, an increase from US\$14 million revenue in 2012 (Satariano, 2015).

Gambling-themed games

In contrast to the activities described above, the following gambling-themed games generally have no monetary prizes and are free to play, although they include some optional monetised features (e.g., the option to purchase virtual currency).

Social casino games

Social casino games are some of the most popular gambling-themed games that are widely accessible in Australia. Social casino games refer to online gambling-themed games that do not require payment to play or provide a direct payout or monetary prizes (Gainsbury, Hing et al., 2014). They are hosted on or interact with a SNS, including through mobile apps. Their central theme is a simulation of a gambling activity (e.g., poker, slots, roulette, bingo, keno, betting).

Social casino games are growing in popularity worldwide, including the already strong Australian customer base. The global social casino market generated an estimated US\$2.8 billion in revenue in 2014, a 37% increase from 2013 (Eilers Research, 2015). Revenue is expected to reach US\$4.4 billion by 2015 (SuperData, 2013). This growth is being led by mobile growth, which now generates more than half of global revenue. Social casino games are one of the most lucrative mobile gaming categories (Kushnir, 2015). One game industry report estimated that around 10% of all app store revenue comes from social casino games, mostly through mobile devices (Kushnir, 2015). Social casino games are also one of the most popular social games. Social casino games grew to represent 23% of the market share of social games on Facebook in 2012, as compared to 3% in 2011 (Gambling Data, 2012). A 2013 report estimated that there were 170 million social casino game users (98 million on Facebook) and forecasts have predicted the global audience to reach 269 million by 2016 (Macquarie Equities Research, 2013). Notably, many more people are estimated to participate in social casino games than online gambling, although the online gambling market generates substantially more revenue than social casino games (Morgan Stanley, 2012).

Available data indicate that Australians are more likely than users from any other country to spend money on social casino games, with around 3-4% of players paying to play (SuperData, 2015). In 2013, Australian was the second highest revenue producing country for social casino games in 2013,

with revenue increasing 49% for these games from 2012, reflecting an already established market (Reyburn, 2014). The most popular games types in Australia are casino, slots, poker, and bingo (SuperData, 2015). However, unlike in Europe and the US, Australians prefer poker over casino games and are less likely to play bingo. Australia is estimated to generate US\$115 million in revenue in 2015, which is expected to increase to US\$131 million by 2017 (SuperData, 2015). Mobile gaming accounts for 54% of players, and is the fastest growing form of access. However, desktop players generate a larger amount of revenue.

Although social casino games and gambling may appear similar to players, the underlying mechanics of the activities are very different. For example, social casino games are typically not based on random outcomes and chance, but employ algorithms designed to enhance player enjoyment and encourage continued play (Sapsted, 2013). Social casino games monetise using a 'freemium' model. The basic game is free, but many users are prepared to pay for upgrades and increased game time by purchasing in-game virtual currency. As only a minority of users do pay-to-play, game operators have to balance strategies to heighten game enjoyment with strategies to monetise users quickly and frequently (Cox, 2015). Players also spend money in different ways as compared to gambling. Unlike online gambling, where players must open an account and deposit funds before they can play, social casino game players have the opportunity to purchase virtual credits (of various forms). These can then be spent for ongoing game play, to unlock additional levels or features, to personalise or decorate games, and to give virtual gifts to online friends. For many users, social casino games represent a more casual and less threatening environment than online gambling sites (Masterminds Advertising, 2012).

A social media platform enables users to share their achievements and progress, view other users' achievements on leaderboards, invite other users to play with them or support their play, share virtual goods and credits between users, discuss the game through supported synchronous and/or asynchronous exchanges, and compete with other users in challenges (Parke et al., 2013). Despite these opportunities, some social games can be played with no or very limited social interaction, depending on the user's preferences and game settings. Some social games employ a hybrid approach, for example, by allowing play without permitting access to social media platforms, but limiting the game play and social functions possible. However, social games tend to encourage social interaction and reward users for sharing the game and involving their connections with other users with access to additional game features or content bonuses to enhance user experiences. Nonetheless, many social media gaming activities may have only a superficial social aspect, or social functions that do not factor significantly into the overall gaming experience (Gainsbury, Hing et al., 2014). In a recent study of 521 Australian adults who played social casino games, social interaction was rated as not important by 61% of players (Gainsbury et al., 2015a). However, competition and challenge was rated as at least somewhat important by 63% of players, indicating that awareness of other people's progress (or their own) is relevant to the game experience.

A report based on an analysis of 20 million free-play mobile gamers across 40 different game titles during January 2015 found that just 2.3% of all players made an in-app purchase with real money, as compared to 1.5% in 2014 (Swrve, 2015). Furthermore, 0.23% of players accounted for 64% of in-app purchase revenue, demonstrating the reliance of the gaming industry on high-volume players. This is similar to a previous report which found 0.5% of Zynga players accounted for more than 70% of the company's non-advertising revenue (Macquarie Equities Research, 2013). The Swerve report found that the average time to first purchase was 15 hours, a reduction from 24 hours in 2014, which was taken as evidence that games are becoming more successful at incentivising early spending. The typical paying player spent an average of US\$29.17 per month, an increase of one-third since 2014. The authors concluded that, although there was still a clear reliance on a small but growing number of

players, social game operators were attempting to broaden their payer base and develop a more sophisticated approach to driving revenue.

A survey of 1,554 Australian adults conducted in 2014 found that 34% of these had played social casino games in the previous 12 months (Gainsbury et al., 2015a). Social casino gamers were younger than non-gamers (average age was 42.5 years), were more likely to work full-time or be students, but were less likely to be unemployed or retired, and were more likely to speak a language other than English at home than non-social casino game users. Of interest, no gender difference was reported, whereas previous industry estimates indicate that social casino gamers are predominately female (Morgan Stanley, 2012). Most respondents reported engaging in one or two sessions of social casino game use in a typical day on which they play social casino games. Younger adults were significantly more likely to play more sessions as were those with higher levels of problem gambling severity. On typical days of social casino game use, most respondents reported spending 30 minutes or less playing social casino games. Around half of the social casino game users surveyed reported having made purchases within these games, which is much higher than industry data suggests (SuperData, 2015). Most people played the games through computers, although almost one-third used mobile, and one-fifth used tablet devices.

Practice games

Many online gambling operators offer free-play versions of their own games, which are marketed as 'practice', 'demo', or 'instructional' sites, allowing users to become familiar with the rules of the games before risking actual money. Practice gambling games are often offered on .net sites to differentiate these from .com sites that provide gambling. This distinction usually enables operators to avoid requiring customers to identify themselves and provide proof of their age, and .net sites can also be advertised with fewer restrictions than sites offering real money gambling (Monaghan & Derevensky, 2008; Monaghan, Derevensky, & Sklar, 2008). However, the advertisement of .net sites has been restricted in several international jurisdictions, including Australia, in recognition by policy makers of the 'blatant' attempt by offshore gambling operators to advertise sites closely tied to gambling sites and increase brand awareness (DBCDE, 2013).

In a survey of 1,554 Australian adults, 27% reported having played practice games in the past 12 months (Gainsbury et al., 2015a). Males were more likely to have played practice games, and users were younger than non-users (average age 41.8 vs. 48.2 years). Similarly to social casino game users, practice game users were more likely to work full-time, be a full-time student, and were less likely to be retired. Practice game users were also more likely to speak a language other than English at home, and gamblers were more likely to play practice games than non-gamblers (33% vs. 12%).

Games with gambling elements

In addition to games that centrally feature gambling-themes, many games incorporate gambling-type activities as a feature or incidental element of game play. The inclusion of gambling-themed elements within video games is not new. For example, *Super Mario Bros* was developed in 1985 and featured slot machine-style mushrooms to win prizes and cost coins to play. One more recent example is *Jetpack Joyride*, a social media game that appears to be marketed to children. Although not the core objective of the game, players can acquire 'spin tokens' which allow players to play what resembles a slot machine where acquired rewards are used within the game. However, it has been argued that the slot machine does not appear randomly; rather it recognizes when users are likely leaving the game (such as following a series of losses) and provides incentives to continue playing (Rogers, 2012).

Similarly, the online game *Runescape* has been criticized for encouraging youth to gamble (Derevensky & Gainsbury, in press). This game features 'Squeal of Fortune', which allows players to

'purchase spins' from a virtual wheel to win prizes. *Runescape's* owner, Jagex, has been criticized for changing the terms and conditions at the same time as introducing this feature to ensure that the company is not liable if a player uses someone else's credit cards (Screen Play, 2012).

Co-ownership and partnerships between social casino games and gambling operators

There is an increasing intersection between social casino game companies and gambling operators. Several large international gambling companies have merged with or purchased social casino game operators. It has been argued that gambling operators have looked to social casino games as an additional source of revenue, particularly in the US where online gambling is largely illegal and with the exception of lotteries, gambling has experienced low growth related to economic recession (Horváth, & Paap, 2012). Social casino games reach a large audience, generally larger than those actively using online gambling. In jurisdictions where online gambling is restricted, gambling-games may reach a large user base, which could act as a funnel to online gambling should regulations be changed. This scenario occurred in Italy, when *Gioco Digitale* offered free poker prior to online poker being regulated, and saw a substantial number of 'free' players switch following regulation (Burridge, 2012). Alternatively, social casino games and gambling may appeal to different audiences and games may be offered to enhance a gambling operator's product range and customer base, operating within separate verticals. Finally, hybrid models are emerging, with the potential for real rewards to be awarded for playing social casino games.

Gambling operators may have a competitive advantage in the social casino game market as they understand gambling content and player engagement, have brand recognition, and have the potential to cross-promote products to customers (Kushnir, 2014). A survey of 61 US land-based operators found that 75% were focusing on social gaming for virtual currency which would be tied to a rewards program and 67% were focusing on free-play games (Innovation Group, 2013). A survey of almost 300 online gambling site operators found that the top reasons to launch a social casino game including the anticipation of legal gambling via social media platforms, as a new revenue stream, customer acquisition, brand strengthening, and new business opportunities (Gutierrez, 2012). MGM Resorts Senior Vice President of Business Development, Tom Mukulich, reported that offering social casino games is a way to reach the roughly 30 million members of the casino operator's player loyalty program, engage with them no matter where they are located and to strengthen the connection between customers and their brand (Takahashi, 2013). From this perspective, social casino games represent a valuable tool to increase customer loyalty and build brand awareness and preference with potential customers. Social casino games appeal to a broad demographic of users and may encourage users to also try gambling. Social casino games can also be used to market new products, for customers to gamble on within venues (Shortt, 2012).

Examples of partnerships, mergers, and acquisitions between social casino game and gambling operators include:

- Playtika, owned by Caesars Interactive Entertainment, a subsidiary of Caesars Entertainment, the world's largest gambling company, accounts for 22% of the entire social casino game market (Grove, 2015).
- IGT, one of the world's largest manufacturers of electronic gaming machines, recently taken over by GTech, a subsidiary of Lottomatica, accounts for 11% of the market through *DoubleDown Casino*.

- Churchill Downs, the racetrack company which hosts the Kentucky Derby and owns an online gambling site offering pari-mutual horse racing (twinspires.com), purchased Big Fish Games, the fifth-largest maker of social casino games with a focus on mobile games, in a transaction worth US\$885 million (Norris, 2014).
- Other major social casino game operators with close ties to gambling include Aristocrat Leisure, Scientific Games/Bally Technologies, MGM Resorts International, and WMS.

Several land-based gambling venues have begun offering social casino games to customers and potential customers. This development has largely been led by properties within the US. It has been argued to provide a way to increase the competitiveness of land-based casinos, to protect their markets, market their product, and increase consumer attendance in venues (Girvan, 2015). One example is *Maryland Live!*, a social casino game operated by a casino in Maryland who released data which indicated that 12% of the online players came into the casino to gamble (Girvan, 2015). Of these, 40% came more frequently, were worth 20% more per visit, and stayed 10% longer than other customers. *myVEGAS* was launched in 2012 in partnership with MGM Resorts International and offers a social casino game. Of note, players earn loyalty points within games that can be redeemed for substantial real-world prizes, such as complimentary rooms at resorts, tickets to shows, and chips to gamble within casinos (see Figure 1).

In 2014 *myVEGAS* reportedly had 850,000 daily players, two million Facebook fans, and more than \$10 million in reward redemptions from approximately 100,000 players (eastcoastgambler, 2014). *myVEGAS* has partnered with several casinos across the US. Although the games are free to play, users can pay to purchase additional virtual credits, which may be gambled in the online games to win prizes of real value. The game allows casinos to market to consumers outside their immediate geographical area and encourage game players to visit the venues to redeem their prizes (Figure 1). The virtual currency players earn can be used for prizes including shows, restaurants, hotel rooms, retail, clubs and bars, with multiple partners including casinos, restaurants, hotels, airlines, and cruise companies.

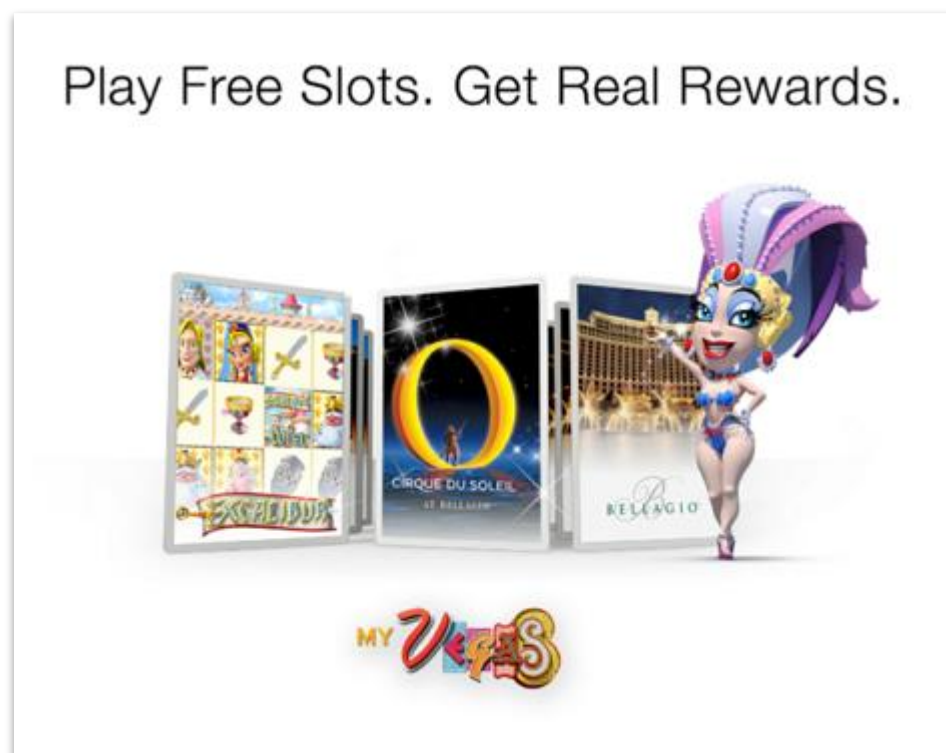


Figure 1: Loading screen for myVEGAS app including advertisements for gambling venues

An interview with one gambling operator in Australia discussed the social casino games that this venue was offering to Australian customers (Gainsbury et al., 2015a). This venue required customers to verify their age before playing the game, although as this used Facebook for this purpose it would not be difficult to falsify this information. Nonetheless, the game was not actively promoted to youth. The game was primarily used to engage with potential venue visitors although money could be spent within the game. In 2015, a group of Queensland RSL Clubs partnered with a UK Company, GameAccount, to offer social pokies and table style casino games at *Club 8 Casino*. To play, customers have to register online by entering their name, date of birth, email and address. Club members are able to enter their membership number for fast registration and receive 1% cash back on any purchases. Players receive free credits, which are replenished each night and can purchase additional credits. Play is restricted to Australian adults aged over 18 years and the virtual credits cannot be cashed out or redeemed. These examples provide some indication that Australian gambling operators are interested in providing social casino games to customers. However, the majority of Australian gambling operators have not made any moves towards this, with the exception of several electronic gaming machine manufacturers.

Overlap in social casino game and gambling markets

The size of the social casino market and demonstrated interest among this population in gambling-themed activities, mean that this is an attractive market of potential customers for many gambling operators. There is some indication that social casino game players do also gamble. A survey of 1,103 US social casino game player revealed that over two-thirds (68%) of players are interested in gambling, 64% of players think that Internet gambling should be allowed, and 67% would likely gamble online if this were legal (SuperData, 2013). Over one-third (36%) of social casino players reported visiting a land-based casino more than twice a year, indicating that social casino players and gamblers are overlapping consumer groups.

An industry report on Australian players reported that 71% of social casino players visit land-based venues and almost four out of five gamble online (SuperData, 2015). In a survey of 2,010 Australian gamblers, 13% reported having played social casino games in the past year (Gainsbury, Russell, Hing, 2014). Social casino gamers were younger (average age = 43 years) and more likely to be males than non-social casino gamers. Social casino gamers appeared to have a greater overlap with the Internet gambling rather than the land-based gambling market and were more likely to view that the benefits of gambling outweigh the harms than non-social casino gamers. The results indicated that gamblers who play social casino games represent a distinct sub-group of gamblers, and their younger age suggests that there may be an increasing trend towards gamblers also playing social casino games through the next generation.

In a recent survey of Australian adult social casino players there was a substantial overlap in the social casino game and gambling markets. A significantly greater proportion of social casino game players were also gamblers (91%) as compared to non-social casino game players (64%). Social casino game users are typically motivated to play for fun and excitement, whereas gamblers participate to make money, although excitement and fun are also important reasons for gambling (Gainsbury et al., 2015a). Less than 2% of social casino gamers surveyed indicated that they would be gambling if they were not playing social casino games and around three-quarters were not at all interested in gambling on their favourite social casino games. This indicates that, although social casino gamers may also gamble, these are distinct activities motivated by different interests. This is further confirmed as the majority of social casino gamers indicated these games had no impact on how much they would like to gamble (61%) or how much they actually gambled (66%). However, one-fifth of the social casino game players reported that these games increased their desire to gamble,

and 17% reported that the games increased how much they did game. Similarly, 17% of the social casino gamers reported that they had gambled as a result of their social casino game use, which was more common among males and younger respondents as well as those with higher problem gambling severity levels. The most common reason endorsed for moving from a social casino game to gambling was to win money. Of these, 15% thought that their experience with social casino games would increase their success with gambling. This indicates that players perceive there to be similarities between social casino games and gambling, despite the game mechanics generally being very different.

This is greater than the estimated low conversion rate of social casino gamers to paying customers (estimated at approximately 2%) (Morgan Stanley, 2012). The results suggest that most social casino gamers prefer to play without spending money and their gambling is unaffected by social casino games, but for a small, but notable minority, these games do influence their gambling and lead to migration.

Legislative and regulatory issues

In many cases, technological innovation is driving change in the gambling and gaming industries. The rapid pace at which new technologies are developed mean that these are typically released into the market and used by consumers, without necessarily any updates to regulatory oversight. The rapid development of gambling and gambling-themed games may reduce society's capacity to regulate, monitor, and be aware of the availability and operation of these activities and how users engage with them. For example, in Australia the regulations governing Internet gambling were created in 2001, well before Facebook was invented, smartphone use became ubiquitous, and video streaming was commonly used. Despite many changes in how Internet gambling is now provided and several State and Federal Government inquiries, regulations for Internet gambling have not been updated.

Online social casino games are legal in Australia; however, some concern has been expressed about the gambling-content of games. Specifically, Senator Nick Xenophon has stated that online social games with gambling themes constitute gambling and should therefore be prohibited by the Interactive Gambling Act (IGA) (Nettleton & Chong, 2013). One problem raised in relation to this bill was the difficulty of defining the target of the ban in a way that is sufficiently broad to cover a range of games and platforms and allows for future developments, but that does not have the unintended consequence of restricting games not considered problematic (Joint Select Committee on Gambling Reform, 2013). Furthermore, the New South Wales Law Reform Commission stated in a 2011 report that virtual currency which could be won in games was akin to free balls released in pinball game machines and that these could not be exchanged for money and were not things of value (New South Wales Law Reform Commission, 2011). A similar conclusion was reached by the Australian Communication and Media Authority (ACMA) in December 2011 in response to concerns raised by Senator Xenophon. It confirmed that the games could not be played to win money or anything else of value and there is "no facility to convert or cash out the 'virtual' currency accumulated during game play into 'real' currency" (Addisons, 2011).

In the Final Report of its Review of the IGA, the DBCDE confirmed that "the distinction between these [online social] games and gambling is that there is no cash prize on the outcome and no cash at risk during the game" (DBCDE, 2013, p 139). This reiterates that the games are not classified as gambling and are not prohibited under the IGA. However, if the games have close links to prohibited gambling sites, then they may be classified as advertising and are likely to be prohibited (DBCDE, 2013). The DBCDE recommended that game providers should closely monitor gambling-style services to ensure that they are not inappropriately targeting children or misleading children about their prospects of success with real gambling services. It was also recommended that the department review ongoing

research in the area and consult with other regulators regarding potential measures to address the access and marketing of online gambling-style services to children. More recently the South Australian Premier proposed that games containing gambling-themes would be classified as suitable for those aged over 15 years and launched a media campaign indicating that gambling-games were not suitable for children and could lead to gambling (Weatherill, 2013).

In January 2015, the UK Gambling Commission released its latest summary on social casino gaming, which they define as games that look and feel like traditional gambling games, but have no prize of money. Based on their review of the literature, including industry reports, this report stated that there was no evidence to move to regulate these games as most people play the games using small amounts of time and money and although a minority of players are excessively involved, this group is too small to justify regulatory intervention. The report described potential risks as relating to problem gambling, transition to gambling, and exploitation of consumers. It also stated that the government would only be advised to consider regulating these games within the scope of gambling regulation if the risks could not be addressed by responsible self-regulation by operators or targeted use of existing consumer protection powers.

In February 2015, an effort to ban online gambling in the US was widened to include social casino games (Grove, 2015). It was argued that social casino games are converging with gambling and may encourage young people to gamble. There is some legal precedent to the claim that virtual credits may have monetary value. In 2011 a UK court sentenced a computer hacker to jail for stealing virtual chips from a Zynga gambling-themed game (Morris, 2011). The hacker was able to sell a third of the 400 billion virtual chips on the black market for £53,612 before being caught, demonstrating that these have monetary value. A more recent legal action has been brought against *DoubleDown Casino* in the form of a class action lawsuit in Illinois (Margo Phillips v. Double Down Interactive LLC). The plaintiff claims that *DoubleDown Casino* is operating unlawful gambling devices, that after purchasing virtual credits, she bet and lost more than \$1,000, and that the company should repay the losses suffered by all those in the lawsuit. The defendant claims that the games are designed to encourage players to purchase and wager chips for the chance to win additional chips, and that these are things of value. The claim that virtual chips are things of value is stated because *DoubleDown Casino* sells millions of dollars of chips, it awards chips that grant additional free plays, and consumers can buy and sell *DoubleDown Casino* accounts on the secondary market. The outcomes of games are based on chance with no player skill involved. The court case is pending.

In 2012, the Belgium Gaming Commission presented a royal decree to the Belgium Government to grant it authority to start regulating social casino games (Dayanim, 2015). This defined social casino games as games that involve the placement of a stake and that involve chance. Licensing requirements were imposed on games that allow players to spend more than £100 per month. In 2015 a social games developer was forced to make changes to its game to prevent Belgian players from accessing elements of the game (Gaming Intelligence, 2015). The strategy game, *Game of War*, was considered to offer a number of elements more commonly found in games of chance, which the Belgian Gaming Commission said encourages players to spend more money in an attempt to speed up progress when playing. Numerous social casino game operators have been included on a blacklist of online gambling companies and a separate blacklist has been proposed specifically for social casino game sites. The BGC's concern is reported to focus on underage gambling, as the games make it difficult to monitor the age of players, level of addiction and spend volumes (Harris Hagan, 2014).

The Japanese Consumer Affairs Agency has also taken action against games in which players spend virtual currency to win particular items, following reports that children were spending large amounts of money in an attempt to obtain these items (De Vere, 2012). These 'gacha' features were found to

unjustifiably mislead consumers and encourage gambling and resulted in gaming operators introducing self-regulations (Toto, 2012). These self-regulatory measures included clearly stating in the game estimates of how much money it would cost to obtain specific items, tracking items to avoid illegal transactions, banning transactions between players, and banning features that closely resemble gambling such as bingo.

South Korea has attempted to regulate social casino games through its Game Industry Promotion Act and in August 2014 all financial transactions to Facebook games were banned and games were blocked (Angioni, 2014). The legislation states that to legally offer games to South Korean citizens, game developers must pay a state fee and submit an application to have their products reviewed and rated by the Game Rating and Administration Committee. The intention is to prevent minors accessing games with gambling-themed content, but the Act effectively made all social games illegal since they did not differentiate between games. Despite this ban, SuperData estimated that social casino games would generate US\$123 million in revenue from South Korea in 2015 (SuperData, 2015).

The Maltese Lotteries and Gambling Authority (LGA) asked the national Parliament to regulate all digital games with prizes by the end of 2014 (LGA, 2014). The scope of these regulations would be to regulate and protect players participating in games where money or money's worth (including virtual currencies) could be won, and where the result of the games is highly dependent on the skill of the player. In January 2015, the LGA issued a consultation document asking for the industry's view of the regulated market for the sector, noting concerns about the lack of specific regulation and that although consumer legislation covers certain facets of the games, specific regulations or guidelines may be required. The LGA currently regulates games of chance with prizes and games of chance and skill with prizes, but not games that do not provide the possibility for participants to win a prize. LGA's executive Chairman stated that:

"The notion that a participant in a game can be lured by the possibility of monetary gain underpins the LGA's interest in this sector from a regulatory point of view...We feel there is a concern due to the occurring monetary transaction which can be susceptible to various forms of crime. It is our intention to ensure that the consumer is adequately protected and that the gaming operation itself is fair and secure with respect to the participant." (CSB Group, 2015).

Although most jurisdictions have declared that social casino games and other gambling-themed games do not constitute a gambling activity if there is no opportunity for a prize of value to be awarded and the games can be played for free, these are still the subject to considerable regulatory consideration. Regulation of simulated-adult activities is not without precedent. Candy or chocolate cigarettes have been restricted or banned in many countries including Australia, Canada, the UK, Finland, Norway, Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (Klein & St Clair, 2000). A 2003 resolution of the World Health Organisation Framework Convention on Tobacco Control included a recommendation to prohibit the production and sale of candy and toy tobacco products that may appeal to minors (World Health Organisation, 2003). Similarly to candy cigarettes, social casino games closely resemble gambling, and the action of using these is very similar to gambling, with the absence of monetary payment and rewards. As such, by the same reasoning used above, use of social casino games by children may make gambling more appealing to minors.

Concerns regarding social casino games are related to the money that is still deposited, particularly if there is a black market or way to transform digital/virtual currency into an item of worth. Alternatively, players may perceive that monetary gain is possible. Minors are still able to access gambling-themed games and the games may be played excessively, potentially to an extent causing similar problems as disordered gambling. Most game operators do little to protect against vulnerability and addiction of

gamers. In fact, 2.3% of social game players contribute to all player spending and the top 10% of payers (by revenue) contribute 64% of total revenues (Swrve, 2015). This indicates that some players are spending considerable amounts on these games. Finally, the lack of transparency in games means that gamers may not be aware of the rules of the game and the role of skill versus chance. Some of these elements are regulated under non-gambling specific regulations, such as general consumer protection acts and specific regulations for online or mobile games and applications. However, many gambling regulators internationally are watching the developments in the gambling-themed games market closely and are also considering research findings as these become available to inform on the extent of gambling problems as well as exposure of minors to gambling themes that may be created by these games.

Summary – Are gaming and gambling converging, in what ways and to what extent?

- It is clear that the products within gaming and gambling industries are converging in multiple ways.
- To be legally defined and classified as gambling, an activity must require a monetary wager, be determined mostly by chance, and offer a prize of value.
- Games in which payment is optional, are determined primarily by skill, and/or do not award prizes of value would not be classified as gambling activities, even if they appear to resemble or simulate these.
- Gambling products are increasingly incorporating gaming themes and elements, primarily in an effort to engage with a younger audience.
- It is possible to place wagers on eSports or video gaming tournaments or bet on the outcomes of social and video games that are played personally, or between players, including the bettors. Availability of this type of betting is still somewhat limited in Australia and is generally restricted to those over the age of 18, although this may not be enforced.
- Betting or participating in tournaments based on skill games may not be classified as gambling, for example, playing tipping competitions with monetary prizes, or fantasy sports.
- Gambling themes have been increasingly incorporated into games, reflecting the popularity and appeal of these themes across audiences.
- Social casino games simulate gambling, are based on or interact with social networks, are free to play (but allow in-play purchases), and do not award prizes of value. These are among the most popular and profitable genres of social games. These games are generally not age-restricted.
- Practice or demo games are free-play versions of products offered by gambling companies. These are required to be an accurate representation of the product and are intended to allow potential customers to experience the game without risking any money. They are largely regarded as advertisements for gambling within Australia, so that marketing of these games is restricted.
- Many online, video and social games contain gambling elements within a larger game context. These may include gamers playing a slot machine, or other casino or card games to win

virtual currency for use within the game. These gambling elements may not be clearly labelled within the game's description.

- There is an increasing convergence between gambling and game operators. Social casino games may be offered as a separate product to customers, or be linked directly to a gambling product (online or land-based). This convergence may allow gambling operators to market their gambling products to a new consumer base of social casino game players, learn about customer preferences and game play habits and continue customer engagement and brand reinforcement when customers are not gambling.
- Social casino games and gambling are often played by the same people, which suggests some overlap in these markets.
- There have been serious considerations within Australia and internationally of whether social casino games should be regulated as gambling activities. In particular, the impact of these games on young people and those vulnerable to developing gambling problems has been considered.
- There is no regulation specifically developed for gambling-themed games currently within Australia.
- Gambling and gaming are still distinct activities, although they have overlapping themes, game features and structural characteristics. Gambling operators are likely to continue to use gaming themes to appeal to younger markets and gaming operators are likely to continue to use gambling themes as these appear to be highly popular with a wide audience.

To what extent are young people being exposed to gambling-like content through games?

Young people's use of technology

Australian children and young people are avid users of the Internet and SNS (e.g., Facebook, YouTube). Australian adolescents are highly active online; 82% of those aged 14-17 years see the Internet as at least very important in their lives, while half rate Internet access as extremely important and 72% go online more than once a day (ACMA, 2013, 2014). Current technology provides an unprecedented opportunity for young people to access and engage with games and online activities in their natural environment. Smartphone use among young Australians is close to saturation. In 2013, 89% of young people owned a smartphone and 83% downloaded an app, at a rate 30% higher than older age groups (ACMA, 2013). Adolescents are increasingly accessing the Internet outside of the home, with this increase likely associated with the growth in popularity of portable Internet accessible devices, use of prepaid mobile phone services, and increased provision of free public Wi-Fi. The majority (90%) use the Internet for entertainment, with Google, Facebook, and YouTube among the most popular sites visited (ACMA, 2014).

The majority of Australian adolescents are using SNS and exploring different types of content offered through these platforms, particularly those with entertainment elements such as user-generated content and professional online video content (ACMA, 2014). In a survey of 561 Australian adolescents (aged 12-17 years) conducted in 2014, 99% reported using social media, most commonly Facebook (87%), YouTube (70%), and Instagram (47%) (Gainsbury, et al., 2015a). Most social media users (82%) used these platforms daily and older adolescents were more likely to report frequent use.

Over one-third (37%) spent over an hour using social media on a typical day. Popular SNS activities among young people include playing games, which are often visible to their own online connections (ACMA, 2013). Among young Australians (aged 14-19 years), the most common reasons to use SNS were to catch up with family and friends, to share photographs or videos, and to get information on news and current events (Sensis, 2014). Just under half (47%) reported using SNS to play games, and this age bracket had the highest reported use of gaming on these sites. Social gaming is highly popular; an Australian survey in 2012 reported that 69% of people playing social games on Facebook reported social games as their primary activity on social networks, ahead of activity posts, sharing photos, and keeping up with friends' profiles (Wenkart, 2012).

A common criticism of SNS in general is that it lacks effective measures for implementing and enforcing age verification and restrictions. Age restrictions exist for many types of digital media, including film and television; however, there are few imposed regulations on content that is viewable or downloadable on the Internet, in part due to inherent difficulties in regulating the Internet. Social casino games are freely available for download on SNS, prompting critical debate in some jurisdictions (e.g., South Australia) regarding the need for restrictions to prevent use by young people. Several SNS have developed guidelines and policies regarding advertising and content that can be targeted to children. Facebook and MySpace, for example, require that registered users are over 13 years, which is consistent with US Federal Law, specifically the Children's Online Privacy Protect Act, COPPA, which protects a child's personal information from being collected and shared. However, many SNS have no age verification measures and it is very easy to create an account with a false birthdate. Other SNS, such as Twitter, make no attempt to verify the age of users or limit marketing and promotions to adults.

Several studies have shown that age restrictions on SNS have significant limitations. A 2012 survey of 1,000 US parents found that 38% of youth on Facebook are under the 13-year-old age requirement, and that 4% of these underage users were 6-years-old or younger (Minor Monitor, 2012). Approximately 30% of youth spent two hours or more per day on Facebook, making them likely to be exposed to a wide range of promotions and paid advertisements for gambling. A study of over 25,000 European youth reported similar results, with 38% of 9-12 year-olds using social networking sites (Livingstone et al., 2011). Youth who create social media accounts using fake birthdates are likely to represent themselves as being of adult age, with the consequence that they will be exposed to adult content. On this basis, there is evidence to suggest that young people who use SNS, particularly those who misrepresent their age level, may be exposed to gambling products and services.

Young people's use of gambling-themed games

Gambling-themed games are often based on SNS, such as Facebook, in part due to the high number of active users on these platforms, including young people. They are also easily accessible through mobile apps. Interviews with representatives of the social casino game industry and industry reports claim that there is little evidence that young people are disproportionately attracted to social casino games, that very few children play their games, and that social casino game operators do not directly market to children (Gainsbury et al., 2015a; Harvest Strategy, 2014). Authors of a report commissioned by the International Social Games Association claim that over 99% of social casino game players are over the age of 18 years and less than 1% of players under the age of 18 spend money on these games (Harvest Strategy, 2014). Based on data provided by social casino game operators, which included Australian customers, on average those aged less than 18 years spent US\$122 in the month of May 2014, and paying youth players spent over 300 minutes per month playing these games. During this time, two players reportedly aged 15 years spent on average approximately US\$2,258. However, the authors also note that they did not have access to the raw data to verify these claims, thus limiting the confidence that can be placed in these analyses. The

authors concluded that the youth market is insignificant for social casino game operators, that these games represent no threat to youth, and that any further discussions of potential problems associated with these games is 'moral panic' (Harvest Strategy, 2014).

There is an emerging literature regarding young people's use of gambling-themed games, although this is still quite limited. A UK survey found that 15% of children between 11 and 16 years of age had played a social casino or practice game within the past week, usually through Facebook (Ipsos MORI, 2009). A follow-up survey in 2012 found use of social casino games was slightly lower, with one-in-ten youth playing these games weekly, with no differences across age groups (Parke et al., 2013). Boys were more likely than girls to play social casino games, particularly boys who self-reported low academic achievement and attending schools in rural as opposed to urban locations. Children in single-parent households and who reported their parents had a permissive attitude towards gambling were also more likely to report using social casino games than children in two-parent households or with non-permissive parents, but no differences were found based on family affluence or parental working status. A series of focus groups with youth in the UK found that gaming was a highly popular activity and some of the popular games played contained gambling themes, mostly commonly games with optional or peripheral gambling-themes (Carran & Griffiths, 2015).

A study of college student athletes in the US (N=23,000) found that 28% of males and 10% of females played gambling-themed games during the past year via social media sites (Paskus & Derevensky, 2013). An earlier study of college students in Canada, the US, and Hong Kong reported that 50% of males and 35% of females had played online gambling-themed games (McBride & Derevensky, 2009). In a Canadian study, Meerkamper (2010) found that 33% of youth (aged less than 18) had played these games.

A study of 1,287 Australian high school students aged 12-17 years found that 13% of respondents had played simulated gambling games in the past 12 months and 32% reported playing these games at least once in their lifetime (King et al., 2014). In terms of the types of games played, 26% had played video games with gambling themes, 10% had played Facebook social casino games, 6% had played smartphone apps, and 5% had played practice games. The most popular types of simulated gambling activities were card games, followed by gaming machines, and sports betting-type activities.

Australian study on social casino games and gambling

A recent study has been conducted by Gainsbury, King, Delfabbro, Hing, Russell, Blaszczynski, and Derevensky (2015a) led by the Centre for Gambling Education and Research at Southern Cross University. This is the most comprehensive study to date of the impact of social media and social casino games on gambling and the results are highly relevant to the current review.

Based on an online survey of 561 adolescents (aged 12-17 years) taken from a panel who were representative of the Australian population based on age, gender and State, 23% reported using social casino games. Male adolescents (27%) were significantly more likely than female adolescents (19%) to play social casino games. Social casino game users were significantly older than social casino game non-users (Mean age = 15.39 vs 14.85). A greater proportion of adolescents who reported gambling played social casino game compared to non-gamblers (73% vs. 12%). Most respondents (79%) reported engaging in one to three sessions of social casino game use in a typical day and spending half an hour or less (75%) playing these games per typical day in which they played these games. The most common reasons for playing social casino games reported were for the excitement and fun (80%), to pass the time or avoid boredom (76%), and for the competition and challenge (72%). Most adolescents played social casino games via Facebook, followed by using apps, websites and Google+. Games were played through laptop and desktop computers, as well as smartphones and tablets. The social casino games appear to be used as part of a range of

entertainment activities; respondents noted that if they were not playing these games they were likely to be surfing the Internet, playing other online or video games, using social media, or watching television or movies.

A relatively high proportion of respondents (40%) had spent money on these games. This is substantially higher than the 1-2% of spending users typically reported in the literature (Morgan Stanley, 2012) and the small proportion of users under 18 years of age claimed to make purchases by the social casino game industry (Harvest Strategy, 2014). Most paying users (69%) spent less than \$20 per purchase, and the majority of paying users made purchases weekly or monthly. The adolescents reported spending money to avoid waiting to earn credits, to get ahead in the game, or to take advantage of a promotional offer. The majority of respondents (77%) agreed that the cost of the purchase was made clear to them before they spent any money.

Adolescents were also playing practice or demo games provided by gambling operators. Over one-fifth (22%) of adolescents surveyed reported playing these games in the past 12 months, and these were more likely to be older (mean age = 15.46 years) and to be gamblers than non-gamblers (76% vs. 10%). The reasons reported for playing practice games were similar to those for social casino games, for excitement and fun, to pass the time and avoid boredom, and the competition and challenge. Although this sample was not representative of the Australian youth population, these findings provide some evidence that Australian young people are involved in gambling-themed games. This occurs through gambling-themes depicted in video and computer games, as well as games where the central focus is gambling-themed, such as social casino games via Facebook and mobile apps.

Summary of studies on youth engagement with gambling-themed games

Table 1 presents a summary of six quantitative studies of youth simulated gambling (use of gambling-themed games in their various forms). In terms of research design, five studies involved surveys administered at a single time-point only. Therefore, no research study has directly examined how early exposure to simulated gambling may impact on the likelihood of gambling problems over time or in the transition to adulthood. Studies have generally focussed on younger adolescents (12 to 15 years) over older adolescents, despite the latter group being closer to the legal age requirement for gambling. Although familial influences have been examined indirectly (e.g., Allen et al., 2008), none of the studies included parent-report surveys as a means of corroborating youth self-report of gambling activities (if known) or to examine parental gambling practices or gambling addiction status.

Measurement of youth gambling involvement has been examined inconsistently across studies, with limitations in the following areas: (1) the scope of gambling activities, (2) measures of frequency of involvement, (3) the prevalence of associated gambling problems, and (4) the relationship between simulated gambling and problem gambling. With regard to (1), there were different approaches to measurement of gambling, including the specific types of simulated gambling involvement. This may reflect the broad range of available digital activities, their relative popularity across regional contexts, and possible confusion in classifying certain online activities across media platforms (Gainsbury, Hing et al., 2014). With regard to (2), measures of the frequency of gambling involvement also varied across studies. For example, time-scales for gambling activity have included 'in the past week' (Elliot et al., 2012; Griffiths & Wood, 2007), 'a typical week in the last 3 months' (King et al., 2014), and 'in the last 12 months' (Allen et al., 2008). In terms of (3), the prevalence of problem gambling, as assessed by standard measures, was identified in four studies as being very low (<1%), thereby limiting sub-analysis of potential clinical cases. Finally, in terms of (4), the extent to which simulated gambling occurred within subgroups who endorse problem gambling indicators was not clear or not reported.

Table 1: Empirical studies of youth participation in simulated gambling activities (replicated from King and Delfabbro, in press)

Study	N	Population	Age range (years)	Research design	Simulated Gambling types	Prevalence SG in lifetime	Problem gambling prevalence	PG rate among SG group	Country
Allen et al. (2008)	129	Mixed	15-24	Focus groups	Online casino games; Video games	8.3%	NR	NR	Australia
Elliott et al. (2012)	144	Online users	18-20 ^a	Cross-sectional survey	Poker video games	0%	NR	NR	US
Griffiths and Wood (2007)	8,017	School students	12-15	Cross-sectional survey	Online demo modes; free 'instant win' games	2.3%	<1%	NR	UK
†Griffiths and Wood (2007)	621	Online players	NR	Cross-sectional survey	Free 'instant win' games	24%	34%	5%	UK
Ipsos MORI (2009)	8,958	School students	12-15	Cross-sectional survey	Bebo/Facebook games; Free online gambling sites; Other	28%	2%	NR	UK
King et al. (2014)	1,287	School students	12-17	Cross-sectional survey	Internet sites; Social media/ smartphone apps; Video games	22%	<1%	<1%*	Australia
Volberg et al (2008)	1,555	School students	12-17	Cross-sectional survey	Online gambling-type games	19%	<1%	NR	Canada

PG: Problem or pathological gambling; SG: Simulated gambling; NR: Not reported. †This row presents a subanalysis within Griffiths and Wood (2007). US: United States. UK: United Kingdom. ^aThis study was included because the 18-20 year old sample was considered 'underage' in the regional context. *NB: 57% of simulated gamblers endorsed at least one indicator of PG.

Advertising for gambling products within games

Gambling-game players may be exposed to advertisements on SNS or other websites based on their Internet history, which indicates their interest in and use of gambling-themed games. This may include pop-up advertisements, banner ads online, and side-bar advertisements on websites. Some of these may be blocked by advertisements and pop-up blockers on Internet browsers. However, recent Australian research indicated that most adults (76%) and adolescents (77%) do not use ad-blocking software (Gainsbury et al., 2015a).

Social casino game and gambling operators may target people who play social casino games to be shown online advertisements, because of their demonstrated interest in gambling-themed activities. There are some clear examples of gambling-games which directly market gambling products and venues. The most clearly visible are the gambling venues which offer social casino games that are linked with their loyalty programs or which allow credits to be redeemed for in-venue prizes, such as *myVEGAS*. Within Australia there is only a small number of gambling venues (clubs in NSW and QLD) which offer gambling-themed games directly to customers and these are restricted to players over 18 years of age. However, many online wagering sites also run tipping competitions and practice versions of their wagering sites, which allow consumers to engage in betting-like games, without spending any funds. These could be considered advertisements for gambling products given the links available to the gambling sites and the branding and company name being prominent within the sites.

There is limited research on the extent of gambling advertisements within games in Australia. Interviews with individuals who played gambling-themed games have suggested that playing gambling-themed games could increase exposure to gambling-related advertising and that this could potentially encourage people to gamble (Gainsbury et al., 2015a). Social casino games also encourage users to share their updates and status and invite online connections to play, and users are often rewarded with credits for such social sharing. This results in social casino game notices appearing in the newsfeeds of their connections, which was reported by several interviewed participants as influencing their take-up of social casino games. Participants also described ads often appearing in the side bar of Facebook and promoted within App stores. Ads are often accompanied by promotional offers of free credit for new players. Participants also described several gambling venues encouraging them to use SNS or social casino games to cross-promote the venue.

The interview results were consistent with survey findings which showed that two-thirds of adolescents and over half of the adults surveyed agreed that social casino game operators encouraged them to try gambling (Gainsbury et al., 2015a). Among 561 Australian adolescents surveyed, only 9% of those who played social casino games reported migrating to gambling as a result of advertisements for gambling received through social casino games. One quarter of the adolescents who played social casino games as a result of gambling reported that advertisements for social casino games received as a result of gambling motivated their switch in activities. This indicates that young people are exposed to gambling advertisements when playing social casino games, as well as social casino game advertisements when gambling and that, for a small proportion of players, these advertisements do influence their behaviour.

Practice sites provide a clear mechanism for gambling operators to advertise, including to youth. In Australia, the advertisement of .net sites faces similar restrictions as offshore gambling sites, that is, they are not permitted. This is because practice sites are classified as comparable to Internet gambling and promotions for these sites are classified as illegal advertisements for Internet gambling (DBCDE, 2013). Consequently, practice sites for legal gambling sites are required to adhere to advertising codes of conduct such as not depicting unrealistic expectations of winning or appealing to children and vulnerable populations. However, advertisements for .net sites appear online in the form

of pop-up advertisements and banners visible by young people. Practice sites contain clear links with gambling sites, most commonly through similar site names and activities featured. Among 122 Australian adolescent practice game users surveyed, 50% agreed that practice game operators encourage users to try gambling (Gainsbury et al., 2015a).

Summary – To what extent are young people being exposed to gambling-like content through games?

- Young Australians are highly active online and participation in gaming is a very popular activity.
- Despite industry statements that young people are not a significant market for social casino games, research from Australia and internationally indicates that a significant proportion of young people play gambling-themed games.
- Recent Australian studies of adolescents found 13-23% of respondents reported playing games with gambling themes in the past 12 months. Males and older adolescents are more likely to engage in these games.
- Young people may be exposed to additional advertising for gambling products and gambling-themed games as a result of engaging with gambling-themed games.
- Online advertisements for gambling products are present on social media and popular websites. Young people may be exposed to advertisements for offshore gambling sites.
- Gambling themes are somewhat common in games and are often not well labelled.
- Engagement with gambling content online, including participation in games with a predominant gambling theme, may increase the extent to which young people receive targeted advertising for gambling products.

What influence do gambling-like elements and simulated gambling in games have on young people's gambling behaviour?

As highlighted in Table 1, most of the literature base on simulated gambling is composed of cross-sectional studies and therefore it is unable to draw causal statements. Nevertheless, studies of young people indicate: (1) there is an association between gambling with money and playing social casino games, and (2) problem gamblers are significantly more likely to play social casino games than non-problem gamblers (King et al., 2012; McBride & Derevensky, 2012). In a study with British young adult online gamblers, 40% cited advertising and 21% cited practice games as a primary reason to gamble online (Griffiths & Barnes, 2008), demonstrating the potential negative impact of exposure to online marketing cues and online gambling games. Another UK study found that participation in social casino or practice games was found to be a significant predictor of children's gambling as well as problem gambling behaviour (Ipsos MORI, 2009). Participation in social casino games was higher among children who also gambled as compared to youth who did not gamble (51% vs. 18%), and most likely among those who reported engaging in a variety of gambling games. Similarly, a study of college students in Canada, the US, and Hong Kong found that there was an association between playing on practice gambling-themed sites, actual gambling, and problem gambling (McBride & Derevensky, 2009).

A study of 1,287 Australian high school students aged 12-17 years found that participants who had played simulated gambling games were three times more likely to have gambled via card games and scratch tickets, and five times more likely to have wagered on races (King et al., 2014). About one in 10 adolescents reported having played simulated gambling games on Facebook and one in 10 had tried gambling-themed applications on a smartphone. Although problem gambling on the whole was rare in the sampled population (1%), all indicators of problem gambling were significantly more prevalent among those who participated in simulated gaming. Preoccupation with gambling or future intention to gamble was reported by 40% of those who played simulated gambling games, as compared to 20% of those who did not play simulated gambling games. Exposure to or past involvement in simulated gambling activities was a significant predictor of at-risk or problem gambling status. However, it is possible that the majority of 'at risk' gamblers are merely experimenting with gambling with no intention of continued engagement, and the relationship between social casino games and gambling problems does not indicate a direction of causality.

A study of 465 Canadian university students found that 55% of gamblers without problems and 83% of problem gamblers reported playing social casino games compared to only 9% of those who did not gamble for money (McBride & Derevensky, 2012). As with the other reported surveys, these findings are correlational and do not provide evidence of causality. However, the available findings suggest that social casino games may be a feature of some young people's emerging views and attitudes towards gambling. Such studies conclude that this potential influence deserves further research attention and follow up within prospective studies to delineate relationships over time.

In an empirical study, participants (n=80, 84% aged between 18 and 24 years) were randomly allocated to play free-play modes on computerized roulette (Bednarz, Delfabbro, & King, 2013). Players who had the opportunity to play for free subsequently bet significantly more per spin and wagered more credits when playing with money. Participants who had lost in the free-play games were less likely to persist in playing for money. Furthermore, participants who had played for free who were more likely to consider themselves to be more proficient at roulette than those who had not played for free. Overall, the results suggest that playing gambling-games for free may promote greater risk-taking in subsequent money-based gambling among young adults. This may be through experiencing wins, including without monetary rewards, and perception of gambling skill or luck being great, which may translate into gambling wins. However, as this was an experimental study, the amount of money involved may have been perceived as trivial to participants and therefore affected the nature of risk. Furthermore, the participants were university students, who are not always representative of young people more broadly (Gainsbury, Russell, & Blaszczynski, 2014).

Australian study on social casino games and gambling

In the recent survey of 561 Australian adolescents, those who played social casino games (n=132) also indicated some interest in gambling activities (Gainsbury et al., 2015a). Over half (54%) stated that they played social casino games to make money, although this motivation is not understood as the games do not have any monetary rewards or incentives and perhaps reflects confusion among participants about the games. Almost half of social casino game users (49%) were not interested in gambling for money on their favourite social casino games, although 44% were somewhat interested and 7% were very interested in this. More than half of the social casino game players agreed that social casino game operators encourage them to try gambling (67%). These results indicate that there is some interest in gambling among young social casino game players, as well as a perception that game operators encourage gambling online.

When asked about their gambling, most social casino game users reported that their social casino game use had no impact on their desire to gamble for money (55%), or their actual gambling behaviour (62%; Gainsbury et al., 2015a). However, 29% reported that their desire to gamble had

increased and 28% reported that their gambling had increased as a result of these games. Males were significantly more likely to report that social casino games had increased their desire to gamble, but not their actual gambling.

When asked whether they had ever gambled as a result of playing a social casino game, 27% of respondents stated that they had done so, with males more commonly reporting this as compared to females (37% vs. 13%). The most common reasons reported for gambling as a result of social casino game play was to win money (66%) and over two-fifths (43%) thought that they would have a good chance to win money gambling. Other motivations were to challenge themselves, because gambling is easier to play, and a better game experience. Among those who played the same type of social casino games and gambling activities, 53% had played the social game first, indicating a possible transitional mechanism from social casino games to gambling. These results indicate that for the majority of young people who play social casino games (around two-thirds) this has no impact on their gambling. However, for just under one-third, their gambling did increase and they self-reported that this occurred as a result of playing social casino games. Young people appear to be focused on the possibility of winning money gambling and it is possible that social casino games increase irrational beliefs in future success at gambling activities.

Similar results were found for adolescents' use of practice games provided by gambling operators. The most common reasons were for entertainment and fun, to pass the time and avoid boredom, and for the competition and challenge. Half of the users (50%) agreed that operators encourage practice game users to gamble. One-quarter (26%) of those who played practice games reported having gambled on the same type of activity and 59% had played the practice game first. One-third (34%) thought it somewhat or highly likely that the practice games would increase their success at gambling. Similarly, among all adolescent practice game users, 31% thought that these increased their desire to gamble and 24% thought that they had increased how much they actually gamble. However, the majority of practice game playing adolescents reported no impact or a decreased desire and actual gambling in response to these games. These results are also concerning given the close links between practice games and online gambling. For some young people, playing practice games may increase their gambling, and of concern, may increase illusions about success at gambling.

Just under one-quarter (24%) of social casino game playing adolescents surveyed reported playing social casino games as a result of gambling (Gainsbury et al., 2015a). They were most likely to do so for competition among other players. Social casino games were described as just as much fun as gambling and a better game experience by almost half of these users (47%). This indicates that for a subset of young people, migration occurs away from gambling to social casino games. It is possible that social casino games may decrease gambling among this group as they have the same experience and enjoyment without spending money. A small proportion of social casino game players (16%) reported that these games decreased how much they would like to gamble and 9% reported that their actual gambling decreased as a result of playing the games. This indicates a mechanism in the opposite direction of most reports. That is, for a subset of young social casino game players, this activity actually decreases gambling and may have a preventative impact for potential harms.

When young people who had reported at least one negative experience related to gambling were asked about the impact of games on any gambling problems they may experience, most reported the games had no impact on their problems (45%). However, 29% of adolescents who indicated some negative consequences of gambling reported that social casino games had been a contributing factor, and 35% reported the same for practice games. A smaller proportion reported that social casino games (15%) and practice games (9%) had decreased their problems. These results indicate that gambling-themed games can worsen problems among those already impacted negatively by gambling. However, the positive impact of social casino games and practice games is also important to note and explore further in future research.

Problematic gaming and disordered gambling

As previously discussed, games, including video games and online games, are a highly popular activity among young people. However, there have been increased reports of people, particularly youth, experiencing problems associated with excessive game use. Problem online video gaming (also referred to as problem video game use, pathological gaming, excessive gaming) has been proposed as a diagnostic category for behavioural addictions based on increasing evidence of the similarities between problem gaming and the recognised disordered gambling (King, Haagsma, Delfabbro, Gradisar, & Griffiths, 2013). Specifically, Internet gaming disorder was introduced into the appendix of the DSM-5 in May, 2013, as a condition warranting further study. Problematic online video gaming is characterised by the excessive and uncontrolled use of online games to the extent that it significantly interferes with daily life resulting in negative psychosocial and physical consequences (Porter, Starcevic, Berle, & Fenech, 2010; Weinstein, 2010). Similarly to disordered gambling, problematic gaming appears to stem from divergent pathways and can be distinguished from excessive use by negative psychosocial consequences including disruption to relationships, school or employment, sleep, eating and exercise as well as depression, anxiety, stress, aggression, and physical illness (King, Delfabbro, Zwaans, & Kapsis, 2013).

Preliminary evidence suggests that disordered gambling and problematic online gaming have similar neurochemical bases, behavioural markers, and patterns of comorbidity (Fong, Reid, & Parhami, 2012; Gupta, Nower, Derevensky, Blaszczyński, Faregh, & Temcheff, 2013; Mihaylova & Kairouz, 2010; Villella et al., 2011; Weinstein, 2010). As a consequence, these similarities have led to the suggestion that excessive and/or compulsive use of these activities online may be related and/or associated with similar etiological processes. One longitudinal study of problematic gamers found several personality characteristics that seemed to act as risk factors. Specifically, youth who were more impulsive, had lower social competence and empathy and poorer emotional regulation skills were more likely to become pathological gamers (Gentile et al., 2011). These are similar to characteristics of young people who are more likely to exhibit gambling problems. A survey of Australian adolescents found about 4% experienced substantial Internet gaming problems which appear to co-occur with and predict severity of disordered gambling (King, Delfabbro et al., 2013). This is similar to findings from international studies (McBride & Derevensky, 2009; Villella et al., 2011).

Prevalence rates seem to be higher in males than females, and problematic gaming has received most attention in relation to adolescents and young adult populations (Haagsma, Pieterse, Peters, & King, 2013), however it is unclear whether prevalence rates are higher in youth than in adult populations, primarily because few methodologically robust studies have been conducted. Online games are easily accessible, can be played in real world isolation, or with online connections, have immersive and high quality graphics, and allow continual game play through constant updates. These features may make online games potentially more likely to be used in a problematic manner than offline games.

Existing studies have not yet applied standard diagnostic criteria to assess the proposed Internet Gaming Disorder. Various criteria have been developed and used including those based on pathological gambling, disordered gambling, impulse control, and other criteria with no agreed number of criteria to meet diagnosis (King, Haagsma, Delfabbro, Gradisar, & Griffiths, 2013; Petry et al., 2014). There has been debate as to whether problem gaming represents a primary disorder, contributes to the development of other mental health disorders, or represents a secondary disorder (Yau, Crowley, Mayes, & Potenza, 2012). Wood (2008) has criticised the notion of Internet game addiction and suggested that this excessive behaviour may be the result of ineffective time management skills or underlying personal problems, rather than inherent addictive properties of the games. Similarly, West's (2006) comparative analysis of all known addictive activities ranked users of video games as one of the least likely to become addicted. In contrast, Gentile et al. (2011) conducted

a longitudinal study of pathological video gaming in youth and concluded that although children do use games as a coping mechanism, it is not simply a symptom of other problems. Youth who become pathological gamers ended up with increased levels of depression, anxiety and social phobia, although these disorders resolved when gaming was addressed, suggesting that comorbid mental health issues may be a consequence, rather than a cause of problematic gaming.

Further research is required to understand problematic gaming more completely, including whether this should be recognised as a distinct mental health disorder. It is also important to investigate the relationship between problematic gambling and gaming, particularly among young people who appear to be more vulnerable to developing both disorders. Although problematic gaming was not the focus of this review, it should be considered in the development of policy responses to gambling-themed games.

Summary – What influence do gambling-like elements and simulated gambling in games have on young people’s gambling behaviour?

- Although still preliminary, research indicates that there is a positive association between gambling, problem gambling and playing social casino games.
- Participation in social casino games is higher among young people who also gamble.
- Young people who play social casino games have higher rates of problem gambling.
- There is some research evidence suggesting that playing gambling-themed games may increase confidence in winning and persistence in gambling.
- Recent Australian research based on a survey of adolescents found that:
 - The majority of social casino game players surveyed agreed that social casino game operators encourage them to try gambling.
 - Most adolescent social casino game players surveyed in a recent Australian study reported that these games had no impact on their desire to gamble, or their actual gambling; although a notable proportion of youth (30% of 127 youth surveyed who played social casino games) surveyed reported increased gambling as a result of these games.
 - A proportion (9%) of these social casino game players reported gambling less as a result of social casino games, and 62% reported no impact of their experience with social casino games on how much they gamble.
 - Among the 25% (n=32) who had played social casino games as a result of gambling, almost half (47%) of these respondents reported that the games were as much fun as gambling.
 - For those who moved from social casino games to gambling (n=35) this was commonly motivated by the opportunity to win money, and was more common among males.
- For most young people, gambling-games have little impact on their gambling, but a small proportion may increase in their interest and participation in gambling as a result of these activities.

- Problem online video gaming has been proposed as a diagnostic category for behavioural addictions based on increasing evidence of the similarities between problem gaming and the recognised disordered gambling. Problematic online video gaming is characterised by the excessive and uncontrolled use of online games to the extent that it significantly interferes with daily life resulting in negative psychosocial and physical consequences.
- Preliminary evidence suggests that disordered gambling and problematic online gaming have similar neurochemical bases, behavioural markers, and patterns of comorbidity. It has been suggested that these activities may be related, or share similar etiological processes.
- Young people who excessively engaged with online gaming may also be at risk for developing gambling-related problems.

What are the likely long term consequences for young people exposed to gambling-like experiences through gaming?

Currently there is a paucity of research on the consequences of playing gambling-themed games, including the short- and long-term repercussions. It is known that people who play gambling-themed games also report engaging in online and offline gambling (Gainsbury, Russell, Hing, 2014; King et al., 2012; King et al., 2014; McBride & Derevensky, 2012; Parke et al., 2013). However, it is not clear whether gambling-themed games motivate a migration to gambling activities, or vice versa, or if a common interest in gambling-themes motivates both activities.

Normalisation and increased uptake of gambling

One of the theorized consequences of gambling-themed games is the normalisation of gambling behaviours (Griffiths, 2010; Moore & Ohtsuka, 1999; Parke et al., 2013). If young people play gambling-themed games they may be more likely to view gambling as an acceptable everyday activity and develop positive attitudes about gambling, transferred from their positive experiences with the games. As gambling-themed games continue to evolve, they may be difficult to distinguish from gambling activities, particularly for inexperienced users (King, Delfabbro, Kaptis, & Zwaans, 2014). This means that normalisation may occur despite the lack of certain structural parity in the two activities – for example, gambling-themed games that lack a financial element may nevertheless be successful in promoting a general message about the desirable aspect of winning at gambling in general. It has been argued that the similarity between a company's social casino games and gambling products, including common branding, themes, characters, and displays, creates confusion for users who may not be able to easily distinguish between these activities (Torres, & Goggin, 2014). In this sense, gambling-themed games may operate as a form of advertising for a different but visually indistinguishable product. This is particularly troubling when companies own and operate gambling products as well as social casino games, particularly when the same company name and branding is used.

The greater visibility of gambling messages and themes in social media may also increase awareness of gambling among young people. Familiarity by mere exposure has long been recognized in marketing and psychology for its role in shaping consumer preference. For example, children who purchase candy cigarettes were significantly more likely to have smoked tobacco cigarettes, even after controlling for parental smoking behaviour (Klein et al., 1992). Although this effect is not indicative of any causal relationship, candy cigarettes provide opportunities for children to engage in smoking-related play and expose children to the idea of smoking. Children also reported using or

purchasing these products, despite knowing that their parents would disapprove. In a similar vein, increased use of the Internet for entertainment options may build consumer familiarity with online interactions including normalizing online gambling options (Monaghan, 2009; Schüll, 2012). Consequentially, if young people view playing social casino games as acceptable and appropriate, they may be more likely to engage in gambling activities. This may explain the findings that, in a study of Australian gamblers, those who also played social casino games were more likely than non-gamers to view the benefits of gambling as outweighing the harms (Gainsbury, Russell, Hing, 2014).

Some studies of digital games provided by a company for marketing purposes ('advergames') demonstrate the impact of these activities on subsequent behaviour. In a study in which children played a less or more healthy version of an advergame, those who played the healthier version selected and ate significantly more healthy snacks after game play than those who played the less healthy version (Pempek & Calvert, 2009). Similarly, children playing advergames with healthy or unhealthy products tended to choose food intentions based on what was being advertised in the game (Dias & Agante, 2011; Hernandez & Chapa, 2010). This indicates that participation in a game with strong product branding does lead to product preference and positive attitudes that result in behavioural actions. Similarly, using candy cigarettes was associated with increased smoking among young people (Klein et al., 1992). The American Academy of Pediatrics has recommended that children should not use candy cigarettes or other look-alike products because of the way they promote the social acceptability of tobacco to children (Klein, Thomas, & Sutter, 2007). However, it is difficult to control for factors that may otherwise increase a young person's likelihood of engaging in a particular behaviour. It is likely that an interest in adult activities drives engagement with simulated forms, and that these activities do not directly cause greater engagement with unhealthy activities. The impact of young people's use of gambling-games with corporate branding has not been tested empirically.

In interviews with Australian gambling-game players, the lack of monetary prize in gambling-themed games resulted in these games being viewed as less exciting by gamblers (Gainsbury, Hing, Delfabbro, Dewar, & King, 2015). In some cases this motivated people to migrate to gambling to enhance the sense of excitement and enjoyment of their experience. Similar views were expressed in interviews with adolescents in the UK, specifically that playing practice or non-monetary gambling-themed games may become boring without real incentives and if they were winning they would want to experience actual monetary wins (Carran & Griffiths, 2015). However, these were perspectives applied to others and none of those interviewed actually described migrating to gambling for these reasons. Most of the participants interviewed appreciated that the odds in gambling are different to those in gambling-themed games and some participants stated that the two activities were not linked as the games did not accurately reflect a gambling experience.

Micro-transactions may encourage migration to gambling

No purchases are required to play in social casino games and the majority of players do not make any purchases (Gainsbury, Hing, et al., 2014). However, for those players who do make purchases, this may increase the perceived similarity between gaming and gambling (Griffiths, 2013). This was reflected in a series of interviews with Australia social casino game players who expressed the view that, if they were going to pay money, they may as well gamble so they could potentially win a prize (Gainsbury, Hing, Delfabbro, Dewar et al., 2014). Therefore, some players who initially pay to play gambling-themed games may be more likely to migrate to gambling in order to receive a financial payout.

This notion has gained some support in the finding that making payments within social casino games significantly increased the odds of social casino game players migrating to online gambling over a six month period (Kim et al., 2014). Specifically, the odds of migration to online gambling were approximately eight times greater among people who made micro-transactions on social casino

games compared to social casino gamers who did not make micro-transactions, controlling for the other predictors. However, despite in-game purchases, youth involved in focus groups in the UK differentiated between gambling-themed games and real money gambling as they knew that there were no monetary rewards from games and they were paying for the game experience (Carran & Griffiths, 2015). As such, the experience of gaming was not the same as gambling, with the latter described as both more thrilling and more stressful by different participants. The specific impact of payments for gambling-games has not been investigated in Australian youth.

Development of gambling problems

Gambling-themed games have been suggested as having a 'gateway effect' for some users, meaning that some players may develop an interest in gambling following exposure to activities and themes in games, and may subsequently develop gambling problems (King & Delfabbro, in press). It has been reported consistently that early exposure to addictive substances or activities (e.g., tobacco, alcohol, gambling) increases lifetime risk and severity of addiction to the particular object or activity (Eissenberg & Balster, 2000; Johnson, Cloninger, Roache, Bordnick, & Ruiz, 2000; Shaffer, LaBrie, & LaPlante, 2004). Research repeatedly demonstrates that individuals who begin gambling earlier in life are at greater risk of developing gambling-related problems (Fisher & Balding, 1998; Gupta & Derevensky, 2008; Huxley & Carroll, 1992; Winters, Stinchfield, & Fulkerson, 1993). Young people who play gambling-themed games are also more likely to gamble and experience problems (King et al., 2012; King et al., 2014; McBride & Derevensky, 2012), although no causal relationship has been established. Playing a gambling-themed game may initiate the process of normalisation and increase interest in gambling and participation in actual gambling activities, which may lead to the development of gambling problems later in life (Monaghan & Derevensky, 2008). Results from Australian surveys with young people have indicated that playing practice games may be associated with greater uptake of gambling and problematic gambling behaviours (Gainsbury et al., 2015a; King et al., 2014). However, it is important to note that this causal pathway has not been verified. However, further research is needed to identify the extent to which playing social games influences engagement with gambling and the development of problems.

Games may encourage gambling skill building

Gambling-themed games may represent a way for young people to engage with and 'try out' gambling activities without risking money. The interactive nature of social casino games may also provide users unfamiliar with traditional gambling some degree of confidence and transferable skills with gambling in general. In this way, engaging in social casino games may reduce perceived barriers to gambling for young people, who may also be unlikely to understand important differences between gambling and gambling-themed games and have unrealistic expectations of gambling with money.

In a survey of Australian adolescents, almost one-half (48%) of social casino game users reported that improving their gambling skills was at least somewhat important in playing these games (Gainsbury et al., 2015a). A similar proportion (53%) of practice game players reported the same motivation to play. Furthermore, 34% of the 27% who had moved from social casino games to gambling reported that they were motivated to do so after developing their skills within the games and one-third of these participants expected that their experience with social casino games would at least somewhat increase their success at gambling. Similarly, focus groups with Australian adolescents found that adolescents reported playing gambling-related video games to help acquire "the tricks of the trade" (Vardon, 2007). This suggests that gambling games may be used as a training ground for young people looking to learn about gambling. This is of concern as gambling-themed games are unlikely to accurately depict the odds of winning on a gambling activity. Therefore, young people's confidence in their 'skills' may actually represent illusions of control and distortions of their probability of success, and these misbeliefs may result in gambling losses, persistence in gambling, and potentially the

development of gambling problems (Moore & Ohtsuka, 1999). Similarly, some UK youth participating in focus groups did report perceptions that practice with gambling-themed games, including practice games, may increase their chances of winning at gambling, although these were generally limited to gambling activities where skill does play some role such as poker or sports betting (Carran & Griffiths, 2015). However, the relatively small samples used in the reported research should be considered as the number of adolescents who do transfer from gambling-themed games to gambling is quite low.

Despite the potential motivator of gambling skill building, a small scale longitudinal survey of US social casino game players found that playing these games to increase skills did not significantly predict players odds of migrating to online gambling (Kim et al., 2014). Interviews with social casino game players found that at least one player stated that he did not believe the odds within social casino games to be representative of the odds experienced when gambling (Gainsbury, Hing, Delfabbro, Dewar et al., 2014). Similarly, 21% of adolescent social casino game players reported that the general experience of playing these games was not at all similar to gambling and 9% reported that the games did not look similar to gambling sites (Gainsbury et al., 2015a). However, the majority of social casino game players did report that the games look similar to gambling sites (91%), and the general experience feels similar to gambling (80%). The extent to which young people use gambling-games to increase their gambling skills requires further investigation; however, it appears that a subset of players are motivated by this perceived advantage of greater gambling skills.

Games may influence confidence in gambling

Gambling games may influence a young person's fundamental understanding of the nature of gambling, including perceptions of chance and profitability (King & Delfabbro, in press). The similar game design to gambling activities, but overinflated payout rates may encourage players to think that they are similarly likely to win when playing gambling activities (Sevigny, Cloutier, Pelletier & Ladouceur, 2005). There is some evidence that playing free-play versions of gambling games increases self-reported confidence in gambling outcomes and risk taking in subsequent gambling sessions (Bednarz et al., 2014).

Experience with gambling-themed games may build young people's confidence in gambling success and illusions of control, which may motivate participation in gambling (Derevensky, Gainsbury, Gupta & Ellery, 2013). There is some support for this as among adolescents surveyed who played the same type of social casino games and gambling activities, 53% had played the social game first and one-third (33%) thought it somewhat or highly likely that their experience with the game would increase their success when gambling (Gainsbury et al., 2015a). These views are concerning as social casino games are generally based on algorithms designed to enhance player enjoyment, rather than reflecting probabilities of winning in gambling games.

The similarities between gambling-themed games and gambling activities may make it difficult for consumers to distinguish between these activities (Parke et al., 2013). There is some evidence suggesting that adolescents can distinguish between social casino games and online gambling and see the need to risk or stake money or material possessions as a key characteristic of gambling (Carran & Griffiths, 2015). Nonetheless, a subgroup of UK adolescents interviewed focused on the structural similarities of both games and perceived the purchase of credits with real money to constitute gambling (Carran & Griffiths, 2015). However, Australian adolescent social casino game players surveyed in 2014 reported that social casino games looked somewhat (67%) or very (24%) similar to gambling sites (Gainsbury et al., 2015a). In a case-study comparison of a social casino and online gambling slot game, substantial similarities were found in the auditory features of the games (Bramley & Gainsbury, 2014). Auditory features may initiate, maintain or reinforce play, and influence players' interpretations of play (i.e., estimation of wins) in these types of games. Further research is

needed to determine the extent to which Australian youth do perceive differences in gambling and gambling-themed games and the impact of this on their behaviours.

Reduced engagement with gambling

Early exposure may also have a protective influence on some young people. The vast number of people who play social casino games indicates that the sense of enjoyment related to these games is high, even without financial rewards. It has been suggested that free-play games (such as social casino games) may anchor the price of an activity (gambling) by encouraging customers to prefer a free version, rather than pay for the experience (Ariely, 2011). According to behavioural economic theory, these players should be resistant to paying a higher price to gamble, as they have learnt to enjoy the free version. It is also possible that exposure to gambling themes through games may reduce the allure of a restricted adult activity and allows young people to explore gambling activities without spending money. Playing gambling games may educate young people about the costs (time and money) involved in gambling, how losses occur, and potentially to understand the probabilities and role of chance in gambling outcomes. However, games would have to be specifically designed to be educational for these purposes.

A survey of Australian users found that enjoyment and excitement was rated as the main motivator for playing social casino games (Gainsbury et al., 2015a). Furthermore, Australian adolescents rated the general experience of playing social casino games as somewhat (64%) or very (16%) similar to gambling. Over half reported that winning at social casino games was similarly (52%) or more (11%) exciting than winning at gambling. This is consistent with the findings that for the majority of people who played social casino games, these had no impact on their desire to gamble or actual gambling behaviour, and for a small proportion this actually decreased. Furthermore, just under one-quarter of adolescent social casino game users (24%) reported having moved from a gambling site to a social casino game. These respondents indicated that they switched to games from gambling to have greater competition against other players, because social casino games are just as much fun and a better game experience than gambling, easier to play, can be played without spending money, and are more social than gambling. Almost half (48%) of social casino gamers who had gambled on the same type of activity reported that they had tried the game after gambling, indicating a potential migratory effect from gambling to gaming. Most of those who had gambled and played games with the same theme thought that their experience with social casino games would have no impact (42%) or was unlikely to increase their success at gambling (26%). This indicates that the majority of adolescents who engaged in gambling and gaming were aware that these are distinct activities and a subset of gamers move away from gambling towards playing social casino games.

Similar results were found in a small longitudinal study of US social casino game players, in which the amount of time players spent on these games did not significantly predict whether they would start gambling online (Kim et al., 2014). Therefore, it is possible that gambling-themed games may mitigate migration to gambling as satisfaction is achieved through these games without the need to engage in gambling. Further research is needed to investigate any potentially positive impacts that social casino game play may have on gambling. However, ethical issues would have to be carefully considered to avoid exposing young people to gambling-themed games unnecessarily.

Summary – What are the likely long term consequences for young people exposed to gambling-like experiences through gaming?

- Young people who play gambling-themed games are more likely to also engage in gambling and experience gambling problems. However, it is difficult to discern a causal direction and role of these games.

- Gambling-themed games may normalise gambling as a socially acceptable, enjoyable, and risk-free activity.
- Making payments within gambling games may increase the normalising effect and represent a barrier that, once crossed, may increase the likelihood of transitioning to gambling.
- Gambling games allow young people to engage with gambling without spending money. These games may increase their confidence in winning at gambling, perception of personal skill and their risk taking within gambling.
- For some young people, playing gambling games may substitute for or reduce gambling, particularly if gambling-themed games are viewed to be as fun and enjoyable as gambling for a lower (or no) cost.
- Longitudinal research is needed to fully investigate the consequences for young people exposed to gambling through gaming. Currently, there is no firm evidence on the consequences of gambling-themed games for young people. The impact is likely to differ based on young people's individual characteristics and other factors in their psycho-social environment.

How are gambling-like games marketed and promoted to young people, and what impact does this marketing have?

Young people are particularly vulnerable to the effects of advertising. All advertising that is visible to youth will potentially have an impact on this population, even if the product advertised is only available in an age restricted environment. The mechanisms by which advertisements are effective include increasing awareness of products and creating positive attitudes towards products and brands, leading to intention to purchase (Davis, 2013). Companies often target young children and aim to develop brand loyalty and preferences, even before these young people are able to be independent consumers (Linn, 2004). Therefore, youth exposed to marketing for products can develop positive attitudes, beliefs and expectations about the products, which may foster intention to use and lead to initiation.

A meta-analysis of the literature on tobacco advertising found that exposure to pro-tobacco marketing and media (through advertising, promotions, samples, and pro-tobacco depictions in films, televisions, and videos) increased the odds of youth (aged younger than 18 years) holding positive attitudes towards tobacco use and more than doubled the odds of initiating tobacco use (Wellman, Sugarman, DiFranza, & Winickoff, 2006). These effects were observed across time, in different countries, and with different study designs and measures of exposure and outcome indicating the consistent effect of advertising on youth. Similarly, a review of studies on alcohol advertising, marketing, and the portrayal of drinking behaviour in young people found non-drinkers were significantly more likely to have become a drinker at the follow-up with greater exposure to alcohol advertisements, although there was little impact of advertising on existing drinkers (Smith & Foxcroft, 2009). The effects of advertisements on youth reported by alcohol, tobacco, and other public health areas have been shown also in the gambling field (Derevensky, Sklar, Gupta, & Messerlian, 2010; Friend & Ladd, 2009; Korn, Hudson, & Reynolds, 2005; Messerlian & Derevensky, 2006; Monaghan & Derevensky, 2008; Monaghan, Derevensky, & Sklar, 2008). However, not all studies control for important risk factors such

as peer engagement and parental attitudes and behaviour and it is difficult to assess exposure to advertising rather than recall of advertising. Therefore, the actual impact of advertising on young people is difficult to assess.

When young people are exposed to advertising online, it is increasingly different to the exposure they experience through television or print media. Although advertisements are still identifiable, particularly pop-up, banner, or side-bar ads, companies are increasingly using more interactive advertisements online. According to the elaboration likelihood model of persuasion (Petty, Wegener, & Fabrigar, 1997) indirect forms of advertising influence consumers through automatic, minimally attentive processes, which may be even more effective than directive advertising strategies at associating products with positive images and impressions. In studies of tobacco advertising exposure once the young person was psychologically involved, the odds of tobacco use increased almost three times (Wellman et al., 2006). This indicates that the greater involvement youth have with promotions and advertising, the more powerful the behavioural effect will be. Furthermore, advertisements placed within social games may be more engaging than advertisements in other settings, such as paid advertisements on Facebook. This is because in-game advertising is often interactive and may increase engagement with the brand (Kessler, 2010). The degree of congruity between the brand and product being advertised and the game is also important. Games that are highly congruent with the product being advertised lead to superior memory for the sponsoring brand (Gross, 2010). This may imply that advertisements for gambling-products or gambling-games placed within gambling-games may be effective in encouraging brand recall.

In-game advertising may be more difficult to identify as marketing. This is supported by a study finding that six to ten year-old children demonstrated a significantly less sophisticated understanding of brand placement in movies and games in comparison to traditional television advertising (Owen, Lewis, Auty, & Buijzen, 2013). Similarly, almost half of nine to 12 year-old children in a study were not aware that games created by advertising brands (advergaming) were intended as marketing strategies and children generally liked these games (van Reijmersdal, Rozendaal, & Buijzen, 2012). However, a subsequent study found that children (aged 9-12 years) were mostly able to recognise in-game advertising and that these were intended to sell products and better recognition of understanding of advertising in social games reduced children's susceptibility to the effects (Rozendaal, Slot, van Reijmersdal, & Buijzen, 2013). Of interest, this study found that players held greater critical abilities than non-players, which may suggest that exposure to advertisements within social games may increase children's ability to activate and apply their conceptual persuasion knowledge when confronted with embedded advertising. Applied to gambling, the results may indicate that young people who are actively playing gambling-themed games and having positive experiences with these, may be more susceptible to in-game advertising than standard advertising formats. However, increasing young people's critical attitude towards these advertisements may decrease their impact.

Alternatively, some youth may be drawn to gambling activities for their perceived association with other entertainment properties, such as film and video-games. The design of social casino games, which often feature animated (i.e., cartoon) characters and imagery, may appeal to children and adolescents. Research has demonstrated that young children respond positively to animated characters and that these generate high levels of attention and liking, as well as product recognition and liking (Neeley & Schumann, 2004). The use of animated characters may also signal to youth that the games are intended to be played by young people and are suitable for them. Some social casino games also incorporate themes from popular media that may be appealing to children, such as cartoons, television shows and movies. However, some of these themes may be intended for adults, for example, the Wizard of Oz themed slot games featured in *Hit It Rich!* Games may be intended to appeal to adult markets who recall this movie from their youth, when it was originally released.

The popularity of social networking and social gaming across a varied demographic user base has led many companies, including gambling operators, to market to social game players. Advertising has been predicted to be the largest contributor to social media revenue. Advertisers worldwide are predicted to spend US\$23.68 billion on paid media to reach consumers on social networks in 2015, a 33.5% increase from 2014 (Media Buying, 2015). By 2017, SNS advertising spending is expected to reach US\$35.98 billion, representing 16% of all digital advertising spending globally. SNS advertising includes advertising within social games. Games represent the most profitable types of apps and the account for the largest percentage of time spent on mobile devices (Kiladis, 2014).

As marketing efforts become more sophisticated, marketers can target ads to highly specialised audience, for example, males, aged 18-24, with at least three casino games downloaded on their device, instead of just trying to display ads where they hope that a relevant audience may be. Although this is a more costly form of advertising, it may reach highly targeted segments with users who would be more likely to play a game, and pay to play, thus increasing return on investment (Kiladis, 2014). In one example quoted by an industry expert, retargeting mobile advertising for a popular social casino game was able to more than double the number of purchases acquired through user acquisition strategies (Kiladis, 2014). These industry figures indicate that advertisements for gambling products and gambling-themed games will be increasingly shown digitally (that is, online) and targeted to the most relevant and potentially profitable audience. Therefore, it is likely that the more interest a young person exhibits in gambling and gambling-themed games, the more likely they are to be exposed to advertising for these activities.

In-game advertisements may take several forms but are generally highly visible, increasing the likelihood that players will see these and potentially be engaged. In freemium games, advertisements often appear in the bottom of the player's screen throughout play (see Figure 2).

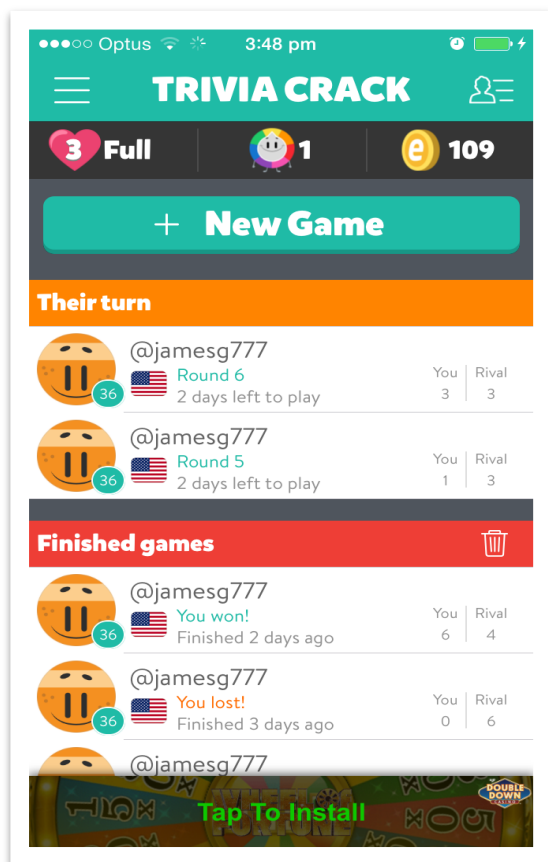


Figure 2: Mobile in-game advertisement for a social casino game

Advertisements are generally dynamic, featuring flashing lights, animations, and video graphics. Advertisements may also interrupt game play throughout the game and take up the entire screen, screening videos with links to another game or site (as shown by the example in Figure 3 below). In-game advertisements can also be integrated into the loading screen for a game or be displayed following a turn being completed. In some freemium games advertisements can be removed by paying for the product. Social game advertisements are increasingly interactive and engaging and are more successful as indicated by higher click-through-rates than standard online banner ads (MediaBrix, 2014).

In recognition of the high use of social media by young people, some social media platforms, such as Facebook, have enabled companies to restrict their paid ads to only be shown to users in certain age groups and in specified geographical locations. Companies can also limit the visibility of their Facebook pages with country and age restrictions, which restrict the users who can search for and 'like' their page. However, social media platforms are continually changing their advertising policies. For example, in February 2015 Google announced that it would commence a beta test that would support ads for social casino games. Previously Google had enforced a policy restricting the promotion of gambling-related content, including online and offline gambling. However, the major search engine will now trial advertisements for social casino games. The restrictions on these are that the ads and games do not link to gambling sites, nor contain any gambling advertising on the site or app. Furthermore, the ads must "clearly and prominently" inform users that the social casino games are "intended for an adult audience" and that "practice or success" at social casino games "does not imply future success" at gambling sites (Google, 2015). Despite these restrictions, increased

advertising for social casino games will likely increase participation in these activities. Social casino games are also available for download in the Apple App Store, with few age restrictions.

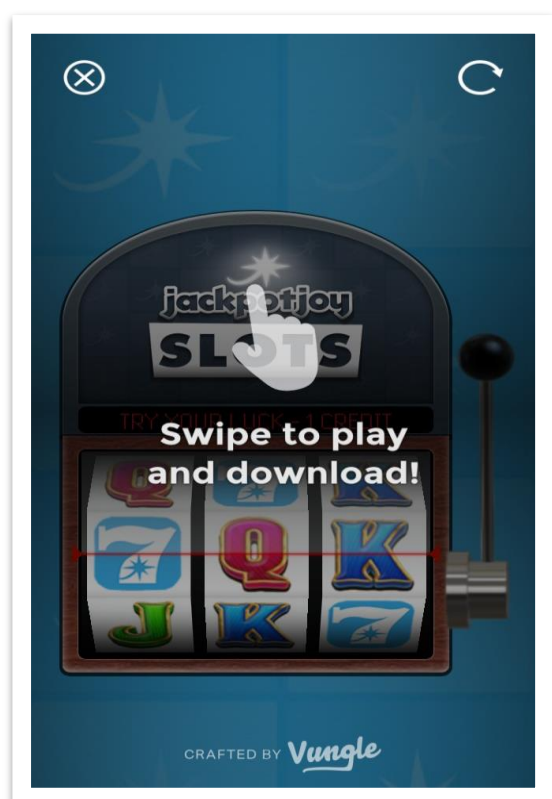


Figure 3: Mobile in-game advertisement for a social casino game

The marketing of gambling-themed games is not well understood or documented. It is also not clear to what extent marketing for such games targets young people. Although research on advertising in digital games and through social networks has increased significantly during the past few years, there are many opportunities for further research to improve our knowledge of how this type of advertising works and affects society, particularly young people. Additional research should include understanding characteristics of advertising for gambling-themed games, the psychological and behavioural responses triggered, as well as the individual characteristics of the player and social factors that influence the long-term consequences of this advertising. A subsequent chapter of this report will explore in more detail how gambling-games are marketed to young Australians.

Summary – How are gambling-like games marketed and promoted to young people, and what impact does this marketing have?

- Research from broader public health fields indicates that young people are vulnerable to the impacts of marketing.
- In particular, where marketing is integrated into other activities, for example within movies, television shows, and games, this may be more difficult to identify as marketing and subsequently influential.
- There is likely to be a dose-relationship effect, whereby greater exposure to marketing for gambling and gambling-themed games has a greater impact on young people.
- The lack of age restrictions on gambling-themed games means that advertisements for these may be viewed by young people.

- The marketing of gambling-themed games is not well understood or documented. It is also not clear to what extent marketing for such games targets young people.

Content Analysis of Advertisements Present in Social Media and General Internet Use

Method

Recruitment

A total of 20 participants were recruited from the university student population at the University of Adelaide. The recruitment strategy involved flyers advertising the study located in common student areas, as well as an email circulated to undergraduate students in the School of Psychology. Inclusion criteria for the study included: being aged under 21 years and using social media sites on a daily basis. Participants attended a briefing session with the researchers (DK, PH) where they were provided with instructions as well as a portable storage device. The study was described as being about gambling and gambling-like content on social media. They were instructed to screen-capture any advertisements (including banner messages or promotions) related to gambling while using the Internet and social media as they regularly would over a 1-week period. Specific visual examples of such advertisements were provided to all participants. Given that there may have been uncertainty as to whether some advertisements depicted gaming or gambling activity, participants were advised to screen-capture any advertisement with gambling themes in order to avoid excluding potentially relevant images. Participants also completed a questionnaire requesting information about demographic details and social media usage information. For confidentiality and privacy reasons, participants were informed that the research team would edit their screen-captured information if it contained any personal information to remove any personally identifying information. All participants signed a consent form and received a gift voucher as compensation for participation. This project received low-risk ethics approval from the University of Adelaide School of Psychology's Human Research Ethics Sub-committee as well as the Southern Cross University Human Research Ethics Committee (through a minimization of duplication application).

Sample

The sample comprised 20 young adults (11 male, 9 female) with a mean age of 20.8 years ($SD=1.4$ years). They were mostly Caucasian (90%) and enrolled in full-time university study (95%). There were 11 participants (55%) who reported playing social games on social media platforms and 5 participants (25%) who played Internet video games (e.g., PC or console games). Participants reported accessing social media daily via a laptop (100%), smartphone (95%), tablet (70%) or personal computer (50%). All participants had a Facebook account, and 75% reported having a Twitter account. In addition, participants used Instagram (70%), GooglePlus (30%), Tripadvisor (30%), Pinterest (25%), Tumblr (20%), and Reddit (15%).

Analysis

The advertisements collected by the young adults were subjected to a content analysis and textual analysis. Content analysis is used because it provides a "careful, detailed, systematic examination of a particular body of material in order to identify patterns, themes, biases, and meanings" (Berg & Lune, 2011) and uses quantitative tools to measure certain message variables (Creswell, 2003). Textual analysis was also employed as a tool to qualitatively investigate the structure and functions of the image content (Frey, Botan, & Kreps, 1999) to provide more detail of the marketing techniques used for games with gambling-themed content and analyse latent elements (deeper structural

meanings) in addition to the manifest (physically present) elements of the advertisements (Creswell, 2003).

In total, 276 images were collected. Some advertisements were discarded due to redundancy (participants had captured the same advertisements) or because they did not contain gambling-related content, such as advertisements for non-relevant products (e.g., Microsoft Surface tablet or Qantas Airways) or for standard social games (e.g., Pirate Kings or Game of War). After removing redundant images and non-relevant images (not gambling-related or not advertisements), 113 screenshot images remained. Five captured screenshots contained multiple gambling-themed advertisements and three captured screenshots comprised one total advertisement, establishing a total of 115 images that underwent analysis.

Analysis of the images was conducted with an analytical framework oriented toward marketing and promotion to young people, with a focus on the research question: How are gambling-like games marketed and promoted to young people? The analysis makes an inquiry into the gambling themes youth are exposed to during their social media and general Internet use. Some participants captured advertisements for real money gambling activities; while this is separate from the primary focus of gambling-themed games and was not required of participants, this study is not intended to be an audit of gambling-themed game advertisements, but rather a qualitative exploration of the major themes in advertisements with gambling content. Numbers are provided here, but these should not necessarily be considered to be representative or generalizable. The vast majority of the sample is comprised of advertisements for gambling-themed games within SNS.

Initial analysis was conducted using an open coding process, guided by the literature review and typology developed prior to data collection. During this process, the images were all reviewed several times while the codes were regularly revisited to generate theoretical properties of each category (Marshall & Rossman, 2011). Following this, axial coding (Strauss & Corbin, 1997) was used to cluster the codes by identifying relationships among the codes. Coding allowed for quantification of the frequencies and proportions of each sub-category of each primary property.

Coding variables – Primary properties

Each advertisement was logged and coded according to the following variables:

1. *Products* – consisted of product name, regulatory status in Australia, type of product (based on the taxonomy of gambling-themed games in Gainsbury, Hing et al., (2014)), type of advertising, source of the advertisement (if available), and game type (e.g., slots, poker, general casino).
2. *Messages* – included messages themes (both manifest and latent), promotional techniques (i.e., traits meant to attract the viewer, such as appeals to familiarity), encouraged actions (e.g., download now), references to social interaction, and manifest responsible gambling or problem gambling content.
3. *Benefits Promoted* – comprised of advertising content that offered viewers positive reasons for using the product, from the tangible (e.g., a promotional offering of free coins/chips) to the intangible (e.g., excitement).
4. *Imagery* – referred to specific image representations, character images (including age, gender, socioeconomic status, and race/ethnicity of the characters), and colour scheme.
5. *Target Audiences* – consisted of two primary types of the advertisement's intended audience: age and gender.

Inter-rater reliability

Once initial coding was complete, another researcher independently conducted a second review according to the coding frame. Coding results were then compared between the two coders. A total of 2,760 data points were collected (24 total variables and subvariables multiplied by 115 total images), and there were 40 discrepancies between coders (1.45% of the total coding dataset). All discrepancies in coding were discussed within the analytical framework until consensus was reached for a final code assignment.

Results

Analysis of the advertisements revealed several underlying themes and other content present. Here, these themes are reviewed and discussed in terms of their appeal to youth audiences. First, an overview of the advertised products is provided, including the types of products, the source of the advertisements, and the advertised game type. Next, the images present in the advertisements is discussed, including the colour scheme, characters present, and image content types. Following this, the appeals and message themes are examined, as well as the promotional techniques used in the advertisements, a review of responsible gambling content, and then the related theme-type of promoted benefits in the advertisements. The chapter concludes with an assessment interpreted target audience for these advertisements.

Advertised products

The majority of analysed advertisements were for social casino games (N = 66); that is, games that are played on a social media platform, do not require monetary payment, and contain a central gambling theme (Gainsbury et al., 2014). Just under one third (N = 37) of the advertisements were for Internet gambling products, with required monetary payments to play. Some Internet gambling advertisements did offer promotional free bet options, but were still classified as Internet gambling because the promotional offer was a one-off or short term. A small number of advertisements were for tournaments or competitions (N = 5) for skill games with paid entry fees; and for live venue gambling (N = 6), which advertised products that are present in a bricks and mortar casino. Only one advertisement was submitted for the stand-alone game category.

Fifty-seven companies were represented in the analysed advertisements, with Caesars Interactive (N = 13), Sportsbet (N = 9), Zynga (N = 7), and PlayStudios (N = 6) being the most prevalent. Not all advertisements made the company or even product name available; some were image only.

Table 2: Companies and respective products represented in the dataset, by type of product

contains a list of all companies and respective products, separated by type of product. In some cases, product names are not available for the advertised company; in others, product name and company name are the same.

Table 2: Companies and respective products represented in the dataset, by type of product

Type of Product	Company Name	Product Name
<i>Social Casino Game</i>	Ainsworth	Players Paradise Casino
	Aristocrat	Heart of Vegas
	Bitflash	Classic Poker Texas Holdem

	Caesars Interactive	Caesars Casino ^a Caesars Slots Slotomania World Series of Poker
	Cervo Media	Pharaoh's Way
	Churchill Downs	Big Fish Casino
	Double U Casino	Double U Casino
	Dragon Viking	Roulette Tournaments
	DragonPlay	Live Hold'em Poker Pro
	Gamesys	Jackpotjoy Slots Star Spins Slots
	GSN	GSN Casino
	House of Fun	House of Fun Slots Wild Casino Slots
	IGT – DoubleDown Casino	Pharaoh's Fortune Five Play Draw Poker Triple Diamond Red Mansions
	LazyLand Ltd	Roulette Arena
	LuckyFish Games	OMG! Fortune Slots
	Magmic Games	Blackjack King
	meme	Xtreme Slots
	Mirrorball Slots	Mirrorball Slots
	Murka	TX Poker
	Netherfire	Harvest Slots
	PlayStudios	myVEGAS Blackjack myVEGAS Slots
	Product Madness	Hollywood Spins
	Scene53	Casa Casino Slots
	Shenzhen Coalaa Technology	Hold'em PH
	TOPGAME	Titan's Way Slots
	Williams Interactive	Gold Fish Casino
	Zynga	Hit it Rich! Casino Texas HoldEm Poker Wizard of Oz Slots

Internet Gambling	888 Poker	888 Poker
	All Slots Casino	n/a
	bet365	n/a
	Betit	Thrills Flying Casino
	Crownbet	Pick a Winner
	Dream Team Talk	DT Talk Show (Sports Betting)
	Golden Riviera Online Casino	n/a
	Jackpot Grand Casino	n/a
	Jet Bingo	Jet Bingo
	Ladbrokes	AFL Big Hit AFL Footy Freaks
	Lucky247 Casino	Lucky247 Casino
	Palmerbet	Palmerbet
	Piggs Online Casino	Piggs Online Casino
	Sports Bar + Arena	Oz Lotto, Powerball, X Lotto, SA Lotteries
	Sports Bet Expert	Betting Advice and Link to Wagering
	Sportsbet	Cashout Sportsbet Sports Betting
	Star Games	Golden Sevens
	Tatts	TAB Betting UBet
	Thebetuset.net	Thebetuset.net
	Unibet	Unibet
	Vera & John Casino	n/a
	William Hill	William Hill Sports Betting
Live Venue Gambling	Reach for the Sky	n/a – general live venue advertisement
	SKYCITY Adelaide Casino	SKYCITY Adelaide Casino GameDay App
Tournament or Competition	DraftStreet	Fantasy Football
	Dream Team Talk	DT Talk Show (Fantasy Sports)

	FastBet	n/a
	SKYCITY Adelaide Casino	Win a Jeep Competition
	Sportsbet	n/a
Stand-alone Game	Boost Juice	Boost Bingo

^aCaesars Casino is the company name for both the social casino game (worldwide) and Internet gambling site (in the United States)

As expected, given the lack of regulatory framework for social games, the majority of advertisements (N = 74) came from companies not regulated in Australia. Just under one quarter (N = 25) of the advertisements came from companies regulated in Australia, such as sports betting and live venue operators. Some advertisements represented companies that own an Australian gambling license for an aspect of their operation other than social games (e.g., IGT is a licensed manufacturer and distributor of slot machines, but does not own a license for social games).

Advertisement sourcing and classification

Nearly three quarters (N = 84) of the examined advertisements came from Facebook, with only a small representation of other social media sites. Twitter was the source of only three analysed advertisements, with Instagram (N = 2) and YouTube (N = 2) also lightly represented. Just under 8% (N = 9) of the advertisements appeared during general Internet use. Only one advertisement each was collected during a Google Search and during use of the BitTorrent App.

Due to this heavy social media sourcing, it follows that the majority of advertising could be classified as a sponsored ad, suggested link, or post from a followed company. Sponsored advertisements (e.g., Facebook sponsored links/apps, Twitter promoted tweets, YouTube sponsored pop-up advertisements, sponsored advertising during Google searches) were the most represented in the dataset (N = 45). Suggested posts or apps (e.g., a Facebook suggested app based on the individual or individual's friend's activity, a Twitter recommendation of "Who to Follow") were also well represented (N = 26). Some individuals supplied advertisements that appeared because they followed the company through a social media platform, such as Facebook or Twitter (N = 13). These advertisements appeared organically in the platform timeline because the individual had already given permission to display such posts when they signed up to follow the company. Advertisements that appeared because friends were participating in the game (e.g., "[Your friend, X,] just won 8,700 coins on the Mega Bonus Wheel! You can be a winner, too!" or "[X] just rose a level in Slotomania") were also somewhat frequent (N = 7). As noted in the literature review, sponsored advertisements can be purchased for highly-targeted audiences – those deemed to be potentially profitable or at least more likely to play the game (Kiladis, 2014). Increased social casino game play, following gambling-themed companies/groups, and even having friends and connections who play social casino games make an individual highly likely to see an increased number of advertisements through SNS. This is partially reflected in the image data set – some participants captured substantially more gambling-themed Facebook advertising than others did.

Pop-up advertisements that appeared on visited webpages or apps were substantially less frequent than those captured through SNS (N = 11).

Advertised game type

The most frequently advertised game type was slot machines (N = 50), followed by race and sports betting (N = 25). Advertisements were also common for general casino games, in which the specific game was not explicitly stated (N = 16), as well as table games such as poker (N = 12), blackjack (N =

8), and roulette (N = 5). Video poker (N = 5), bingo (N = 3), and free-to-enter contests/raffles (N = 3) also had small representation in the dataset. Low frequencies of advertisements for lottery (N = 1) and baccarat (N = 1) were also present, as well as fantasy sports (N = 2). **Error! Reference source not found.**3 displays the game types advertised by type of product. Slots were by far the most prevalent in the collected social casino advertisements. Comparatively, the collected Internet gambling advertisements focused mainly on race and sports betting.

Table 3: Game types and frequencies represented in the dataset by type of product

Type of Product	Game Type	Frequency (N)
<i>Social Casino Game</i>	Baccarat	1
	Bingo	1
	Blackjack	7
	General Casino	5
	Poker	11
	Roulette	5
	Slots	42
	Video Poker	2
	Not Specified	2
<i>Internet Gambling</i>	Bingo	1
	Blackjack	1
	General Casino	7
	Lottery	1
	Poker	1
	Race/Sports Betting	24
	Slots	6
	Not Specified	2
<i>Live Venue Gambling</i>	Free-to-Enter Contest/Raffle	1
	General Casino	3
	Slots	2

	Video Poker	1
Tournament or Competition	Fantasy Sports	2
	Free-to-Enter Contest/Raffle	2
	General Casino	1
	Race/Sports Betting	1
	Video Poker	2
	Not Specified/Other	1
Stand-alone Game	Bingo	1

Imagery

Colour Scheme

Amongst the 115 images, the use of a bright ($N = 51$) or contrasting ($N = 47$) colour scheme was particularly prevalent in the analysed images. Use of vivid, bright hues in advertising have been found to generate feelings of excitement in viewers (Gorn, Chattopadhyay, Yi, & Dahl, 1997), and use in the analysed advertisements conveys the idea of gambling and gambling-themed games as exciting activities. The contrasting colour scheme was often used to call specific attention to certain text and images within the advertisement. White text on a dark blue background, for example, emphasised the text content.

Characters

Both human and animal characters were prominent in the advertising. These images were represented as both cartoon-like characters ($N = 35$) and in realistic images such as photographs ($N = 23$). Concerns about cartoon-like characters have been present in the tobacco industry, with Camel's Joe Camel cartoon image as a prime example. The advertised Joe Camel cartoon character was shown to be more successful at marketing the Camel cigarettes to children than to adults (DiFranza et al., 1991). The character images in the advertisements included males ($N = 20$), females ($N = 15$) and both genders ($N = 5$), and character age groups were primarily young adults ($N = 29$), although images of adolescents ($N = 3$) and one image of children appeared. Figure 4 displays an advertisement with a cartoon image of a young adult female, while Figure 5 displays the single advertisement example that includes images of children, who appear in the reels of the slot game.

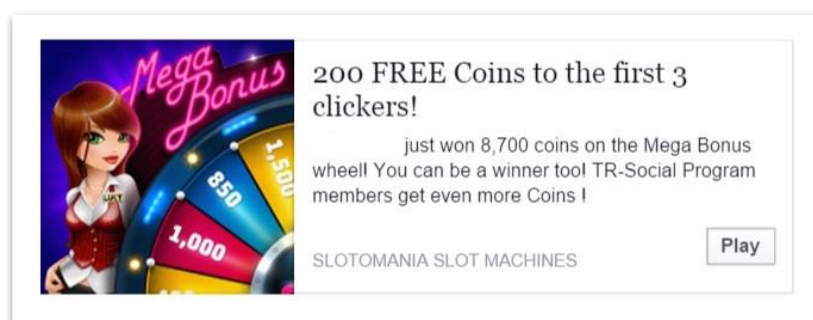


Figure 4: Facebook advertisement for Slotomania, displaying a cartoon-like young adult female character

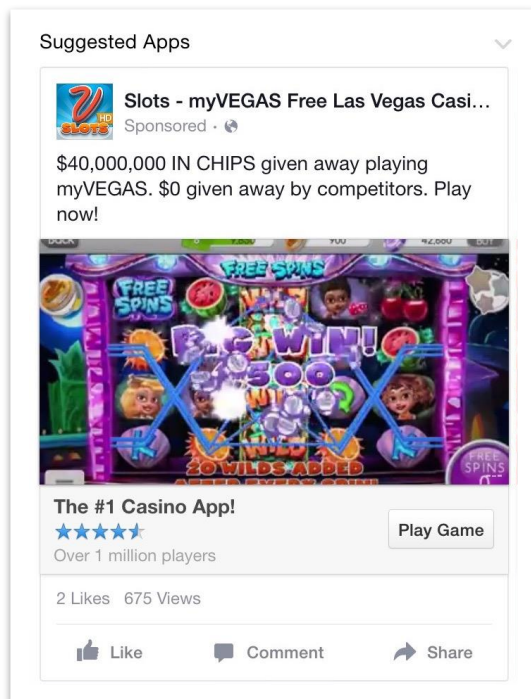


Figure 5: Facebook advertisement for myVEGAS, displaying cartoon-like children characters

Animal images were also present in the advertisements (N = 14). Some representations of animals were not likely to be attractive to children (e.g., an image of a howling wolf), although some animals were designed to be cute and whimsical in appearance. Figure 6, for example, includes an image of three pigs who look endearingly at the viewer and whose image could easily be visualised in a children's farmyard game.

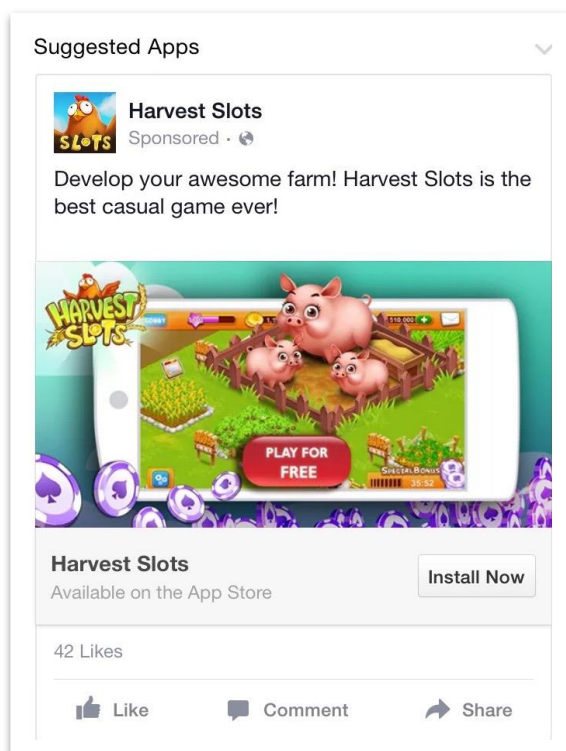


Figure 6: Facebook advertisement for Harvest Slots, displaying animal cartoon-like images

Image Content

Content analysis found several main types of image content. The first of these image types is the most obvious one, given the goal of the advertising: images of gambling activity. These images included gambling games, such as slot reels, stacks of chips, cards, or other content reflective of a gambling game. The content type also included images of people engaged in a gambling activity. Figure 7 displays two examples of the gambling activity image – a roulette wheel for the *Roulette Arena* game, and the Ace and Jack of Spades for the *Blackjack Arena* game.

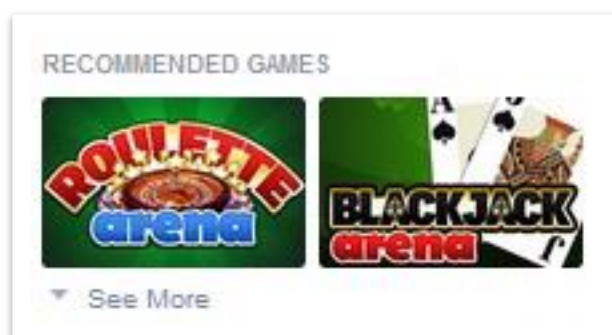


Figure 7: Facebook Advertisement for Roulette Arena and Blackjack Arena, Displaying Gambling Activity Images

Sport imagery and references were frequently used in advertisements ($N = 22$), particularly in advertisements for Internet gambling companies that focused on sports betting (e.g., Sportsbet, William Hill). These images included representations of sports games or contests, sports stadia, and famous athletes, with AFL being a particularly common sports image portrayal. Sports images inspire recognition of a powerful cultural identity, especially in a sport like Australian Rules Football, with obvious ties to the country. Sports typically inspire high emotional involvement (Sutton, McDonald, & Milne, 1997) and include associations of excitement and winning, two message themes discussed in later sections. Figure 8 provides an example of this image type, using a sports stadium as a background image to the mobile application.



Figure 8: Facebook advertisement for Ladbrokes, displaying sport image type

References to characters from popular culture settings, such as images of celebrities, representations of films, video games, or music, were also observed in a small number of advertisements (N = 9). Elvis, for example, featured in one advertisement for Caesars Casino, while Titan and his famous trident feature in an advertisement for his namesake social slot game, Titan's Way. These types of advertisement associate recognizable content, such as the Pink Panther in Figure 9, with gambling-themed games, inserting gambling into a familiar environment. Cartoon characters, such as the Pink Panther, are potentially appealing to younger people and the show has been the focus of remastering and reruns. However, it is recognised that the original Pink Panther Show was produced between 1969 and 1979 and the theme may be intended for adults as a retrospective reminder of their childhood, rather than for the current generation of children.

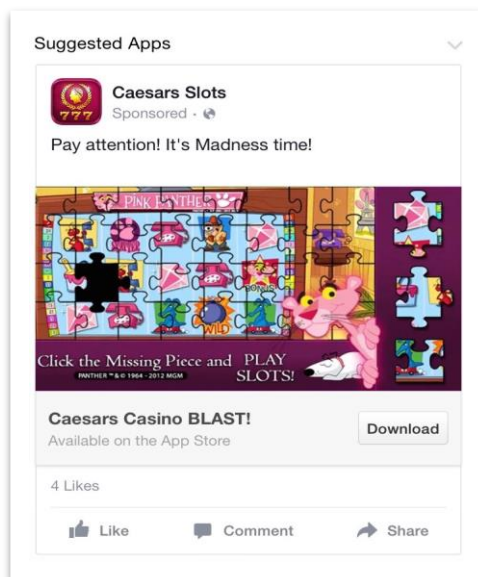


Figure 9: Facebook advertisement for Caesars Casino, displaying popular culture image type

Images of Wealth (N = 23) were also found in the advertisements. These images portrayed riches, money, or a wealthy lifestyle – casino chips with monetary values or gold coin images, for example Figure 10 displays an example of a Wealth image – piles of gold and jewels lie beneath an image of a Pharaoh, known for being buried with valuables.



Figure 10: Facebook advertisement for IGT's DoubleDown Casino, displaying wealth image

The Leisure image type (N = 9) is complementary to Wealth and is represented by images of leisurely time spent using the gambling-themed game or scenes of leisure eventuating as a result of winning. Figure 11 displays this type of leisurely lifestyle: a young man relaxing in an airline's business class juxtaposed with an image of slot machines with huge jackpots sitting in the seats across the aisle on the plane. The advertisement refers to him as a "Pokies Millionaire" and suggests he will reveal his secrets to success.

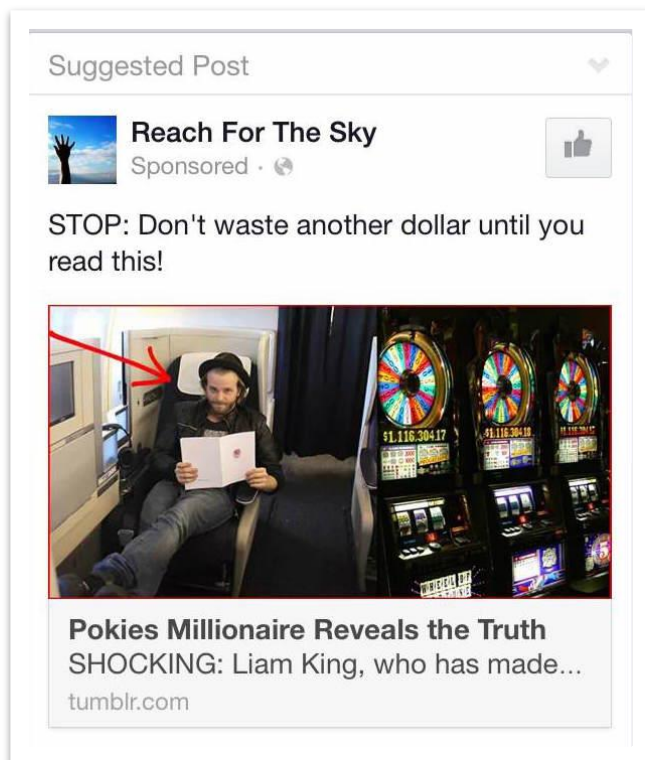


Figure 11: Facebook advertisement from Reach For the Sky, displaying the leisure image type

The next image type is one common to advertising targeted at young people – sexualized imagery (N = 10) (Maciejewski, 2004; Reichert & Lambiase, 2012). Images of this type exhibit sexual portrayals of men or women, including attractive models, suggestive body language, or any objectification of the human body. Figure 12, for example, contains an image of a young woman with cards in her hand, arm raised and framing her cleavage. The sexualized image is juxtaposed with playing cards and casino chips, framing the two “sin” industries (i.e., sex and gambling) together.

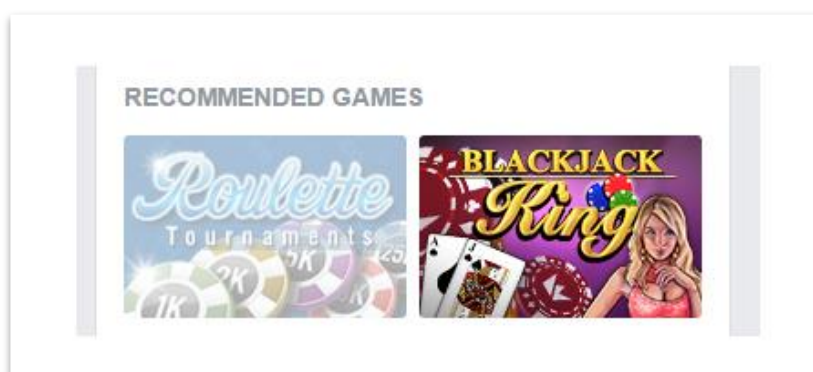


Figure 12: Facebook advertisement for Blackjack King, displaying sexualized image type

The final image type that emerged in analysis was Las Vegas imagery (N = 6). Images of this type portrayed images and text art within the framework of iconic Las Vegas symbols. The Las Vegas

imagery draws on the branding of the city, which is famous for its status as a gambling hub (Bernhard & Ahlgren, 2011). Both Figure 13 and Figure 14, for example, display advertisements using the Welcome to Las Vegas sign as the core basis of the social game's icon.



Figure 13: Twitter advertisement for Heart of Vegas, displaying Las Vegas image type



Figure 14: Facebook advertisement for Players Paradise Casino, displaying Las Vegas image type

Summary – Imagery

Table 4 displays a summary of the imagery types and content found during analysis.

Table 4: Summary of imagery categories and themes (Total N = 115)

Imagery Category	Theme	Frequency (N)*
Colour Scheme	Bright	51
	Contrasting	47
Characters	Cartoon-like Characters	35
	Realistic Characters	23
	Animals	14
Character Gender	Male	20
	Female	15

	Both Genders Present	5
Character Age	Child(ren)	1
	Adolescent(s)	3
	Young Adult(s)	29
	Middle-aged and Older Adult(s)	10
Image Content	Gambling Activity	56
	Sports Imagery	22
	References to Popular Culture	9
	Wealth	23
	Leisure	9
	Sexualized Imagery	10
	Portrayals of Las Vegas	6

*Categories are not all mutually exclusive, totals may add up to more than total N = 115

Appeals and messages

Analysis of the advertisements revealed several prominent themes in the promotional techniques used and messages intended for the audience. It is of note that 20% (N =23) of the analysed advertisements contained an image only with no text or only text art as an image for the product name, thus lowering the counts on several themes.

Promotional techniques

Over half of the advertisements (N = 63) relied on a specific tangible marketing technique, the activity button. The activity button is a built-in piece of many sponsored and suggested app advertisements on Facebook, but it is also used in other forms of advertising. As can be seen in Figure 15 and Figure 16, the activity button includes text such as “Play Game,” “Install Now,” or “Download”, and encourages an easy means of adding the game app to one’s Facebook profile or mobile device, or accessing a web interface through a graphic user interface (GUI) click-through URL.

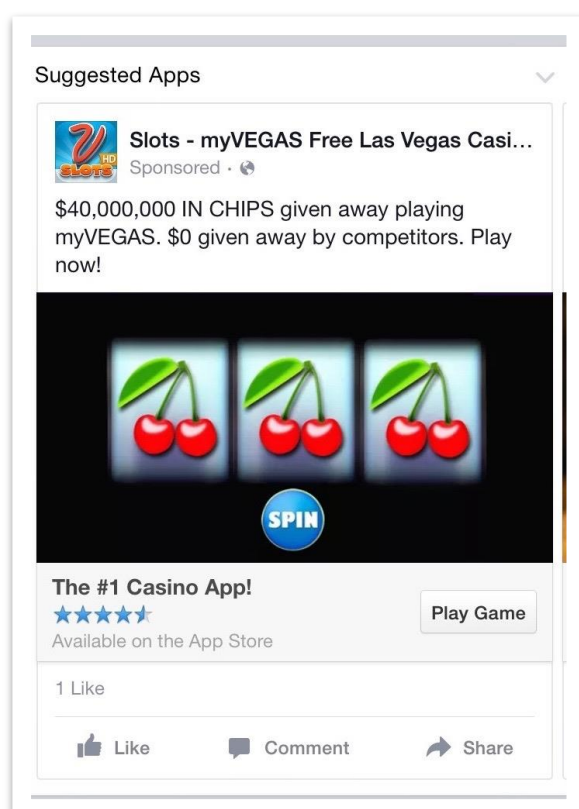


Figure 15: Facebook advertisement for myVEGAS with “Play Game” activity button

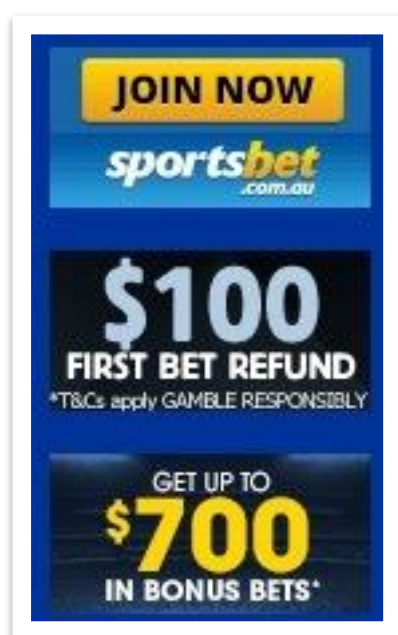


Figure 16: Embedded advertisement for Sportsbet with “Join Now” activity button.

Still other advertisements encouraged users to “Sign-up Now,” without the use of an activity button (N = 19), with additional advertisements designed specifically to encourage new users to use the app or website. New users were sought using basic persuasive text and new user promotions (e.g., “1000 coins on the house to get you going”) or by emphasizing the speed with which one can start playing (e.g., “Only takes 3 minutes”).

Use of specialized vocabulary was also common, with language specific to the game ($N = 18$). Advertisements for slot games, for example, used terms such as “spins” or “reels” while advertisements for poker encouraged users to go “all in” or referred to the World Series of Poker, a famous poker tournament series annual event in Las Vegas. Language was also used in an appeal to familiarity, with conversational phrases like, “stun your mates next time you play,” used to convey the casual and normalised nature of the game.

In some instances, language was geared toward a specific geographical market ($N = 5$). Some products were designed for an Australian or New Zealand audience, and used terms such as “pokies” or “footy,” common colloquialisms (see Figure 17). As noted in the literature review, companies can limit the visibility of their ads to certain countries. These advertisements appear based on a profile or registered country. As can be seen in Figure 18, an advertisement was captured by our Australian participants with Australian English spelling, even though the participant’s Facebook language settings are set to “English (US).”

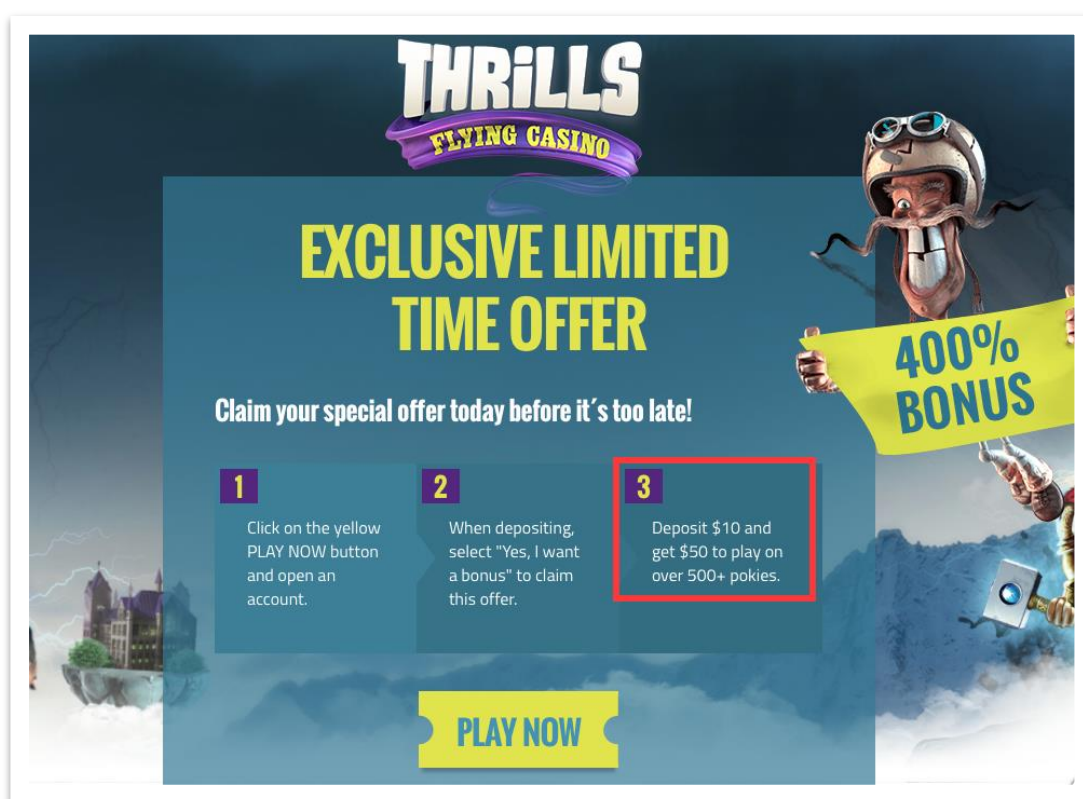


Figure 17: Pop-up advertisement for Thrills Flying Casino, displaying regionally-specific language (Note: Red rectangle added by authors)



Figure 18: Facebook advertisement for Ladbrokes using English (AUS) with language settings set as English (US) (Note: Red rectangles added by authors)

Many of the advertisements relied on appeals to emotion in their messaging in order to sell their product. The use of capital letters for emphasis on words like “FREE” or “WIN” was quite popular (N = 50), while emojis were sometimes added to further dress up text as exciting. Figure 19 provides an example of how capital letters and bright star emojis are used to emphasize the fun aspect of the *Slotomania* slot games. In addition, “PLAY SLOTOMANIA” is also emphasized through the use of capital letters, encouraging use of the product.

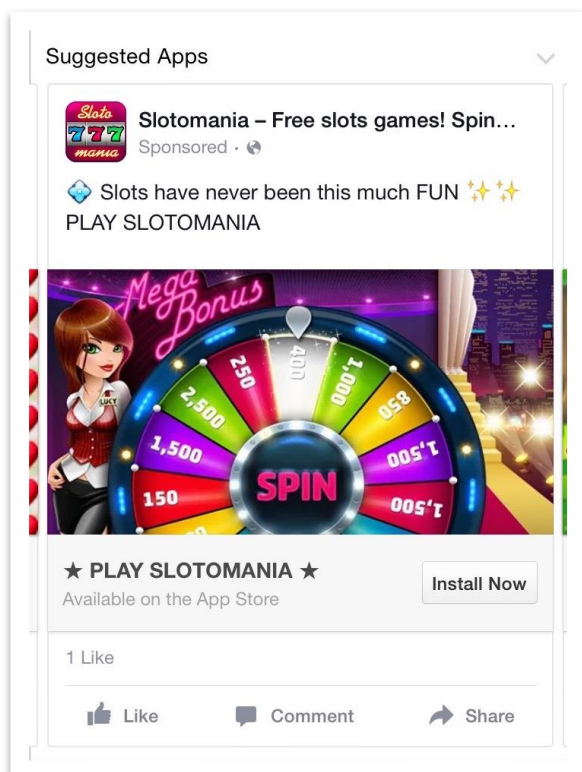


Figure 19: Facebook advertisement for Slotomania with use of capital letters and emojis

Another technique was to appeal to familiarity by indicating the number of players who participate in the game ($N = 18$), with captions near the activity button touting, “Over 1 million players!”. This technique can be explored through the lens of social identity theory, which analyses how people sense who they are based on their group membership (Tajfel & Turner, 1986). Applying the theory here suggests that knowledge that many others enjoy the game – particularly when the game is suggested to them with awareness of their friends’ activity – makes the game more attractive. In this dataset, the technique was exclusively used in Facebook advertisements, which allows apps to create advertisements that organically embed this claim into the image. Figure 20 displays the use of this technique.



Figure 20: Facebook advertisement for GSN Casino with indication of the number of other players

Interestingly, although use of humour has previously been a common theme in gambling advertising (see, for example, Kim, Lee, and Jung (2013), McMullan and Miller (2009), and Derevensky et al. (2010)), only two of the analysed images used humour, relying primarily on other message vehicles to attract customers.

Another interesting promotional technique that did not present itself significantly was encouragement of social interaction through the advertised games. Over 90% ($N = 105$) of the advertisements did not include any suggestion of social interaction in the game. A select few advertised playing with friends ($N = 4$), competing with friends ($N = 4$), and sharing achievements with friends ($N = 4$).

Message Themes

Analysis revealed several dominant recurring message themes. The primary message theme was the glamorisation of gambling ($N = 43$), in which the manifest and/or latent message of the advertisement was overwhelmingly positive with an emphasis on fun and excitement in gambling-themed game participation, perhaps with heightened social status and luxury. In the ad illustrated in Figure 21, a brightly-coloured slot game appears, flanked by two flamingos. The marquee above the slot game references the Flamingo Las Vegas, a mainstay on the glamorous Las Vegas Strip since 1946, and the classic design of the marquee and the stage lights bordering the image recall the luxurious days of dressing up for a Las Vegas show. The game is advertised as “The Hottest Slots App on the Planet,” and text by the activity button uses scattered capitalisation to instil feelings of excitement – “SLoToMaNiA CRaZY REELS.” Even the name of the app itself, *Slotomania*, includes the term “mania,” suggesting a fun and exciting game.

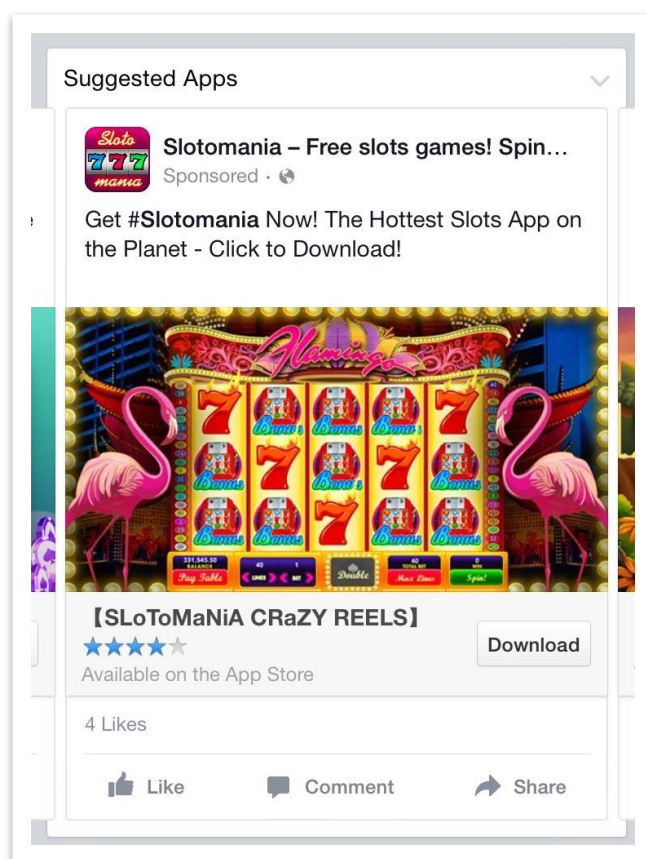


Figure 21: Facebook advertisement for Slotomania, demonstrating glamorisation of gambling-themed activity

Winning also emerged as a prominent message theme in the advertisements (N = 36). This message was frequently conveyed through promotion of winning coins and/or chips, jackpot amounts, or references to wealth and/or riches. In Figure 22, an advertisement for *Wizard of Oz Slots*, the text content advertises “follow[ing] the yellow brick road all the way to the bank.” This specific example is of particular note, because winnings in the social slot game cannot be exchanged for real money and thus cannot be put in an actual bank. The message, however, is still present and alludes to alleviation of financial woes or as a pathway to wealth, themes which are generally prohibited in advertisements for gambling.

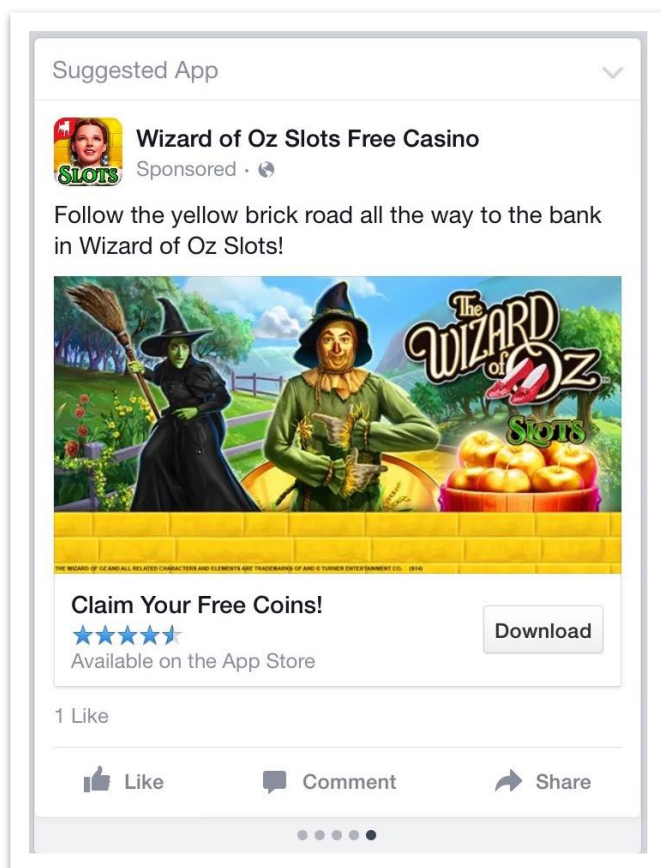


Figure 22: Facebook advertisement for Wizard of Odds Slots, winning message theme

In Figure 23, the winning message is conveyed with an appeal to familiarity; the participant's Facebook friend has been playing a *Slotomania* social casino game and won 6,000 coins. The viewer is invited to play the game, too, and a promotional offer is coupled with the "winning" message to increase the enticement.

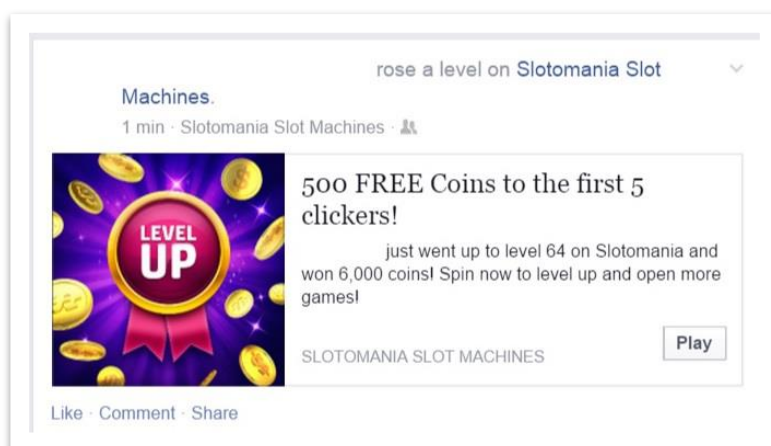


Figure 23: Facebook advertisement for Slotomania, displays winning message theme

Messages reinforcing the idea that gambling-themed games are a normal part of everyday life were displayed through the Normalisation theme (N = 24). Figure 24 displays the normalisation theme – a person walking past a grassy environment and holding a bag with cloth straps, plays *Hit it Rich! Casino Slots & Pokies* while out and about on normal daily activities.

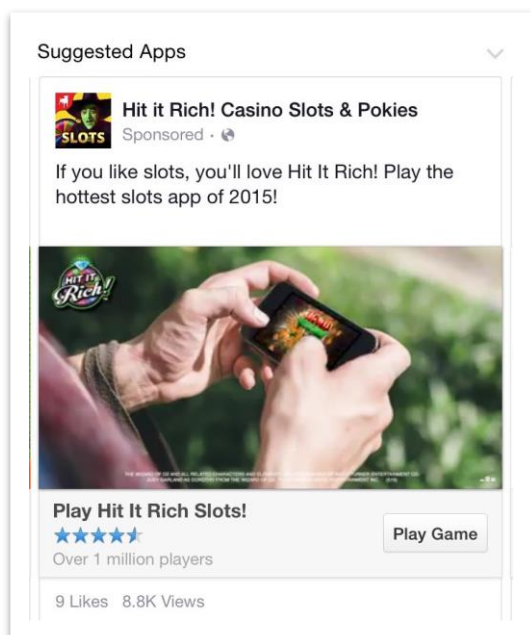


Figure 24: Facebook advertisement for Hit it Rich! Casino Slots & Pokies, displaying normalisation theme

The normalisation theme was reinforced by images and text in direct counterpoint to the glamorisation theme – rather than overemphasising excitement and glamour, gambling-themed games were instead advertising gambling-themed games as naturally fitting into an everyday routine and encouraged the rhetorical argument that “anyone can win”.

Another major theme in advertisement messages emphasized how players could play the game for free (N = 30). The social casino games, in particular, were keen to draw attention to the fact that their games could be accessed with no payment necessary, and none mentioned in-game microtransactions that could occur once the player downloaded and/or accessed the game. Figure 25, for example, advertises *DoubleDown Casino’s* Free Slots game and offers a promotion for 1 million free chips. The phrases “Free Slots” and “PLAY FREE” both appear in the advertisement, while the 1 million free chips are mentioned twice.

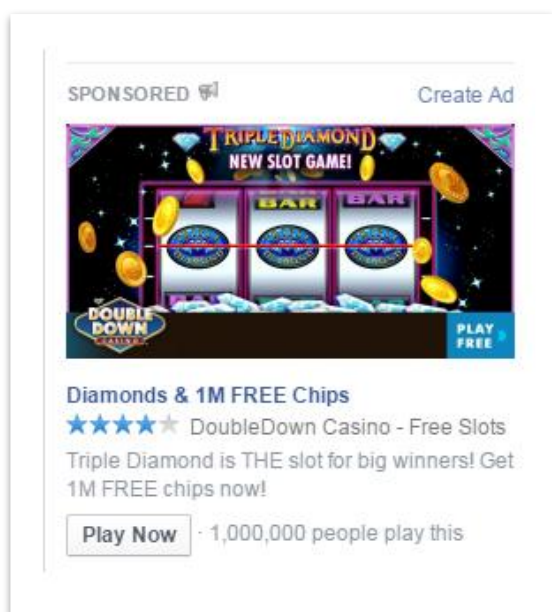


Figure 25: Facebook advertisement for DoubleDown Casino's Triple Diamond social slot game, displaying play for free theme

Some Internet gambling ads that appeared also offered promotions that allowed players to play for free. Figure 26 advertises a promotional bonus that requires no monetary deposit to play at the Internet gambling site.



Figure 26: Pop-up advertisement from 888, displaying play for free message theme

The final major message theme that emerged was an Encouragement to Play (N = 15). The target audience was not always explicitly urged to play, although many advertisements exhibiting this theme prompted viewers to join, click, or play. Figure 27, for example, displays an advertisement that uses a contrasting colour scheme to allow the brightly-coloured messages to stand out from the dark-coloured background. As a result, the “Play Now!” message is emphasized, as is the promotional offering.



Figure 27: Pop-up advertisement for Jackpot Grand Casino, displaying encouragement to play message theme

The Encouragement to Play message theme included a subset of messages that encouraged play in a live gambling venue. Several advertisements promoted events occurring at nearby venues – such as a raffle for a Jeep prize, Mother’s Day events, and AFL Game Day – suggesting the audience patronise the establishment (see Figure 28).



Figure 28: Facebook advertisement for SKYCITY Adelaide Casino, displaying message subtheme of encouragement to play at live gambling venue

Two minor recurring themes also emerged during analysis, with only a small number of advertisements representing the themes. Researchers may wish to consider these in future research. The first minor theme is Education ($N = 7$), in which the latent message suggested the gambling-themed game was a way to learn how to play the game (see Figure 29). The Education theme also included advertisements offered informational knowledge about games, such as handicapping tips for race and sports betting. The second minor theme referred to the Compulsive Element of Gaming ($N = 2$), which highlighted the addictive nature of the game in a positive, exciting manner (see Figure 30). The Compulsive Element of Gaming has been discussed in other content analyses of social casino game advertisement (e.g., Gainsbury et al., 2015a).

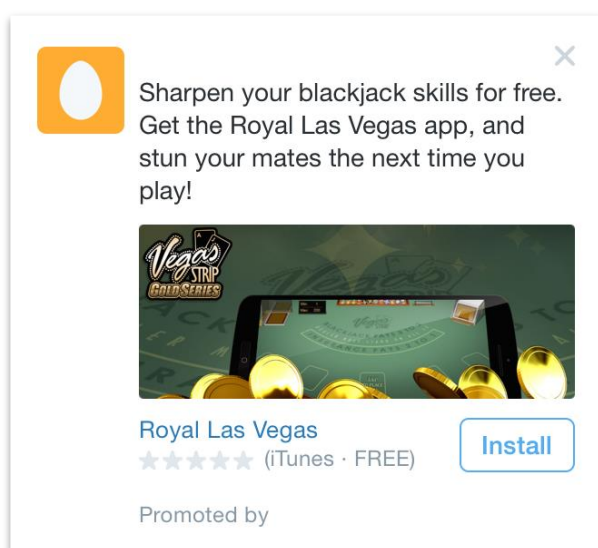


Figure 29: Twitter advertisement for Royal Las Vegas, displaying minor message theme of education

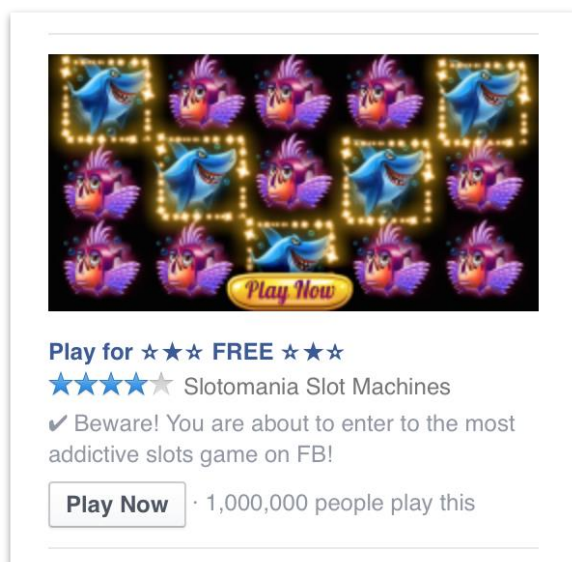


Figure 30: Facebook advertisement for Slotomania, displaying minor message theme of compulsive element of gaming

Responsible Gambling Message Content

Analysis of the advertisements found little provision of responsible gambling content. Nearly 90% of advertisements (N = 102) contained no responsible gambling messaging, legal statements (e.g., this game is not gambling), indication of the odds of winning, nor comment on the difference between skill and chance. Responsible gambling messaging was present only in Internet gambling (N = 8) and live venue casino (N = 2) advertisements, and was generally comprised of the standard “Gamble Responsibly” slogan. Sportsbet pop-up advertisements also included the problem gambling helpline and website (N = 4). Live venue casino advertisements typically also included the “Drink Responsibly” slogan (see Figure 31). The few responsible gambling messages seen promoted by gambling and social casino game operators are consistent with previous audits and case studies of gambling-themed social media content (Gainsbury et al., 2015a; Gainsbury, Delfabbro, King, & Hing, 2015).



Figure 31: Facebook advertisement for SKYCITY Adelaide Casino, displaying responsible gambling content

Only one social casino game contained information that might be construed as responsible gambling information, by providing trivia content on the odds of winning at Texas Hold'em poker. Some of the content was displayed in an encouraging, positive light: "Did you know? Almost a quarter (23.5%) of Texas Hold'em hands are a Two Pair!" The same advertisement, however, also offered odds on a full house, a significantly less common hand, using less enthusiastic language: "Hoping for a Full House? Chances are kinda slim – only 2.6% of hands are a Full House!" It is of note that these percentages are accurate only for certain variants of poker that use seven total cards (e.g., 7 Card Stud, Texas Hold'em hands that play a full community card board).

Of particular note among gambling-themed images that did not include responsible gambling information was an Instagram post from Brendan Fevola, a former AFL player (see Figure 32). Fevola, a self-proclaimed problem gambler who has spoken publicly about his drinking and gambling problems which ultimately cost him his football career (Niall, 2010), is featured in the image advertising his wagering tips for the coming week. The advertisement would be seen by anyone following Fevola's Instagram feed, which carries no age restriction, and contains no mention of responsible gambling or warnings about gambling problems.

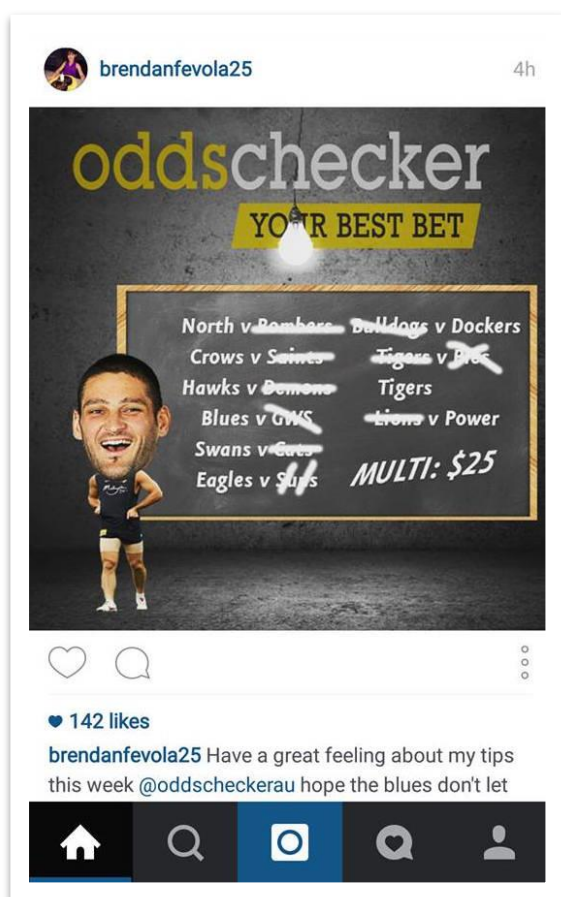


Figure 32: Instagram post for Oddschecker, featuring Brendan Fevola

Summary – Appeals and Messages

Table 5 contains a summary of the appeals and messages categories, including themes and subthemes.

Table 5: Summary of appeals and messages categories and themes

Category	Theme	Frequency (N)
Promotional Techniques	Activity Button	63
	Sign-Up Now	19
	Specialized Vocabulary – Game-specific Language	18
	Specialized Vocabulary – Geographical Market	5
	Use of Capital Letters for Emphasis	50
	Indication of Number of other Players	18
Message Themes	Glamorisation of Gambling	43
	Winning	36
	Normalisation	24
	Play for Free	30
	Encouragement to Play	15
	Education	7
	Compulsive Element of Gaming	2
Responsible Gambling Message Content	Present	13
	Not Present	102

Benefits promoted

In addition to the general message themes, analysis of the advertisements also revealed several trends in the types of benefits that the companies promoted for their products. Some promoted benefits paralleled the message themes, such as winning and excitement. The primary promoted benefits, however, were more tangible for the target audience. About one out of every three advertisements (N = 38) offered some form of promotional marketing offering, such as free coins/chips, free bonus with monetary deposit, or free-to-enter raffle. The “free” aspect of the promotion was often heavily stressed (see Figure 33). Figure 33 also displays the activity button for ease of access and generates excitement by informing the viewer that a friend has won and they can gain free chips (emphasized using capital letters) as a result of their friend's win.



Figure 33: Facebook advertisement generated by friend's activity for World Series of Poker, displaying promotional offer

Another promoted benefit that emerged during analysis was Ease of Use ($N = 7$), which paralleled the message theme of the same name in (Gainsbury, Delfabbro et al., 2015). The Ease of Use benefit was used to highlight how quickly one could start playing the game, by advertising immediate installation or mentioning that it “only takes 3 minutes” to join, a statement that appeared in the Sportsbet pop-ups ($N = 4$). Figure 34 shows the Ease of Use benefit in a pop-up advertisement that appeared while the participant was viewing a YouTube video, promoting the fact that it takes “only 1 minute to register” for the sports betting site. The advertisement also shows the Promotional Offering benefit, a \$500 deposit bonus.



Figure 34: YouTube pop-up advertisement for Unibet, displaying ease of use benefit

The focus of many advertisements, particularly social games, was on the game-play experience ($N = 22$). Social game ads frequently promoted in-game content, such as a large number of paylines or mini games, and also promoted the visual appearance of the game and made claims of a better game experience than their competitors (e.g., “Hottest Slots App on the Planet!”, as in Figure 21). Figure 35 provides an example of such an ad, and promotes the free spins, variety of mini-games, and pleasing visual design of the dual reels. The ad also displays the capital letters used for emphasis and activity button, while the title of the advertisement (“Wizard of Oz Slots Free Casino”) informs the viewer that the game is free to play.

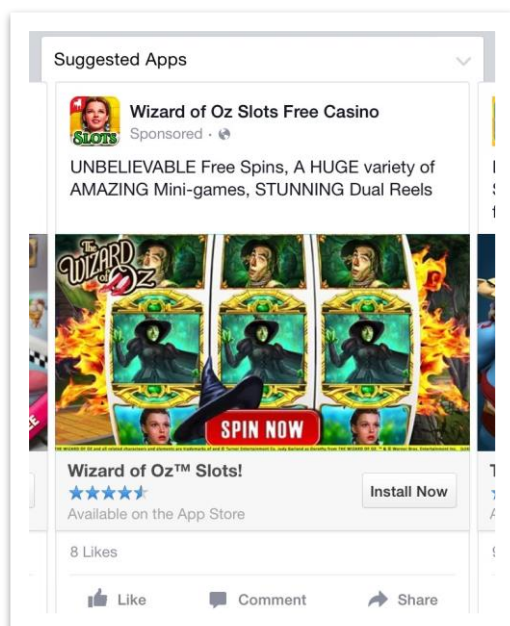


Figure 35: Facebook advertisement for Wizard of Oz Slots, displaying good game play experience benefit

A small but emerging subtrend to the good game-play experience benefit was advertisements for social casino games that offered the benefit of real gambling game experience ($N = 7$). These ads referred to “real world games” or “real casino experience.” Figure 36 shows this subtheme, advertising a real game experience for blackjack, along with another promoted benefit: non-monetary prizes with real-life value. Figure 36 advertises “real Vegas comps,” an allusion to the ability of *myVEGAS* players to earn loyalty points that can be exchanged for prizes, such as hotel room nights or food and beverage credits at restaurants at their partner casinos and casino resorts. The game play experience benefit is also present, with the ad claiming to be better than its competitors: “The #1 Blackjack App!” The advertisement also contains cartoon-character imagery on the King of Hearts rather than the standard playing card imagery, which may be more attractive to young people.

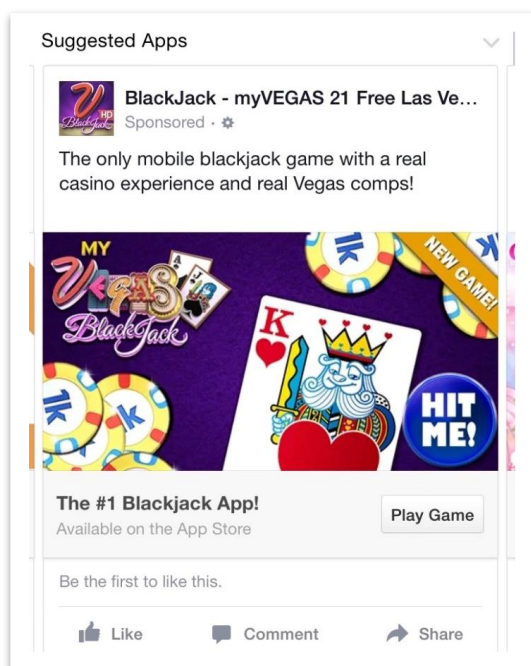


Figure 36: Facebook advertisement for myVEGAS Blackjack, displaying real world games and non-monetary prizes benefits

Summary – Benefits Promoted

Table 6 displays a summary of the trends in benefits promoted that were uncovered during content analysis.

Table 6: Summary of benefits promoted trends

Category/Trend	Frequency (N)
Promotional Offering (e.g., free coins/chips, free deposit with sign-up)	63
Ease of Use	7
Good Game Play Experience	22
Real Gambling Game Experience	7

Target audience

Age

Many of the images, promoted benefits, and message themes that emerged during analysis were considered likely to appeal to young adults (N = 108) and adolescents (N = 87), in addition to older adults. Promotion of a good game play experience is important to a younger crowd – the digital natives – for whom technology is largely normalised (Thomas, 2011). More traditional marketing messages, such as winning and excitement, are expected to continue being attractive to all age groups.

Some advertisements were considered likely to be attractive to children (N = 13), particularly given the prevalence of bright colours and cartoon-like human and animal representations, which have been found to generate high levels of attention and liking in young children (Neeley & Schumann, 2004). Figure 37 provides an example of this, with its bright yellow and orange background, bright gold coins falling from the sky, and cartoon goldfish prominently displayed in the foreground. Figure 6 from the Imagery section of this chapter offers a similar example, with its farmyard cartoon pig and piglets.



Figure 37: Facebook advertisement for GoldFish Casino Slots

Gender

The vast majority of advertisements were not gender specific in a target audience (N = 93). Almost one in five (N = 20) advertisements appeared oriented toward a male audience, while only two advertisements were aimed at females. The advertisements targeting males were distinct in their imagery. The majority of advertisements that contained sexualized imagery were aimed at males (N = 7 out of 10), and over half of the advertisements that contained sport imagery similarly targeted males (N = 12 out of 22).

Summary – Target Audience

Table 7 displays a summary of the target audience types based on the images, messages, and promoted benefits found during analysis.

Table 7: Summary of target audience categories

Type	Category	Frequency (N)
Age	Child(ren)	13
	Adolescent(s)	87
	Young Adult(s)	108
	Middle-aged and Older Adult(s)	110
Gender	Male	20
	Female	2
	No Gender Specific Audience	93

Limitations

Content analysis evaluates only the compositional elements of the images and not how young people actually receive messages, nor how their attitudes and behaviours are affected by the messages. Phenomenological interviewing would be suited for this type of future inquiry.

Content analysis was dependent on the advertisement images collected by students who had received one training session. These students are not gambling experts (nor are they expected to be), and it is possible that they did not capture every gambling-themed advertisement that appeared on their screens. Furthermore, participants were instructed that they only needed to capture one example of each different type of advertisement they saw. Therefore, the images are not intended to be representative of the extent of advertisements for gambling-themed games seen by youth, but representative of the ways in which this marketing occurs. In addition, the dataset is representative of the Internet behaviours of the participating students and results may not be generalizable to all youth Internet behaviours. For example, Facebook is heavily featured as a source of advertising for the images analysed in here, although research has shown that Facebook is increasingly skewing toward an older demographic (Saul, 2014). University students are also not broadly representative of youth in general (Gainsbury, Russell, & Blaszczynski, 2014) so it is likely that young people would be exposed to other forms and types of advertisements for gambling-themed games not captured here.

Summary – Content analysis of advertisements present in social media and general Internet use

- Advertisements for gambling and gambling-themed games were collected by 20 student participants recruited from the University of Adelaide's School of Psychology.
- Participants collected screenshots of gambling and gambling-themed game advertisements that they observed during a one-week span of Internet and social media use.
- This study used a content analysis to map the textual and visual content of the different advertisements.
- Advertisements were coded for product type, messages, benefits promoted, imagery, and target audience.
- Coding was conducted by two researchers, independently, and discrepancies were discussed and consensus reached to create a single coding log.
- The majority of captured advertisements were for gambling-themed games played on SNS, with about one third of advertisements for Internet gambling products and a small number for tournament or competition, live venue gambling, and stand-alone games.
- The majority of advertisements came from companies that are not regulated in Australia.
- Nearly three quarters of advertisements were captured during Facebook use, with a small number from Twitter, Instagram, and YouTube.
- The most advertised game type was slots, followed by race/sports betting, general casino, poker, blackjack, video poker, and bingo. Free-to-enter contests/raffles, lottery, baccarat, and fantasy sports had low prevalence in the dataset.
- The colour schemes of the advertisements were nearly all bright or contrasting (a mix of bright and dark colours).
- Imagery often featured both human (cartoon-like and realistic images) and animal characters.
- Character images were primarily young adults, with some adolescents and one image of child-age characters.
- Image content also included the themes of gambling activity, sports imagery, references to popular culture, wealth, leisure, sexualized imagery, and portrayals of Las Vegas.
- Popular promotional techniques included use of an activity button (such as "Play Game," "Install Now," or "Download").
- Marketing techniques also used language specific to both the game type (e.g., spins, all-in) and to the geographical location (e.g., pokies).
- Appeals to interest and familiarity were attempted through the use of capital letters for emphasis of certain words (e.g., WIN, PLAY FREE) and through an indication of the number of other players.

- Latent and manifest message themes that were uncovered during analysis included glamorisation of gambling, winning, normalisation of gambling, play for free, and a general encouragement to play. Smaller, emerging themes included education (e.g., suggesting that gambling-themed game was a way to learn how to play the game) and the compulsive element of gaming.
- Notably, nearly 90% of the advertisements did not include any responsible or problem gambling language. No advertisements for gambling-themed games on SNS included responsible or problem gambling language.
- The advertisements often promoted specific benefits when marketing their games, including promotional offerings (e.g., free coins/chips, free deposit with sign-up), ease of sign-up and use, a good game play experience, and the experience of a real gambling game.
- Many of the advertisements were considered likely to appeal to young adults and adolescents, in addition to older adults. Some were considered likely to appeal to children, particularly those with bright colours and cartoon-like human and animal representations.
- Most advertisements were considered to not be targeting a specific gender, but those aimed at men generally contained sexualized imagery or sports-related imagery.

The Technological Convergence of Gambling and Gaming: A Typology of Common Features

Overview

Gambling and gaming activities are known to share various features of play and presentation. However, to date there have been no comprehensive classification models or frameworks to identify their important areas of conceptual overlap. This has led to inconsistency in the use of terminology and conceptualisation to refer to these activities. In this section, the question is raised: *In what ways are gaming and gambling activities becoming more similar, and how should we classify these points of intersection?* To address this question, the aim of this section was to create a typology which captured the key elements of the convergence between gambling and gaming. This typology intends to describe the common definitional elements of both gambling and gaming activities, and identify the structural features that inhabit known overlaps. Specific, detailed practical examples of each activity will accompany this typology. The typology was developed by reviewing literature on gaming, simulated gambling and online gambling, as well as by the process of identifying a range of typical gaming and gambling activities available in Australia for analysis. This undertaking also recognises the contribution of pre-existing models of simulated gambling (e.g., gambling-themed games) in academic writing as well as relevant codes and legislation.

Background

Definitions

This section provides some basic definitions of gaming and gambling in order to ensure clarity and consistency of language employed in the following brief background review and typology. It is important to acknowledge prevailing legal and other policy definitions of gambling and gaming activities, as these definitions are often referred to in research papers, albeit with some varying consistency.

The Interactive Gambling Act 2001

The Interactive Gambling Act 2001 and its amendments outline the legal constituents of online gambling and gaming services that will be adopted for this typology. Notably, this legislation addresses issues related to the role of skill in certain activities, including whether to distinguish such activities as non-gambling-related. This information is intended to identify the types of regulated gambling services that cater to Australians. In this way, the legislation is limited as it does not necessarily specify in detail the range of unregulated gambling-like experiences available online. A 'gambling service' is defined in clause 4 to mean:

1. a service for the placing, making, receiving or acceptance of bets; or
2. a service the sole or dominant purpose of which is to introduce individuals who wish to make or place bets to individuals who are willing to receive or accept those bets; or
3. a service for the conduct of a lottery; or
4. a service for the supply of lottery tickets; or
5. a service for the conduct of a game, where:

- i. the game is played for money or anything else of value; and
 - ii. the game is a game of chance or of mixed chance and skill; and
 - iii. a customer of the service gives or agrees to give consideration to play or enter the game; or
6. a gambling service (within the ordinary meaning of that expression) that is not covered by any of the above paragraphs.

NB: Two individuals merely having a bet over the Internet would not be a gambling service.

Further clarification on the role of skill in games is provided:

The above reference to a game of mixed chance and skill is not intended to include games that would generally be regarded to be games of skill even though it could be argued that the outcome of the game might be affected by chance. For example ...a network electronic game like Quake, a game for one or multiple players, should be regarded as a game of skill even though it could be argued that there is an element of chance in relation to game play. For example there are elements of chance in that a player won't be aware of what another player might do and yet may act in anticipation of what the other player might do.

The classification of gambling content in video games

The retail classification guidelines for video games in the Australian context offer a useful perspective on the nature of gambling-like activities in games. The relevant legislation for guiding classification of retail video games is Guidelines for the Classification of Computer Games 2012 of the Classification (Publications, Films and Computer Games) Act 1995. All video games intended for commercial sale in Australian retail stores must first be reviewed by the Australian Office of Film and Literature Classification (OFLC), a federal government body responsible for providing consumer advice and warnings in relation to the age-appropriateness of video game material. Age-restricted content includes graphic depictions of violence, sex scenes, drug use and adult themes. A video game may not be sold without a classification rating and content descriptors displayed on the game disc and packaging. In principle, the classification system enables safeguards that attempt to restrict or minimize youth access to certain content in video games, either by classifying certain video games as unsuitable for sale to underage persons (i.e. under the age of 15 years), or by refusing classification of certain games to make their commercial sale illegal in Australia. Classifiable elements of video games include themes, violence, sex, language, drug use and nudity. Gambling content in Australia is classified within the category of 'themes'.

Consumer advice describes gambling content as 'simulated gambling', or as 'gambling references'. Other rating systems such as PEGI in Europe include 'gambling' as a separate category like 'sex' and 'violence'. Classification schemes generally take account of the tone, context and impact of each of these elements, including their frequency and intensity and their cumulative effect. Together, these indicators are used to provide an overall measure of a video game's 'impact' on the user. Australian guidelines state that the interactivity of video game material makes it a unique entertainment product, as compared to film and literature, which offer a more passive media experience. Interactivity in video games refers to the use of incentives and rewards for player input, manipulation of in-game features, and competitive intensity. Interactivity is an important consideration that the Board must take into account when classifying computer games. This is because there are differences in what some sections of the community condone in relation to passive viewing or the effects passive viewing may have on the viewer (as may occur in a film) compared to actively controlling outcomes by making choices to take or not take action.

Due to the interactive nature of computer games and the active repetitive involvement of the participant, as a general rule computer games are considered by Australian classification guidelines to have a higher impact than similarly themed depictions of the classifiable elements in film, and therefore greater potential for harm or detriment, particularly to minors. Interactivity may increase the impact of some content: for example, impact may be higher where interactivity enables action such as inflicting realistically depicted injuries or death or post-mortem damage, attacking civilians or engaging in sexual activity. Greater degrees of interactivity (such as first-person gameplay compared to third-person gameplay) may also increase the impact of some content. Interactivity includes the use of incentives and rewards, technical features and competitive intensity. Video games that feature drug use associated with incentive and rewards are Refused Classification (RC).

There are many documented cases of simulated gambling being identified in commercial video games in Australia. According to King et al. (2012), the OFLC Board had reviewed and authorized for commercial sale 102 video games with specific content descriptors referring to gambling content. This did not include games with gambling content in addition to higher impact material, for example, violence. In total, 69 of these video games were rated PG for Parental Guidance Recommended (suitable for ages 8+ years) and the remaining 33 as G for General (suitable for all ages). For example, in 2009 the video game *My Sims* (Electronic Arts) was classified G with the consumer advice that it contained 'very mild simulated gambling' (OFLC, 2009). The video game features a casino area where players can place bets with coins to play basic card games. Higher-impact material (e.g., violence) generally takes precedence over lower impact material in deciding the classification rating of a video game and its consumer advice (OFLC, 2008).

In April 2015, Michael Keenan, the Minister for Justice, announced that Australia would officially begin trialling a new system to reduce the burden of reviewing currently being placed upon the Classification Board. Australia will join the International Age Ratings Coalition (IARC), a globally unified age ratings classification system. The implication is that digital and mobile games may be classified using this system, as opposed to going through the traditional process with the Classification Board. The system involves having game developers complete a short questionnaire about the content of their video game. The system uses this information to determine an age rating based on the country's guidelines.

In summary, simulated gambling has been identified in some commercial video games. Generally, this material has been viewed as mild and non-interactive, and therefore suitable for a youth audience. The guiding legislation for retail classification of games does not specifically refer to gambling, however Australia is joining the IARC, which sets out guidelines for simulated gambling content. Based on current classification guidelines, there are no age-related barriers for entry and access to simulated gambling in games.

Other rating systems for simulated gambling

Listed below are the two most used international rating systems outside Australia and their rating classifications that correspond to gambling-related material.

Entertainment Software Rating Board (ESRB) – Americas

Classification: TEEN

Description: Content is generally suitable for ages 13 and up. May contain violence, suggestive themes, crude humour, minimal blood, simulated gambling and/or infrequent use of strong language.

Pan European Game Information (PEGI) – Europe

Classification: PEGI 12

Description: Content is generally suitable for ages 13 and up. May contain violence, suggestive themes, crude humour, minimal blood, simulated gambling and/or infrequent use of strong language.

Online app store classifications

Social gaming refers to games that are connected to social media sites, or through smartphone applications ('apps'). These games are immensely popular and are available for download or purchase from the Apple App Store or Google Play Store or equivalent. One of the most popular subtypes of social games are 'social casino games', referring to games which simulate casino or other gambling (or betting) activities. Social casino games are distinct from gambling activities in that they do not require payment to play or provide a direct payout or monetary prizes (Gainsbury, Hing, Delfabbro, & King, 2014).

In the Apple App Store, there are over 200 titles listed under a section designated ‘casino’, although this includes only the most popular titles (i.e., the precise number of available games is not clear). As one example, the game *Zynga Poker* is listed on this page. This app carries an accompanying description: “This game is intended for an adult audience and does not offer real money gambling or an opportunity to win real money or prizes. Practice or success at social gaming does not imply future success at real money gambling.” It is also rated “12+ years” for “frequent/intense simulated gambling”. Its description of this rating is: “Applications in this category may also contain infrequent mild language, frequent or intense cartoon, fantasy or realistic violence, and mild or infrequent mature or suggestive themes, and simulated gambling which may not be suitable for children under the age of 12.” This rating system is developed, maintained, and implemented in-house by Apple.

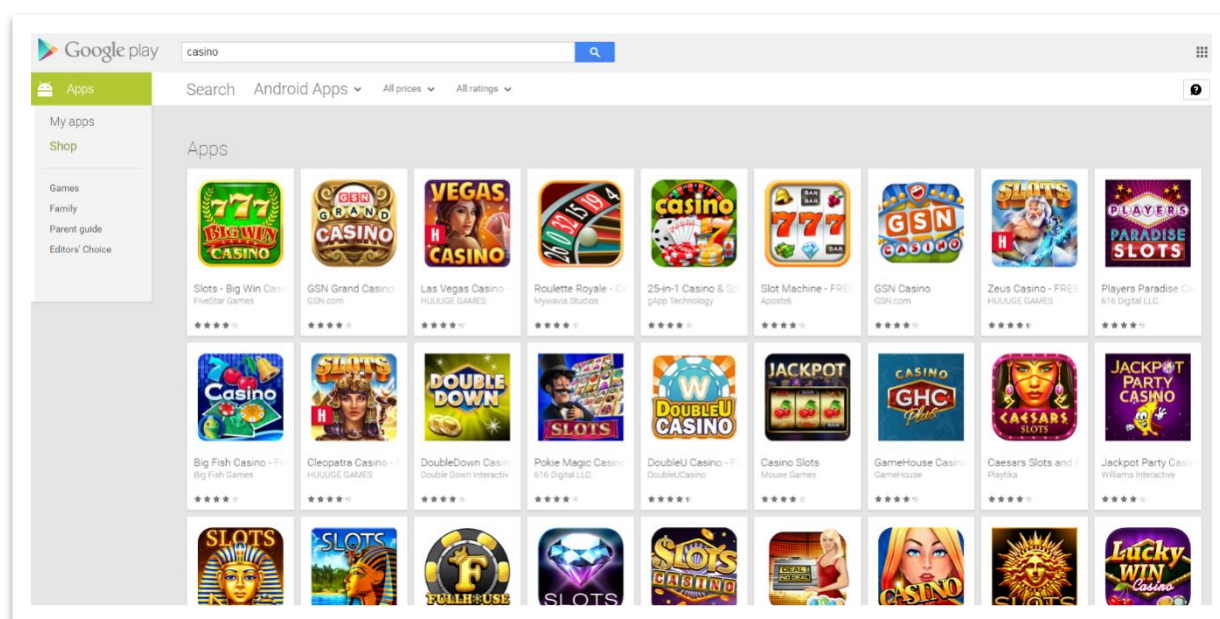


Figure 38: A screenshot of casino games listed on the Google Play Store.

In the Google Play Store, like the Apple Store, it is not clear how many social casino games or other games with gambling elements are available. A search of ‘casino’ using the in-built search engine yielded hundreds of results (Figure 38). As one example, the game *Slots - Big Win Casino*™ is listed as “a slot simulator for entertainment purposes only”. It is noted to be “free to play” with the option to purchase “additional coins with in-app transactions”. The existing Google Play ratings system includes four levels: (a) Everyone, (b) Low maturity, (c) Medium maturity, and (d) High maturity (see Figure 39). It is unclear how these levels are differentiated on the available information. *Slots - Big Win Casino* has a content rating of “mature” (no level specified) with content descriptors of “simulated gambling”. This is consistent with the Google Play classification guidelines:

Content Description	Everyone	Low Maturity	Medium Maturity	High Maturity
Apps that include gambling themes or simulated gambling	X	X	✓	✓
Apps that facilitate real gambling	Not permitted on Google Play			

Figure 39: Google Play gambling-related content classification

According to the Google Play website, from May 2015, the above Google Play rating scale will be replaced with their local rating on the Play Store. Territories that are not covered by a specific International Age Rating Coalition (IARC) rating authority will be assigned an age-based, generic rating. Under this system, all new apps and updates to existing apps will need to have a completed content rating questionnaire before they can be published.

Overall, based on classification approaches within the two most popular online app stores, games with gambling-like elements or simulation are classified as “casino” games. They carry descriptors that highlight they offer “intense simulated gambling experiences” and inform (somewhat indirectly) that they are not intended to have relationship to financial forms of gambling. They are considered mature content not intended for children.

Other conceptual definitions

This section will provide a brief overview of some recent discussion and formulation of simulated gambling. A collection of academic review papers have provided some guiding definitions and criteria for considering simulated gambling activities (see Literature Review for an extensive overview). It will be evident that there are some difficulties in classifying gaming and gambling activities according to discrete genres or types given the degree of blending that can occur across activities. Rather than employ names to designate categories of gaming, which may be imprecise (e.g., “gambling-like game”), it may be more appropriate to consider the core features of the activity.

According to King et al. (2012): Gambling content in video games may be categorized according to the following three categories: (1) *standard gambling simulation*, a digitally simulated interactive gambling activity that is structurally identical to the standard format of an established gambling activity, such as blackjack or roulette (i.e., a social casino game); (2) *non-standard gambling simulation*, an interactive gambling activity that involves the intentional wagering of in-game credits or other items on an uncertain outcome, in an activity that may be partially modelled on a standard gambling activity but which contains distinct player rules or other structural components that differ from established gambling games (e.g., a novel card or dice games in a fictional fantasy game); (3) *gambling references*, the appearance of non-interactive gambling material, such as gambling-related characters or storylines, or gambling-related paraphernalia within the context of the video game (e.g., an action game set in a casino environment where the player may observe gambling behaviours). These categories were proposed as an attempt to differentiate ‘pure’ simulations from hybrid-style games. The former is often considered to be more appealing to gamblers given its parity to real world or land-based gambling activities, whereas the latter is intended for general entertainment purposes and relies

on the existing popularity of gambling-themes and mechanics, without a direct replication of the experience, for example, spinning wheels, lucky dips, or pick-a-card.

In another paper by King et al. (2014), simulated gambling is defined as:

“...a digitally simulated interactive gambling activity that does not directly involve monetary gain but is otherwise structurally identical to the standard format of a gambling activity due to its wagering features and chance-determined outcomes of play. Although the boundaries between gambling and video-gaming are becoming increasingly blurred (for example, gaming features may be found in some gambling-like activities, and vice versa), simulated gambling may be distinguished from many forms of video-gaming (e.g., shooting action games, role-playing games) because in video-games there is a clear relationship between player strategy or actions and outcomes.” (p. 305)

In the above definitions, it is explained that monetisation differentiates gambling from simulated gambling. This argument is further refined by Gainsbury, Hing et al. (2014), who have proposed a taxonomic model of social gambling activities according to the following key features:

1. the requirement for monetary payment;
2. the role of chance and skill;
3. the game platform; and
4. the centrality of the gambling theme to the game.

Figure 40 below summarises how the presence of each of the following features corresponds to a categorical designation of an online game or activity. Gainsbury, Hing et al. (2014) explain that:

“The term ‘gambling’ has legal implications and therefore, should not be used to refer to games that do not meet the requirement of consideration, chance, and prize. The use of terms such as ‘non-monetary gambling’ or ‘free-play gambling’ should also be avoided to prevent confusion. As the term ‘gambling’ has a specified meaning and ‘gambling-themed’ is cumbersome and open to misinterpretation, it is proposed that the term ‘social casino game’ be used to refer to games which are based on or interact with social networks and that simulate gambling activities.” (p. 203)

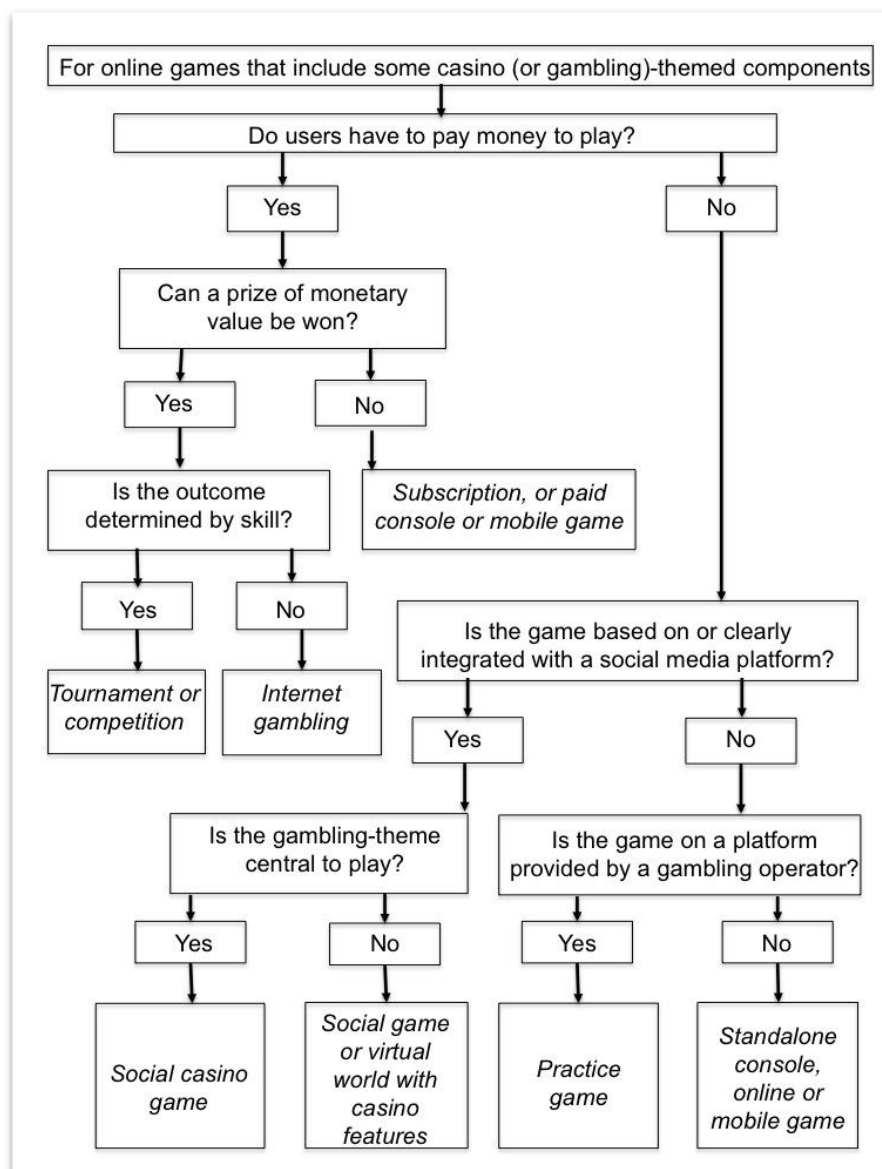


Figure 40: A taxonomy of online games with gambling-themed components by Gainsbury, Hing et al. (2014)

The proposed typology of features

To date there have been no comprehensive classification models or frameworks to identify the overlap of gaming and gambling, despite several legislative and other frameworks for considering such activities in Australia. This section presents a typology designed to capture the key elements of the convergence between gambling and gaming. It was intended that the typology would describe the common definitional elements of both gambling and gaming activities, and identify the structural features that inhabit known and potential overlaps.

The presented typology refers to the core components of gambling and gaming activities. The purpose of this typology was to summarise the defining features of both gambling and gaming activities and conceptualise the varying features that comprise their overlap. This typology was developed by reviewing literature on gaming, simulated gambling, and online gambling (see Literature Review), as well as by the process of identifying a range of typical gaming and gambling activities available in Australia for analysis. Specific, detailed examples of each activity will accompany this typology in subsequent sections. This undertaking also recognises the contribution of pre-existing models of simulated gambling in academic writing as well as relevant codes and legislation. The typology is presented in an extended list format, followed by a tabular format (Table 1) for ease of reference and use. The tabular format was designed with the purpose of enabling practical assessment of features of gaming and gambling activities.

Typology: Features of gambling and games

Interactivity (SELECT ONE)

- interactive: active player involvement and interaction with game stimuli
- non-interactive: passive viewing of a game or others playing the game

Monetisation (SELECT AS MANY AS APPLY)

- free/earned currency of game contextual value only (e.g., progression, completion)
- free/earned currency that yields loyalty points exchangeable for credit, gifts or items of monetary value
- optional purchasable “vanity”/cosmetic items that do not impact the game mechanics
- optional purchasable currency for playing purposes (e.g., progression, completion)
- optional purchasable currency that can be exchanged for gifts or other items
- mandatory entry fee to play

Additional qualifiers:

1. Currency redeemable for money (or equivalent, e.g., Bitcoin)
2. Currency and/or account indirectly gift-able/tradeable:
 - a. Via external trading services (e.g., Craigslist, forums)
 - b. Trading using a game ‘exploit’: Player strategy that involves a game populated only by two players who have agreed to an arrangement where one player will pay the other to lose repeatedly such that an amount of virtual currency is unilaterally transferred from the payee to the payer.

Betting/wagering mechanics (SELECT ONE)

- no betting/wagering options
- option to place wagers or bets on in-game outcomes

Role of skill/luck in determining outcomes (SELECT ONE)

- outcomes are entirely determined by skill (i.e., competition)
- combination of randomly generated or predetermined outcomes and skill-based outcomes
- outcomes are entirely determined by chance or algorithms (i.e., draw, lottery)

Outcome measurement (SELECT AS MANY AS APPLY)

- no indicator of outcome or progression

- nonfinancial indicators (e.g., virtual currency, points, unlocks, ranks, declaration of a winner)
- financial outcome

Structural fidelity (SELECT ONE)

- minimal or no resemblance of recognised gambling activity
- some resemblance to known gambling activity
- high level of parity to known gambling activity

Additional qualifier:

1. Permits cheating or other exploits (e.g., save/reload)
2. Outcomes determined by avatar characteristics (e.g., attribute: Luck)

Context (SELECT ONE)

- activity is a stand-alone game
- activity is positioned within a larger game
- activity is positioned within a financial gambling activity

Centrality (SELECT ONE)

- gambling activity is primary and exclusive activity
- gambling activity is secondary and mandatory
- gambling activity is secondary and optional

In-game Advertising (SELECT ONE)

- no advertising material
- presence of advertising for simulated gambling activities
- presence of brand-only advertising for gambling operators (online or land-based)
- presence of advertising for financial gambling activities (online or land-based)

Additional qualifier:

1. Social media integration (i.e., the game allows interaction with other players within the game, and/or encourages users to share their progress, invite others to join, or promote the game)

Table 8: A framework for conceptualising gambling and gambling-like features in gaming activities (template version)

FEATURE	TYPE 1			TYPE 2			TYPE 3		
Interactivity	Non-interactive			Interactive					
Monetisation level	Free/earned currency			Purchased currency			Financially redeemable		
	context	loyalty	exchange	cosmetic	play	exchange	no	indirect	yes
Betting/wagering mechanics	No betting			Wagering or betting options					
Determination of outcome	Chance-determined			Combination of chance and skill			Predominantly skill-based		
Measurement of outcome	No quantified indicator			Non-financial (currency, points, XP, unlocks)			Financial		
Structural fidelity	No resemblance			Some resemblance			High parity		
Context	Stand-alone product			Offered within financial gambling product or context					
Centrality	Primary and exclusive			Secondary					
				mandatory		optional			
Advertising	None			Advertising					
				games	\$\$\$ brand	\$\$\$ gamb			

Table 8 provides a template version of a tool that may be used as a ‘checklist’ for assessing the features of digital gaming and gambling activities. It has been designed to encompass activities that may not meet the standard definition of gambling in its entirety but can incorporate some shared elements. It is possible for activities to correspond to multiple types of each feature, and therefore it has flexibility in classifying certain aspects of the activity. One advantage of this tool is that it enables classification of activities that bridge or converge on multiple elements seen in both gambling and gaming, but without the constraints of taxonomic terminology (i.e. labels) that can potentially misrepresent an activity. This checklist focuses on features rather than categories of activities, given the commonly observed blurring that occurs in gambling and gaming. The following sections and tables will present practical examples of this template being used to classify the various elements observed in common gaming or gambling activities in Australia.

Table 9: A comparison of core definitional elements of gambling and games

. FEATURE	TYPE 1			TYPE 2			TYPE 3		
Interactivity	Non-interactive			Interactive					
Monetisation level	Free/earned currency			Purchased currency			Financially redeemable		
	context	Loyalty	exchange	cosmetic	play	exchange	no	indirect	yes
Betting/wagering mechanic	No betting			Betting options					
Determination of outcome	Chance-determined			Combination of chance and skill			Predominantly skill-based		
Measurement of outcome	No quantified indicator			Non-financial (points, XP, unlocks)			Financial		
Gambling structural fidelity	No resemblance			Some resemblance			High or exact parity		
Context	Stand-alone product			Offered within financial gambling product or context					
Centrality	Primary and exclusive			Secondary					
				mandatory		optional			
Advertising	None			Advertising					
				games	\$\$\$ brand	\$\$\$ gamb			

NB: Green shading connotes video gaming features; Red shading connotes gambling features.

Table 9 provides an overview of the core areas of gaming and gambling. Using this tool, the core elements of gambling include the betting of currency (i.e., purchasable and redeemable) on a predominantly chance-determined outcome. Gambling as an activity is not necessarily “interactive” by definition, given that participants of activities such as lotteries may only purchase a ticket with automatically generated numbers. However, some gambling activities (e.g., poker or blackjack) may be considered ‘interactive’ because they involve continuous player input and decision-making within a single betting event. In contrast, gaming involves an interactive skill-based activity with rules that govern progression and non-financial rewards. Gaming is considered interactive because of the requirement for real-time player input (e.g., via a controller) to affect elements of play in the game. Games without rules or discrete outcomes are considered to be free play. Additional features in the table are not viewed as definitional but provide additional structural and contextual information about the activity, which aids in differentiating the activity in such a way as to understand factors such as accessibility and audience.

Table 10: EXAMPLE 1: Conceptualising gambling-related experiences in the massively multiplayer online role-playing game Runescape

FEATURE	TYPE 1	TYPE 2	TYPE 3
Interactivity	Non-interactive	Interactive	
Monetisation level	Free/earned currency	Purchased currency	Financially redeemable
	context loyalty exchange	cosmetic play exchange	no indirect yes
Betting/wagering mechanics	No betting	Wagering or betting options	
Determination of outcome	Chance-determined	Combination of chance and skill	Predominantly skill-based
Measurement of outcome	No quantified indicator	Non-financial	Financial
Structural fidelity	No resemblance	Some resemblance	High parity
Context	Stand-alone product	Offered within financial gambling product or context	
Centrality	Primary and exclusive	Secondary	
		Mandatory optional	
Advertising	None	Advertising	
		games \$\$\$ brand \$\$\$ gamb	

Table 10 presents a summary of the virtual game of *Runescape*. The game has a mini-game called the *Squeal of Fortune*¹ (Figure 41) which enables players to place bets using virtual currency that may be either free or purchased with real money (see Figures 42 & 43) on a chance-based outcome (spinning wheel). The prize pool consists of virtual items. The currency in *Runescape* is only redeemable indirectly via private transactions with other players, which can be cumbersome and is unregulated. There is also a player-built player-to-player betting system that is unregulated and not permitted under the game's terms of use. This activity meets the wagering and betting aspect of gambling, as well as the chance-determined outcome, but lacks a clear element of financial redemption, therefore this activity is not likely to meet a legal definition of gambling.

¹ *Squeal of Fortune* was replaced by another mini-game activity in 2014. The replacement activity also contains a chance-based draw element.

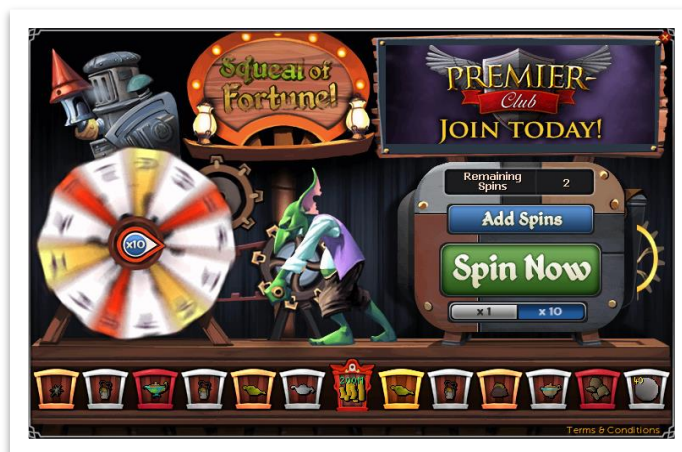


Figure 41: The Squeal of Fortune game in RuneScape

Figure 42: An explanation of Bonds, a type of currency in RuneScape



Figure 43: A guide to Bonds in RuneScape

Table 11: EXAMPLE 2: Conceptualising gambling-related experiences in the social casino game Zynga Poker

FEATURE	TYPE 1			TYPE 2			TYPE 3		
Interactivity	Non-interactive			Interactive					
Monetisation level	Free/earned currency			Purchased currency			Financially redeemable		
	context	loyalty	exchange	cosmetic	play	exchange	no	indirect	yes
Betting/wagering mechanics	No betting			Wagering or betting options					
Determination of outcome	Chance-determined			Combination of chance and skill			Predominantly skill-based		
Measurement of outcome	No quantified indicator			Non-financial			Financial		
Structural fidelity	No resemblance			Some resemblance			High parity		
Context	Stand-alone product			Offered within financial gambling product or context					
Centrality	Primary and exclusive			Secondary					
				mandatory		optional			
Advertising	None			Advertising					

The game Zynga Poker (Table 11) is a social media platform-based simulator of a poker variant. The game is interactive, allows purchasable virtual currency in addition to its free virtual currency (Figures 44, 45), and involves an element of skill comparable to casino card games (i.e., there are optimal choices under certain conditions). Players can be prompted to spend money on currency. There is no direct option for players to cash out their winnings; however, it is possible for players wanting to sell their currency to other players to join private game lobbies and deliberately lose hands in order to ‘gift’ currency. In poker involving real money, this process is referred to as “chip dumping”. This process is slow and unregulated and offers no player protections. The game developer has reported that this activity will have the consequence of being banned if caught. The game has a high structural fidelity to card games, and also includes a series of mini-games (additional activities) that can be engaged in concurrently (Figure 46). In summary, the game involves betting and chance but lacks a complete monetisation cycle that defines legal gambling. The game is integrated with social media and therefore players receive notifications and advertising for associated products. Other social casino games (e.g., Slotomania, an electronic gaming machine simulator; Figure 47) are largely comparable to this activity in terms of endorsed indicators.



Figure 44: Zynga Poker example of free in-game reward

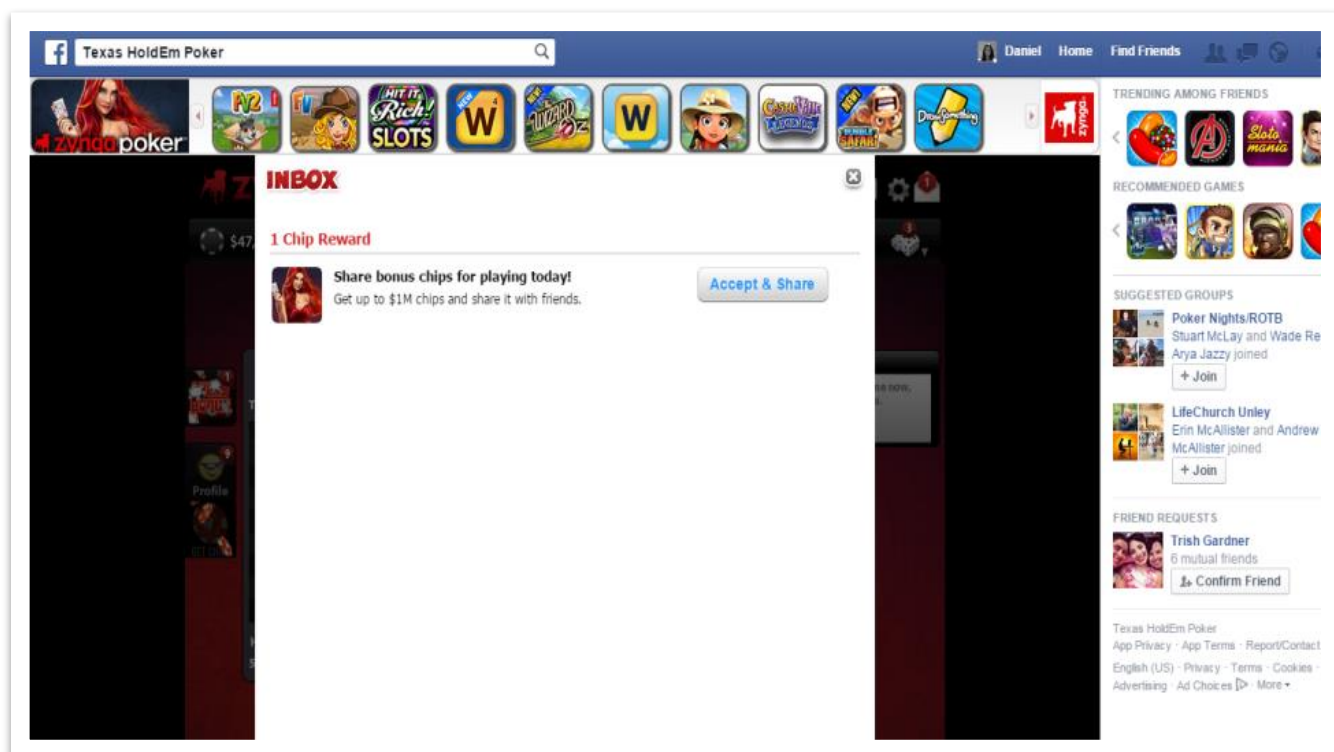


Figure 45: Zynga Poker: example of purchasable virtual currency

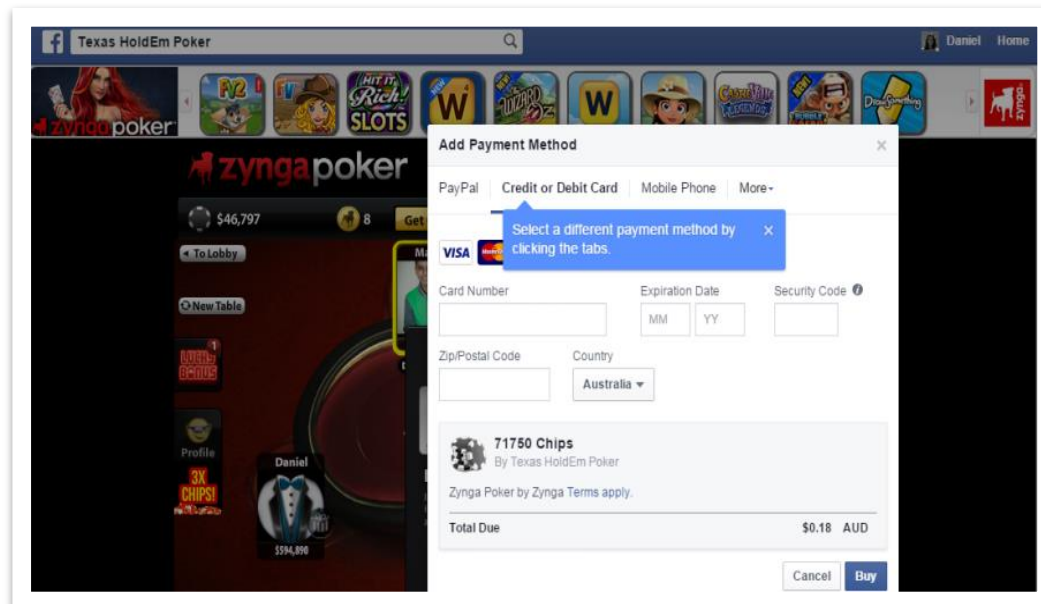


Figure 46: Zynga Poker: example of concurrent simulated gambling activities



Figure 47: The game Slotomania

Table 12: EXAMPLE 3: Conceptualising gambling-related experiences in the social casino game myVEGAS Slots

FEATURE	TYPE 1	TYPE 2	TYPE 3
Interactivity	Non-interactive	Interactive	
Monetisation level	Free/earned currency	Purchased currency	Financially redeemable
	context loyalty exchange	cosmetic play exchange	no indirect yes
Betting/wagering mechanics	No betting	Wagering or betting options	
Determination of outcome	Chance-determined	Combination of chance and skill	Predominantly skill-based
Measurement of outcome	No quantified indicator	Non-financial	Financial
Structural fidelity	No resemblance	Some resemblance	High parity
Context	Stand-alone product	Offered within financial gambling product or context	
Centrality	Primary and exclusive	Secondary	
		mandatory optional	
Advertising	None	Advertising	
		games \$\$\$ brand \$\$\$ gamb	

The game *myVEGAS Slots* (Table 12) is a social media platform-based simulator of a poker variant (Figure 48). The game is interactive, allows purchasable virtual currency in addition to its free virtual currency, and involves chance-determined outcomes like an electronic gaming machine (Figure 49). Players can be prompted to spend money on currency. There is no direct option for players to cash out their winnings, however it is possible for players to earn loyalty points that can be exchanged for hotel rooms or other gifts or items. The game contains advertising for real world casinos (Figure 50). In summary, the game involves betting and chance and includes a loyalty point system to earn real world rewards. The game is integrated with social media and therefore players receive notifications and advertising for associated products.

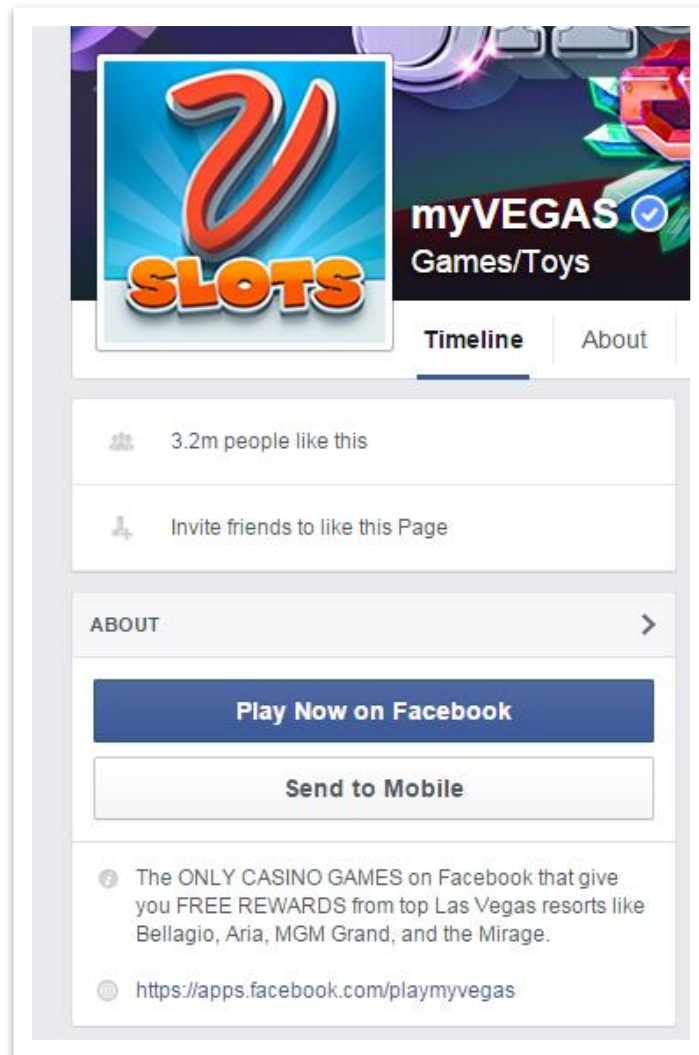


Figure 48: myVEGAS Slots promotion



Figure 49: myVEGAS Slots in-game rewards and mechanics

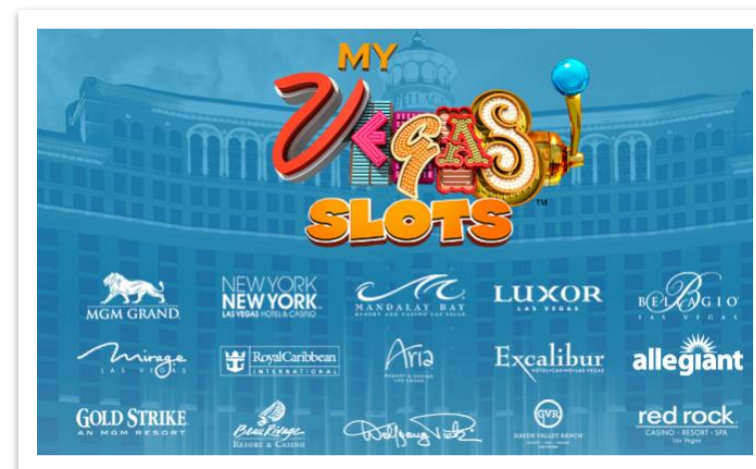


Figure 50: Casino advertising in myVEGAS Slots

Table 13: EXAMPLE 4: Conceptualising gambling-related experiences in the console video game Red Dead Redemption

FEATURE	TYPE 1	TYPE 2	TYPE 3
Interactivity	Non-interactive	Interactive	
Monetisation level	Free/earned currency	Purchased currency	Financially redeemable
	context loyalty exchange	cosmetic play exchange	no indirect yes
Betting/wagering mechanics	No betting	Wagering or betting options	
Determination of outcome	Chance-determined	Combination of chance and skill	Predominantly skill-based
Measurement of outcome	No quantified indicator	Non-financial	Financial
Structural fidelity	No resemblance	Some resemblance	High parity
Context	Stand-alone product	Offered within financial gambling product or context	
Centrality	Primary and exclusive	Secondary	
		mandatory optional	
Advertising	None	Advertising	
		games \$\$\$ brand \$\$\$ gamb	

Red Dead Redemption (Table 13) is a Western-themed violent action story-based game that offers a side activity involving gambling with other players. All currency is virtual and there is no ability to purchase additional currency. The game involves a realistic simulation of play, decision-making, and outcomes of standard poker card games. This content is considered a 'side activity' (i.e., not required for game progress) and has no connection to the wider playing community, such as via social media. The primary incentive to play is to earn virtual currency that can be spent in other areas of the game, as well as the competitive element of rising up the leaderboards. This activity would not be considered a legally recognised form of gambling. An example of the simulated gambling in *Red Dead Redemption* is shown in Figure 51. Similar examples of this type of activity present in stand-alone video game are provided in Figures 52-56.



Figure 51: Simulated gambling in the game in the game Red Dead Redemption (Xbox 360)



Figure 52: Simulated gambling in GTA: San Andreas (Xbox)



The Witcher: A Game Of Dice

Figure 53: Simulated gambling in the game *The Witcher* (PC)



Figure 54: Simulated gambling in the game *Far Cry 3* (Xbox 360)

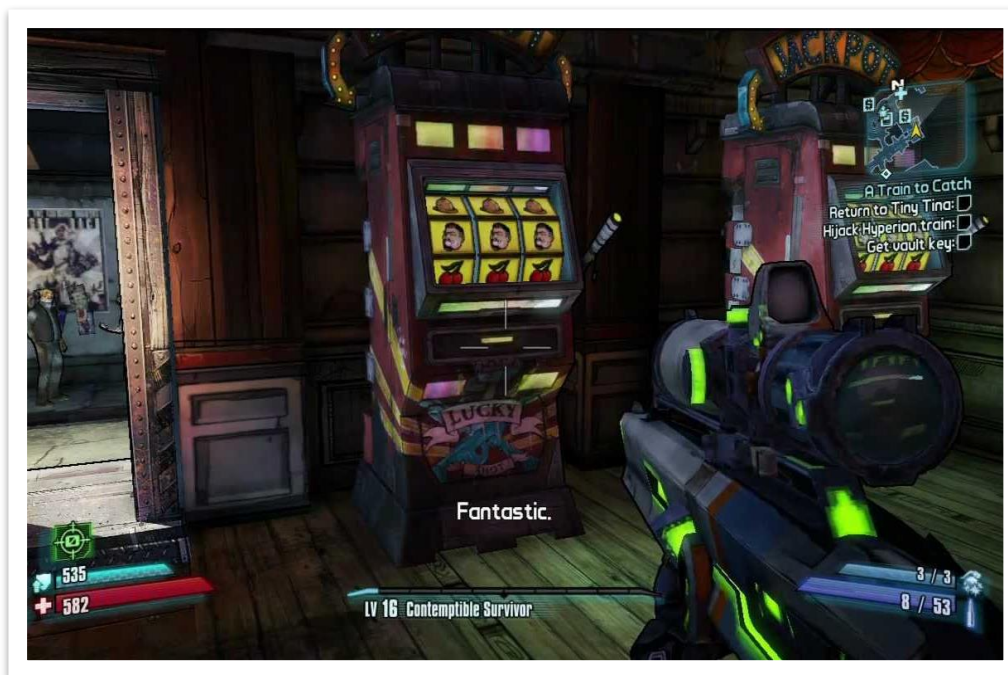


Figure 55: Simulated gambling in the game Borderlands 2 (Xbox 360)



Figure 56: Simulated gambling mini-game in the game Trials Frontier – slot machine

Table 14: EXAMPLE 5: Conceptualising gambling-related experiences in a console video game Texas Hold' Em (TikGames)

FEATURE	TYPE 1	TYPE 2	TYPE 3
Interactivity	Non-interactive	Interactive	
Monetisation level	Free/earned currency	Purchased currency	Financially redeemable
	context loyalty exchange	cosmetic play exchange	no indirect yes
Betting/wagering mechanics	No betting	Wagering or betting options	
Determination of outcome	Chance-determined	Combination of chance and skill	Predominantly skill-based
Measurement of outcome	No quantified indicator	Non-financial	Financial
Structural fidelity	No resemblance	Some resemblance	High parity
Context	Stand-alone product	Offered within financial gambling product or context	
Centrality	Primary and exclusive	Secondary	
		mandatory optional	
Advertising	None	Advertising	
		games \$\$\$ brand \$\$\$ gamb	

Texas Hold' Em (Table 14) is a console video game simulator of the poker variant, available on the Xbox console (Figure 57). This game is stand alone and has a central gambling theme. It is promoted and rated as a simulated gambling product under retail classification guidelines. The game involves betting using virtual currency and there is no monetisation. The game has no advertising components and lacks social media integration.



Figure 57: Simulated gambling in the Xbox game Texas Hold Em

Table 15: EXAMPLE 6: Conceptualising gambling-related experiences in an e-sports betting portal Esports Betting

FEATURE	TYPE 1	TYPE 2	TYPE 3
Interactivity	Non-interactive	Interactive	
Monetisation level	Free/earned currency		
	context	loyalty	exchange
		cosmetic	play
			exchange
		no	indirect
			yes
Betting/wagering mechanics	No betting	Wagering or betting options	
Determination of outcome	Chance-determined	Combination of chance and skill	Predominantly skill-based
Measurement of outcome	No quantified indicator	Non-financial	Financial
Structural fidelity	No resemblance	Some resemblance	High parity
Context	Stand-alone product	Offered within financial gambling product or context	
Centrality	Primary and exclusive	Secondary	
		mandatory	
			optional
Advertising	None	Advertising	
		games	
		\$\$\$ brand	\$\$\$ gamb

Table 15 shows the example of an online betting portal that enables users to place bets on the outcome of esports games (i.e., semi-professional and professional video-gaming tournaments that are broadcast online) (Figures 58-61). Users do not play the games themselves and therefore rely on knowledge of the competition and its competitors to make a decision on the possible outcome. It is possible to play using free currency (for 'practice') or to purchase credits to gamble. The writer contacted the online help and received instructions on payment. Bitcoin was the suggested currency for play in Australia. This activity meets the legal definition of gambling and gambling service. Other examples of this activity include Luxbet esports betting portal and Unikrn (Figure 62).

The screenshot displays the E-sport bets website. At the top, the logo "E-sport bets" is visible alongside navigation links: ABOUT US, REGISTRATION, CONTACTS, F.A.Q, and TABLE. A user authentication section on the right includes a profile icon, the word "AUTHOR", and a "FORGOT PASSWORD" link.

The main content area is titled "HOME » ABOUT US". It contains the following text:

This project was created specifically to support e-sport and designed to increase interest to matches from the biggest tournaments and leagues in the world. On our pages you`ll find ones you are interested in and after matches end – you could find out the exact result, as recorded by the organizers.
egamingbets.com is the trade mark of ipibi.com IP International Business Invest I.I.B.I. S.R.L.
 Zip: 11 501
 City: Los Yoses, Montes de Oca
 Province: San Jose
 Country: Costa Rica
 Address: From Automercado 125 meters south, second house on the right
 Activities are performed in accordance with laws of Costa Rica
 tel: +506 40 003944

Below this, a message reads: "Good luck with the bets! Please, read [terms and conditions](#) before registering."

A "Video instruction:" link is provided. Below it is a screenshot of the website's registration form. The form includes fields for Login (pre-filled with "egamingbet"), Password, Confirm password, Email (pre-filled with "egamingbet"), Name, Surname, Day of Birth (with a date picker set to 01/01/2014), and a Country dropdown menu. A checkbox for "I agree with [terms and conditions](#) of the services" is checked. A yellow "Registration" button is at the bottom of the form. To the right of the form is a chat window titled "Chat (Online: 975, Guests: 132)" showing a list of messages. Below the chat is a "Support Online" button and social media icons for Facebook, Twitter, and YouTube. At the bottom, there are sections for "BONUSES" featuring "Win Asus Transformer Book" and "Win iPhone 6 on EgamingBets".

Figure 58: Purchasing options in E-sports bets

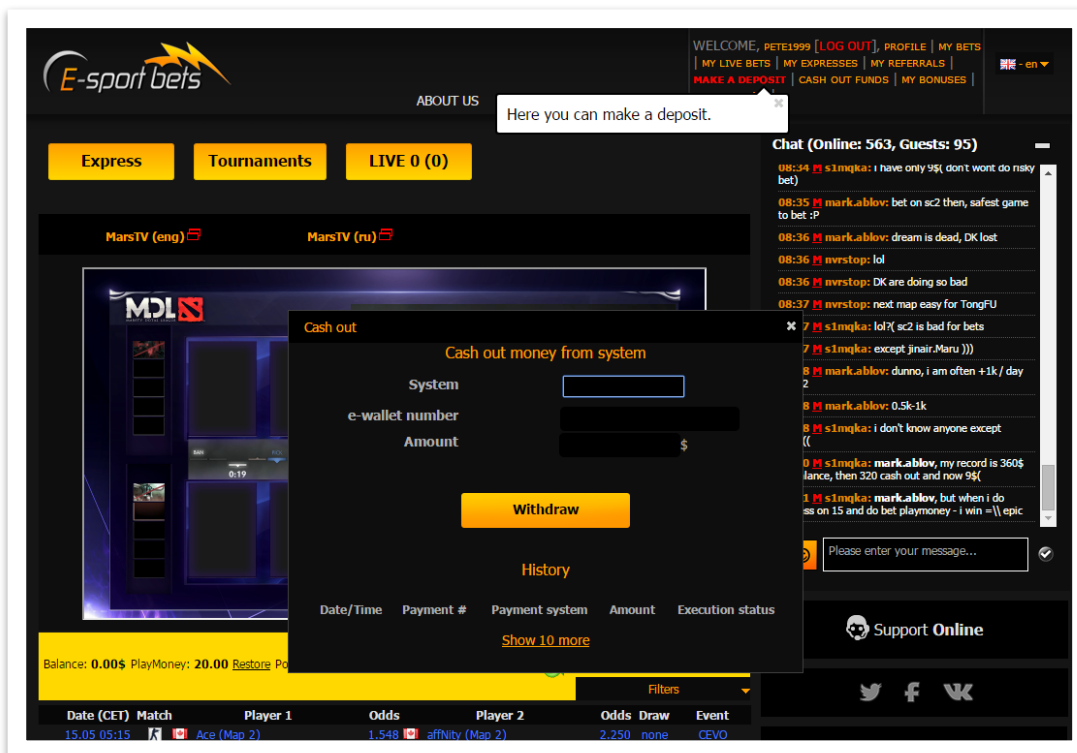


Figure 59: Cashing out in E-sports bets

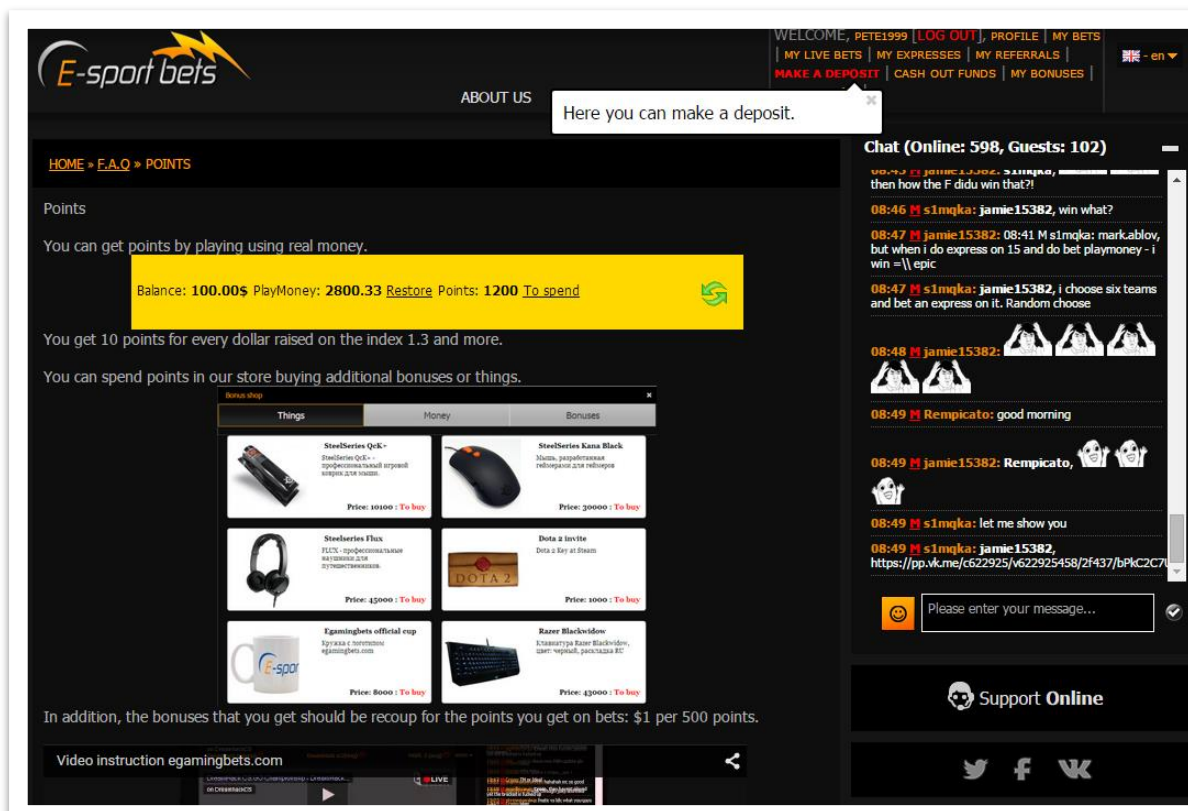


Figure 60: An overview of the free and financial currencies in Esports Bets

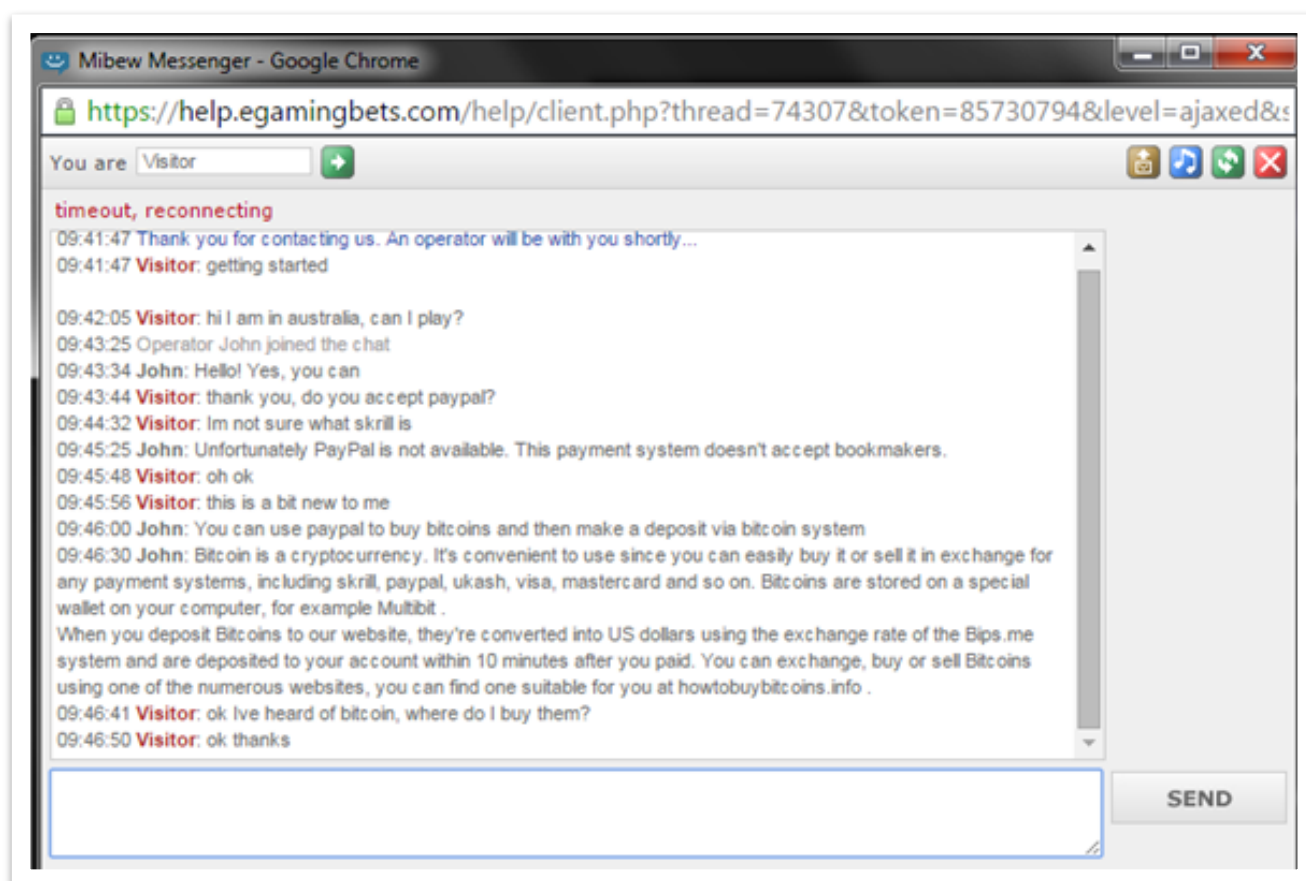


Figure 61: Online customer support offering payment instructions in Esports bets

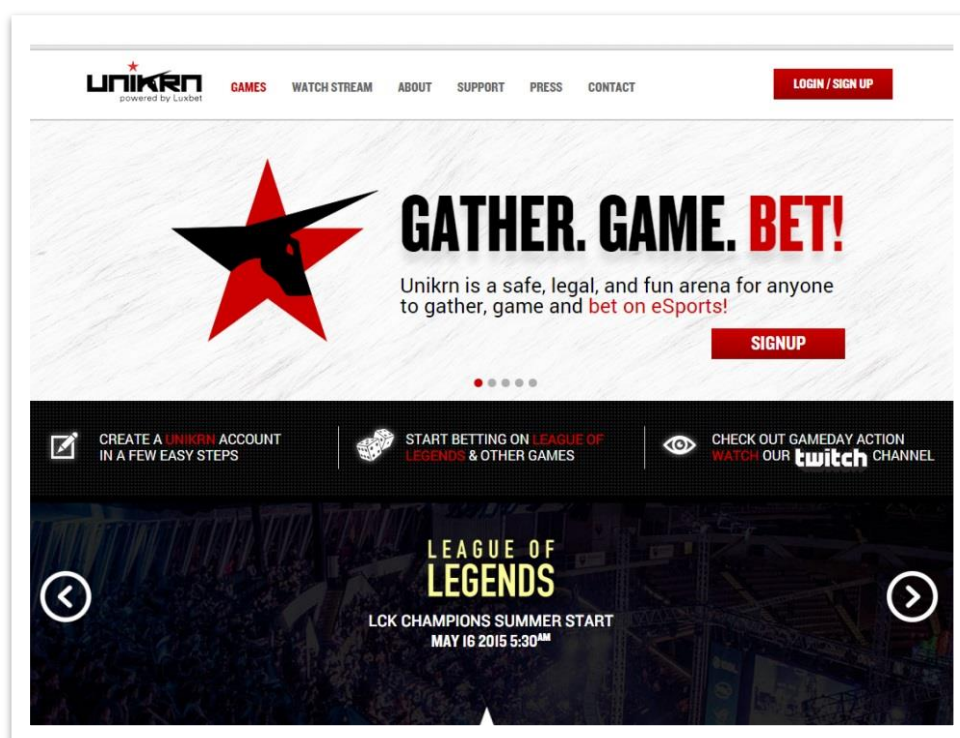


Figure 62: Unikrn: An online esports betting service

Table 16: EXAMPLE 7: Conceptualising gambling-related experiences in a skill gaming activity, Dollar Candy

FEATURE	TYPE 1			TYPE 2			TYPE 3		
Interactivity	Non-interactive			Interactive					
Monetisation level	Free/earned currency			Purchased currency			Financially redeemable		
	context	loyalty	exchange	cosmetic	play	exchange	no	indirect	yes
Betting/wagering mechanics	No betting			Wagering or betting options					
Determination of outcome	Chance-determined			Combination of chance and skill			Predominantly skill-based		
Measurement of outcome	No quantified indicator			Non-financial (points, XP, unlocks)			Financial		
Structural fidelity	No resemblance			Some resemblance			High parity		
Context	Stand-alone product			Offered within financial gambling product or context					
Centrality	Primary and exclusive			Secondary					
				mandatory		optional			
Advertising	None			Advertising					
				games	\$\$\$ brand	\$\$\$ gamb			

Dollar Candy (Table 16) is a skill gaming activity that involves interactive play and betting options. Players must purchase currency and pay an entry fee to compete with other players. Players are able to earn currency and redeem this for real money (Figure 63, 64). The game is predominantly skill-based and therefore has been described as a tournament. As its name implies, the game is largely skill-based.

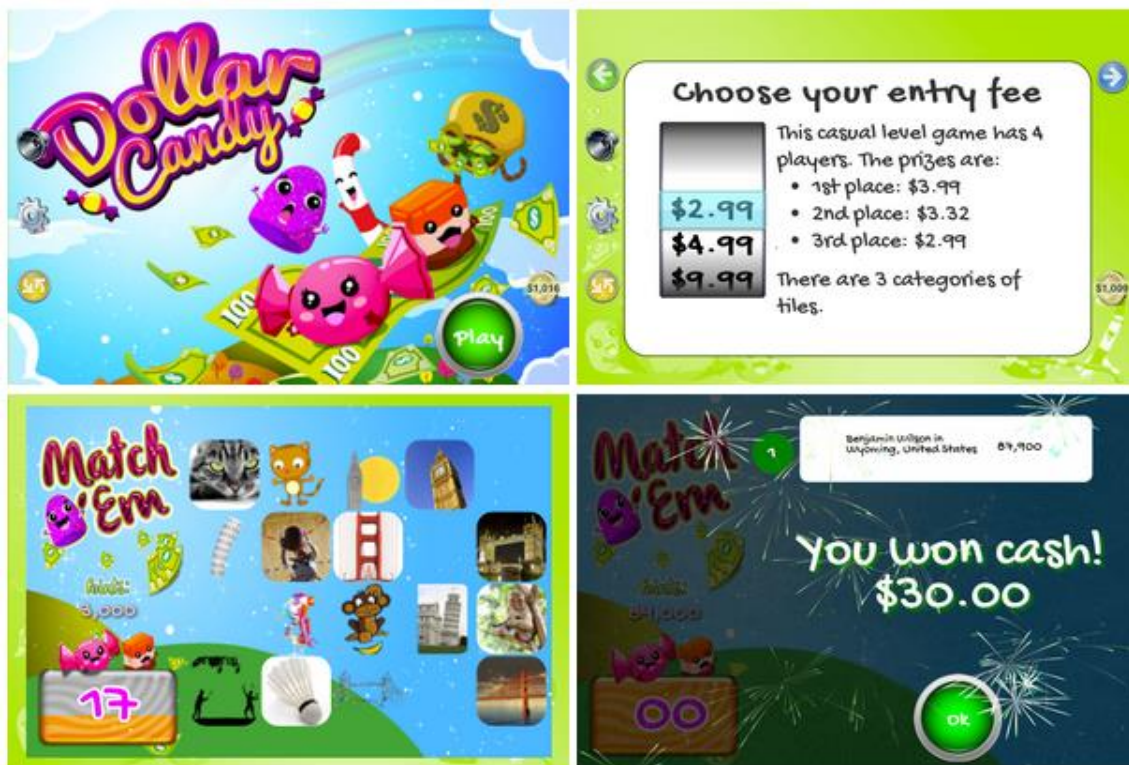


Figure 63: Dollar Candy: A skill game

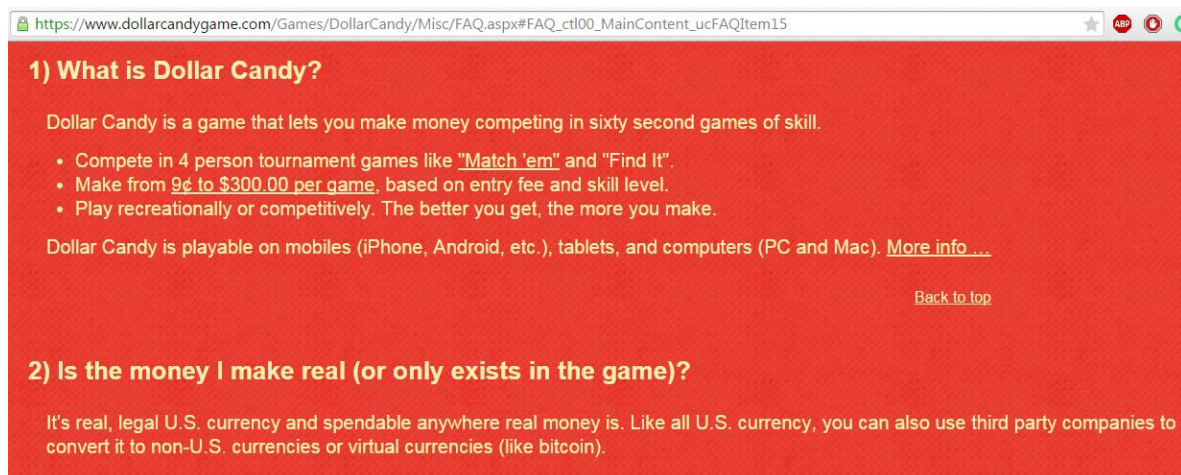


Figure 64: Dollar Candy: Information page

Additional features in both gambling and gaming

It bears noting that there are a number of common features in gambling and gaming activities.

- Random number generators for rewards
- Variable reinforcement schedules
- Losses disguised as wins
- Visual and auditory cues for winning

It should be recognised that these features are not definitional elements of either gambling or gaming, but are commonly observed in both activities. These include (1) a randomly determined reward following either a chance-determined event in gambling (e.g., spin of a wheel) or a skill-determined play (e.g., defeating an in-game boss or level), (2) the variable ratio or interval payout schedule that creates uncertainty and expectation for the next reward payout, (3) the use of concurrent reward schedules that pair a large loss with a small gain in order to disguise a loss as a win, and (4) the use of technology-based effects (graphics, sounds) to create cues associated with the above features to condition player responses to these cues. These features are an important part of the discussion about convergence of gaming and gambling because they have long been used in both activities.

Potential innovations and future trends in gaming and gambling

Gambling and gaming activities will continue to innovate and evolve to suit consumer interests and preferences and aim to attract new players. One method of innovation for developers of each activity may be to examine the elements of other related activities and emulate or adapt these to existing gaming or gambling properties. The presented typology suggests several areas for innovation, based on areas of gaming that are currently unexplored or underutilized in gambling activities, and vice versa. The following speculative points of discussion are presented following identification of these areas. These points are intended to address the question: *Hypothetically, what lessons could gambling learn from gaming, and gaming from gambling?*

1. Areas of innovation and further development in digital gambling

- Narrative features
- Greater integration of non-financial rewards
- Skill play features
- Leaderboards
- Integration of advertising and promotion

As noted above, gambling activities are distinct from many standard up-market video games given their relative lack of investment in narrative and storytelling. Gambling activities may potentially seek to adopt video-gaming conventions in order to attract users of this activity. It is also possible that gambling activities with gaming presentations may involve more non-financial rewards in order to

create more objectives for players to aim for and complete, but also to disguise losses as wins. Leaderboard ranking may be included as an additional metric for players to appraise progress and investment. Online gambling games may also consider implementation of skilled play features as distinct from the gambling activity. The use of social media enables greater use of advertising and promotion.

2. Areas of innovation in gaming

- Microtransactions and 'pay to win' features
- Monetised content
- Introduction of gambling mini-games into primary gaming activity (e.g., slot machine)
- Advertising for player-to-player skill gaming competition
- Sponsored ads

Gaming developers may also employ certain features observed in gambling activities. One of the primary ways is to give players the additional option of purchasing content that is exclusive or would ordinarily be unlocked through skilled or persistent play. It is possible that monetised virtual currency and content, already currently employed widely in app-based games, may become more widely used in AAA titles. There is some evidence that this is occurring already (e.g., popular games published by Activision and Electronic Arts have employed micro-transactions). Another innovation may be the inclusion of player-to-player competitive play betting, as an in-built feature of the game. Sponsored ads have been highlighted in video games previously, but there has been minimal uptake. In stand-alone casino games, it may be possible to include embedded ads for financial gambling operators if players enter an online (possibly age-restricted lobby).

Summary – A typology of common features

- The structural design of gambling and gaming activities is complex and evolving. Gambling and gaming activities share various structural features of play and presentation, which has led to some difficulty in adequately classifying these activities.
- A typology of features observed in gambling and gaming is presented to classify distinct and overlapping features of the two activities. This typology may be employed as a checklist for classifying hybrid gaming and gambling activities.
- The presented typology considers core components of interactivity, monetisation, betting and wagering, types of outcomes, structural fidelity, context and centrality of gambling, and advertising.
- Gaming is defined according to its interactivity, skill-based play, and contextual indicators of progression and success.
- Gambling is defined according to its betting and wagering mechanics, predominantly chance-determined outcomes, and monetisation features that involve risk and payout to the player.
- Many digital games incorporate both free and paid virtual currencies or items, indicating there is a niche social interest in and uptake of virtual goods.

- Many identified types of activities indicate a 'blurring' of gaming and gambling, particularly gaming activities that involve monetised (i.e., purchaseable) virtual currency that is not redeemable for real money.
- Betting and wagering mechanics are commonly observed in many types of video games, although often this is not the central activity.
- This typology suggests several possible future innovations in gaming and gambling based on underutilized features of gaming within gambling activities, and vice versa.
- This work indicates that it may be necessary to consider some hybrid or converging activities according to specific features, on the basis that some terms alone (e.g., "gambling game") may not sufficiently capture the complexity of such activities.
- This typology may guide further work in research and regulatory domains, both in understanding the current context of simulated gambling as well as future trends and developments in this area.

Recommendations for Policy Responses

This section of the report proposes recommendations for policy responses at a State and Federal level. These recommendations are based on the evidence presented in previous stages and are relevant to the research questions on which the research focuses. Given the limitations of the available evidence, the recommendations are intended to aid consideration of policy responses. It is likely that further research will aid the development of more thorough policy recommendations. As gambling and gaming are converging in many different ways, policy makers and operators are encouraged to regularly consult with experts to discuss the best strategies for minimising harms associated with any new and existing products. This report aims to facilitate informed discussions about the importance of consumer protection for gambling-themed games among operators, regulators and policy makers, consumer advocates and the community.

Issues for consideration

One central issue with any policy responses to the convergence of gambling and gaming is the development of appropriate definitions and classifications for games. As outlined by the DBCDE (now the Department of Communications) in their 2012 review of the Interactive Gambling Act (IGA 2001), an important difficulty in attempting to apply policies to gambling-like applications is defining such games in a way that does not inadvertently capture other games that contain some gambling elements. For example, while some games may require payment of an entry fee, and elements of chance for progress in the game, they are not seen as traditional gaming (e.g., playing games that involve a dice roll or random card draw). The constant evolution of gaming and consumer trends also poses difficulties in applying an effective definition. The proposed taxonomy is intended to assist with identifying the characteristics of games to be defined in any policy.

Another significant problem is the sheer volume of games and the feasibility of classifying them all, as well as deciding which governance body has responsibility for this and the relevance of international jurisdictions. In 2013, the South Australian Premier recommended that the South Australian Classification Council should assess social games for simulated gambling content and that the classification of these themes be discussed at a national level. It has been recommended that international standards be used where possible to classify games using a single set of guidelines for developers (Gainsbury et al., 2015a). A particular problem with classification organisations is that they often combine individuals from a wide range of fields. Some of these individuals may have little, or no experience in interpreting research findings, and may base their views of religious or inferred community attitudes that are not based on evidence. As a result, classifications can often be highly risk averse, conservative or reactive. It is clear, for example, that assumptions made publically about the potential risks of new classes of activity by some anti-gambling lobbyists or journalists are not borne out in the evidence that are so far being compiled as part of recent Australian research. The issue of ensuring operator compliance with any classification system creates further difficulties.

The issue of enforcement is important to consider as any policy or regulation to be implemented will only be effective with compliance and enforcement. Policies that involve changes to products operated by companies not located in or licensed within Australia will likely be difficult to enforce. This has been clearly seen by the lack of action taken against companies that act in violation of the IGA. Efforts to restrict advertising to Australian consumers may be effective as companies that advertise within Australia (including overseas operators such as Google and Facebook) generally have some responsibility to uphold Australian laws. For example, several offshore gambling mobile applications were withdrawn from the Apple App Store as these are prohibited by the IGA. However, globally operating companies have to balance the provision of services with upholding many sets of local laws.

Therefore, any policies that require changes to be made by global platforms and providers would require a high level of cooperation. It is recommended that policies promote industry standards and higher levels of self-regulation.

Gambling regulations are not applicable to social game operators. However, companies that offer gambling products, and are subject to Australian gambling regulation and licensing may provide an opportunity to enact requirements for gambling-themed games. Gambling companies who own, partner with, or are owned by a parent company that also owns or operates gambling-themed games may be required to enact specific policies for their gambling-themed games. This may include ensuring that there are no hyperlinks to allow players to move directly between online gambling-themed games and gambling sites, nor any communication or encouragement for gambling-themed game players to access gambling sites either within games, on game sites or through targeted communications using player information and contact details, including through external sites. As games and gambling products often share common branding it is unlikely that indirect associations between these products can be prevented.

Working with platforms on which games are delivered and advertised may be a useful way of implementing and enforcing policies. Nonetheless, there are limitations to the extent to which policies can be enforced. For example, the age verification process used by sites such as Facebook are easily manipulated and falsified. An Australian study indicated that two-thirds of children aged 12 or 13 years of age used social networking services (ACMA, 2012), despite Facebook being limited users who are 13 years or older. When falsifying their age children may immediately state that they are 18, allowing them to access content without restrictions, and rendering content and advertising restrictions based on this age ineffective. Any additional requirements for stricter age verification would require cooperation from the hosting platform, such as Facebook, Apple or Google. Therefore, it would likely be very difficult to ensure that Australian children do not access gambling-themed games based on age-restrictions from these platforms alone.

Considerations to facilitate responsible gambling

As the convergence between gambling and gaming continues, efforts are needed by policy makers, regulators and operators, to ensure that gambling products are offered in a responsible manner. This includes consideration of themes incorporated into gambling products that are likely to be attractive to young people, particularly where these are provided in environments where age restrictions are not effectively enforced. Caution is needed when advertising products that may be appealing to youth, for example, by restricting advertisements to those over 18 years of age, or existing customers. Gambling operators should also consider limiting the extent of cross-promotion of products, promotions and specials offered to potentially vulnerable customers, including males aged less than 29 years, given the increased vulnerability of this group to developing gambling problems. Engagement with multiple different types of betting is associated with gambling problems, so efforts to encourage customers to bet on multiple different activities could also be limited.

Actions should be considered by policy makers that can be taken against offshore gambling operators that advertise to young people, or in ways that are likely to appeal to young people. These may include working with platforms on which advertisements are placed (e.g., Facebook). Efforts should also be taken to reduce the exposure of young people to gambling advertisements, and to reduce the potential appeal of these advertisements to youth.

Practice games

Practice games, or any games provided by gambling operators using the same branding as gambling products with a substantial gambling theme that do not require monetary payments, should require the

same policies as apply to gambling products. This includes being restricted to customers whose identity and age have been verified. Games described as practice or demonstration (demo) games must replicate gambling products precisely, including the chances of winning. The games should include appropriate warnings and education about the risks of gambling and clear statements that they are not intended for use by young people. The games should not be advertised to or in a way that is likely to be appealing to young people. The games must not misrepresent the chances of winning, the role of skill, or that gambling is a reasonable way to receive financial compensation. Users playing practice games should not be encouraged to initiate gambling.

Considerations to facilitate the responsible provision of games

The following recommendations are intended to apply to simulated gambling and gambling-themed games.

Consumer protection standards

Consumer protection standards are important as it is likely that some users of gambling-themed games may experience negative consequences related to these. By providing consumer protection measures, operators may benefit from providing good customer service and demonstrating appropriate corporate social responsibility. In particular, some users may spend excessive time and money playing gambling-themed games, leading to negative consequences. For those vulnerable to developing gambling problems, or with existing gambling problems, gambling-themed games may exacerbate these.

To reduce the risks of excessive or problematic use of gambling-themed games, consumer protection measures should be implemented including:

- Voluntary limits on daily/weekly/monthly monetary expenditure
- Voluntary limits on daily/weekly/monthly time expenditure
 - Limits should be immediately binding, but have a minimum delay (of the relevant period) before increases can be implemented (e.g., a weekly limit takes one week to increase).
 - Players should be informed as they are approaching their limit to increase their awareness of their time and monetary expenditure
- Users should be able to easily access clear and meaningful summaries of their play history, including time and money spent.
- Information should be accessible about the signs of excessive and problematic gaming and links to information and help for gaming problems (jurisdiction specific).
- Users should be able to self-exclude from games. Where possible, self-exclusion programs should use identifying information such as IP addresses, SNS details, emails, and personal details to prevent users from simply uninstalling and reinstalling the game.
 - Self-exclusion should apply immediately and offer different time periods for self-exclusion, with a minimum of six months.

- Users should not receive any marketing materials while they are excluded.
- Users should be able to set temporary time-outs from the game.
- Users should be able to temporarily or permanently turn off the ability to make in-play purchases and prompts for these.
- Pop-up messages should automatically alert players when they have been playing continuously for 60 minutes, and re-occur every 30 minutes after this time.

Unlike in online gambling where regulations are strict in terms of identifying and verifying a customer's identity and age, preventing underage gambling and multiple accounts, SNS have few requirements to set up an account. This allows users to establish multiple different accounts and falsify their identity and age quite easily, which would allow users to work around any responsible gaming measures implemented. For this reason any responsible gaming measures would have to be voluntarily enacted by players so gaming companies should inform and encourage players to use these resources as appropriate.

Ensuring informed decision making

As with Internet gambling, the interactive and multimedia structure of gambling-themed games provides an opportunity to create a variety of consumer protection measures that can provide accessible and comprehensive information and tools to encourage appropriate choices and discourage unhealthy behaviours (National Council on Problem Gambling, NCPG, 2013). The provision of accurate, accessible, and easily comprehensible player information is consistent with the informed decision making model commonly used for the provision of responsible gambling (Gainsbury, Blankers, Wilkinson, Schelleman-Offermans, & Cousijns, 2014; Monaghan & Blaszczyński, 2010).

Information that is important to be provided to players includes personalised account information, including a summary of time and money spent per week, month, and overall. Additional player information may include practical tips on how to set appropriate spending limits and keep to these. Information should also be provided on game mechanics, that is, how games work using plain language, including any impact of payments or any other reflexive, adaptive, or algorithm-based gaming that is not random or skill-based. Users should be clearly informed whether or not monetary payments are required to achieve any specific progress within the game.

Appropriate warnings

As some players do appear to be vulnerable to playing gambling-themed games excessively, warnings should be provided on the risks associated with excessive play. These should discuss the impacts of spending too much time or money playing games and the potential negative consequences and risk signs to look for.

Additionally, warnings should be posted to advise people who are at-risk of or experiencing gambling problems that these games may exacerbate gambling and caution is required. Links should be provided to external sites with further information about excessive gaming and problem gambling, including where help can be sought (jurisdiction specific), including telephone and online support where available. Information about the similarities and differences between gambling products and games should be provided, including where games do not accurately represent gambling and the chances of winning and warnings that playing games will not increase a user's chance of winning on gambling products.

Identification of problematic players

Given the relatively small proportion of players that ever pay money to play these games, gambling-themed game operators are likely to be able to easily identify individuals who are spending excessive time and money on these games. Game operators should contact high intensity customers to check whether they are playing at sustainable levels. This is similar to requirements for gambling operators to intervene when likely problematic gambling is identified. Low intensity interventions are possible, such as emails to encourage high intensity players to engage with information about responsible play and limits. If game operators become aware that a player is using the game in a potentially problematic way, such as through direct communication with the player, the player may be encouraged to limit their play and/or self-exclude from the game.

It is recognised that a conflict of interest exists given that games generate a substantial proportion of their profits from a small proportion of players and some players spend considerable amounts within a single game. Nonetheless, from a corporate social responsibility standpoint as well as considering a sustainable business model, it is not appropriate to allow players to spend more than they can afford to the extent that they experience severe problems. Users who experience problems with their gaming may express hostility towards customer service staff, seek negative publicity for the game, and result in the loss of customers who may have continued playing at sustainable levels over a longer period of time and legal action. There also may be strategic advantages for the industry to take reasonable pre-emptive steps to reduce the perceived risks associated with their products so as to avoid more restrictive regulatory responses.

Encouraging engagement with consumer protection resources

Game features are increasingly being used for a variety of educational purposes. Gamification allows consumer protection to be provided in a manner that is consistent with players' experience with games and may be more acceptable for players when they are seeking entertainment and fun. For example, additional virtual credits could be awarded to players who set voluntary limits on their expenditure, or for reading educational information (NCPG, 2013). This may encourage players to engage with consumer protection information and tools and enhance the effectiveness of these measures.

Avoiding connections between games and gambling

It is important that game operators clarify the link (or lack thereof) between games and gambling products. A clear statement should be provided that the game does not work in the same manner as a gambling activity, that is, the outcomes are not randomly determined, and the chances of winning do not reflect the likelihood of winning on a gambling activity. No links should be provided between games and gambling products, and advertisements or promotions for gambling products should not be contained within games or target game players. This includes branding, product placement, and incentives to engage with the gambling product. This includes gambling products provided by the same operator of the game, as well as advertisements for gambling products provided by third parties.

Where companies operate gambling and gambling-games, further statements are required to ensure that the games do not mislead players or give the impression that they are representative of gambling products if this is not the case. It is important that games do not imply that skill or strategies within the game can improve a player's chance of winning at gambling. If games do accurately represent gambling products, this should be clearly stated. Game operators should not share player information with gambling operators, including for the purpose of marketing.

Impact of games on young people

Gambling is intended as an adult activity, and exposure to gambling themes within games that misrepresent the actual outcomes of gambling may result in harmful consequences for young people.

Games that include substantial gambling elements, themes, imagery, and language should clearly state this upfront prior to download, including warnings that the games are not suitable for children.

Representatives from the gaming industry have claimed that a minority of their customers and paying customers are under the age of 18. Establishing and enforcing a minimal age to play gambling-themed games would demonstrate that these games are not intended for young children and may reduce related harms. Age limits may be 15 years, which has been used in other entertainment genres for mature content, or 18 years, which is the legal age at which young people can gamble. As social media platforms are generally not well equipped to verify users' age, consideration is needed for the steps that a game operator would be expected to reasonably take to ensure that players are an appropriate age. Additionally, advertising should only target potential customers above an appropriate age.

Gambling-themed games should not include themes, images, or language that would be perceived as being likable by youth. This includes featuring toys and games commonly played by young people, characters in popular youth entertainment, brands, animals, or holidays that are popular among youth. This particularly includes themes that are popular among youth today, as opposed to themes likely to be popular among youth from a retrospective perspective (i.e., adults recalling their youth).

Fair monetization policies

Operators should refrain from using manipulative techniques to increase payments, such as by making games more difficult following purchases. Games should state whether monetary payments are involved in a game prior to download; this should be done within the game in addition to the existing App Store and/or Play Store disclaimer. Where monetary payments are necessary to progress within a game this should be clearly stated. Options to receive additional credits or features without monetary payment should be clearly stated, such as clarifying when virtual credits will be re-loaded, or actions that will be rewarded with additional credits. Games should include the option to disable any payment options, such that the game can be played without prompts for payment.

Customer identification

In most jurisdictions, Internet gambling has strict know-your-customer (KYC) regulations that are required to assist consumer protection, prevent money laundering and fraud, ensure consumers are the legal age to gamble, and facilitate monetary transactions. SNS, including Facebook and mobile app stores, have very few requirements for customer identification. Age verification is typically based on self-report, including the user positively indicating that they are the appropriate age to play. Many sites do not require identification information to be entered, let alone verified with any documentation or third-party service. To enhance consumer protection, including protecting young people from being exposed to inappropriate gambling-related content, gambling-themed games could adopt their own form of requirements on age and identity verification. This would allow children to be blocked from playing inappropriate games and allow users to self-exclude more effectively from a specific game. Identity verification would also be to their benefit for anti-fraud purposes in credit card and other payment transactions. Ensuring that the payment method used is in the same name as the account holder may avoid later payment disputes; for example, use of stolen credit cards. Age and identity verification can occur through photos being uploaded and sending of identification documents such as driver's license, ID cards or passports.

Education and public awareness

Education and awareness for the general public on the issues discussed in this report are warranted. In particular, targeted educational campaigns for parents, young people and others who may be

influential in the lives of young people may reduce the impact of gambling-themed games on young people. Educational campaigns aimed specifically at parents may be useful to alert them to the availability of games and sites with gambling content that are available through social media and the potential impact of these on young people. These may encourage parents to discuss these games and themes with their children, or engage in monitoring to prevent or minimize use of these activities where appropriate. Where appropriate parents should discuss gambling-themes with adolescents, that games are not representative of gambling and the risks involved with gambling.

There is need for greater diligence by parents in checking credit card and online payment records that are accessible by children and to supervise children's online activities. In-app purchases may be disabled on devices, or restrictions placed on purchases, such as requiring a password for each purchase. Parents may also use voluntary software to block access to websites and services they feel are inappropriate for children using approved family-friendly filters. These filters often include gambling sites; however, efforts to block games with gambling themes may require more individual monitoring. The South Australian Premier recommended in 2013 that a list be created for parents to assist them to identify games with gambling content that would not be suitable for children. This is similar to action proposed in Belgium to create a blacklist of games that should be restricted. A list of games inappropriate for children may be incorporated into blocking and filter software; however, any list of games would need to be continually updated.

If adults engage in gambling or gambling-themed activities online, online advertisers may target their IP address with gambling-related advertisements, which may be viewed by other users, including children. This can be minimised by creating separate user accounts on devices, using ad-blocking software, and deleting cookies/browsing history. Ultimately, efforts to reduce gambling among young people must involve a wide variety of stakeholders, including gambling and game operators, but also regulators, parents, educators, and young people themselves.

Summary – Policy recommendations

- As gambling and gaming are converging in many different ways, policy makers and operators are encouraged to regularly consult with experts to discuss the best strategies for minimising harms associated with any new and existing products.
- International standards should be used where possible to classify games using a single set of guidelines for developers.
- Policies should promote industry standards and higher levels of self-regulation due to difficulties with enforcement and compliance when dealing with international companies.
- Promotions of gambling products that may be appealing to youth should be restricted to those who are over 18 years of age.
- Promotion of cross-product wagering and promotional offers could be limited from being provided to potentially vulnerable customers, including young males.
- Discussions should be held with SNS and website operators to reduce the exposure of young people to advertising for gambling products; particularly marketing that may be appealing to youth, including offshore gambling sites.
- Practice games, or any games provided directly by gambling operators that simulate a gambling product and include corporate branding should require the same policies and restrictions as apply to gambling products, even if these do not require monetary payments or

return outcomes of monetary value. This includes being limited to adults whose age and identity has been verified.

- Practice games should include information about responsible and problem gambling, be clearly labelled as for adult use only, and should not be advertised in a way that is appealing to youth.
- Gambling-themed games should allow users to set limits on their time and monetary expenditure, access summaries of the time and money spent within the game, and information about problematic game play.
- Users should be able to self-exclude from gambling-themed games and set temporary time-out periods to reduce excessive play.
- Users should be able to remove the ability to make in-app purchases.
- Users must be able to access appropriate information about gambling-themed games to understand how outcomes are determined and the role of payments.
- Games should include warnings about the risks of excessive play, including spending too much time and money within games.
- Gambling-themed games should include warnings that these may not be suitable for people who have gambling-related problems.
- Game operators should contact high intensity customers to check whether they are playing at sustainable levels and offer assistance if appropriate. Where players are identified to be experiencing problems, they should be excluded from the game.
- Users should be informed where gambling-themed games are not representative of gambling activities.
- Games should not include links to or advertisements for gambling products.
- Games that include substantial gambling elements, themes, imagery, and language should clearly state this upfront prior to download, including warnings that the games are not suitable for children.
- Games with prominent gambling-themes should consider age restrictions or warnings that these are not suitable for those under 18 years of age. Advertising for gambling-themed games should be restricted to those over 18 years of age.
- Gambling-themed games should not unduly appeal to youth.
- Operators should refrain from using manipulative techniques to increase payments and provide clear information regarding the availability of and need for monetary payments, and allow prompts for payment to be removed.
- Gambling-game operators could increase their requirements for customer identity and age verification to enhance consumer protection, protect children, and avoid payment disputes and fraud.

- Public education and awareness campaigns are needed, particularly to inform parents, teachers and young people about the potential negative impact of gambling-themed games.
- Parents should be encouraged to monitor children's game use and educate young people about gambling and the risks involved within this activity.

Conclusions

This project responded to a considerable need that is increasingly noted by policy makers, researchers, community organisations and members – that is, to understand how games and gambling are overlapping and what actions should be taken in response to this convergence. The review presented here is limited by the small extant knowledge base, that is, few methodologically rigorous research studies have been conducted to examine the specific impact of gambling-themed games on young people. There is no knowledge of the long-term consequences of exposing young people to gambling themes within games and advertisements as the games are relatively recently developed and promoted.

Despite these limitations, there is some indication that a notable proportion (up to one-third) of young people have played games with substantial gambling themes, mostly online as either standalone games or incorporated into game content. Older adolescents and youth are more likely to engage with gambling themes through games. Youth are also exposed to advertisements and marketing promoting gambling-themes, much of which is likely to be specifically appealing to this group. Gambling-games are being offered as standalone products, but gambling operators also offer gambling-themed games directly to young people with no restrictions on access. Gaming elements are also being incorporated into gambling products, which are restricted to those aged 18 years and older, but may be specifically appealing to a young adult audience, who are potentially vulnerable to the development of gambling problems.

Policies for gambling operators who are regulated within Australian jurisdictions may be implemented. For example, restrictions could be placed on direct links between gambling and gaming products and the age groups that gaming products are made available to where these are linked to a gambling operator.

Policies intended for game operators not regulated, licensed or based in Australia may be difficult to enforce. Similarly, policies for operators of platforms and sites which offer and advertise gaming products (e.g., Facebook, Google, Apple) may be difficult to enforce given the international nature of these corporations. Cooperation with international regulatory bodies (including classification and rating boards) and encouragement of self-regulatory practices at an industry level may be a more suitable approach to any desired changes.

Community educational campaigns may be effective in targeting parents and educators, as well as young people, to increase awareness about relevant risks related to gambling-themed games. These may be placed within a broad cybersafety campaign.

The gaming and gambling industry are constantly innovating and it is highly likely that new gambling and gaming products will continue to emerge that have converging features and themes. Hybrid products that blur the line between gambling and gaming are also likely to continue to be developed. It is recommended that policy makers continue to engage with experts to guide ongoing responses to this digital convergence of gambling and gaming. It is also recommended that further research be conducted to understand the impact of these changes. This may include:

- Longitudinal studies to examine the impact of young people's use of gambling-themed games over time.
- Examining rates of early exposure to gambling and gambling-like messages via digital technologies in underage populations

- The structural change and evolution in gambling and gaming.
- The direct impact of marketing for gambling-themed games on young people.
- How gambling-themed games may be used to increase awareness of risks of gambling and reduce gambling among children and adolescents and/or facilitate responsible gambling among young adults.
- Focused examination of the group of young people who are most vulnerable to increased gambling as a result of engagement with gambling-themed games.
- Investigation on whether problem gaming is related to problem gambling and the extent to which youth experience gaming problems with gambling-themed games.

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Glossary

- Advergames: Digital games provided by a company for marketing purposes
- Apps: Smartphone applications
- Digital convergence: The capacity for digital media content and functionality previously available only on a singular device to now span, influence, and be shared across multiple devices and networks, e.g., the crossover of some gambling and gaming products, platforms, and networks
- Disordered gambling: Persistent and recurrent problematic *gambling* behaviour leading to clinically significant impairment or distress
- eSports: Professional video gaming tournaments
- Emoji: A small digital image or icon used to express a thought, activity, or emotion, in electronic communication (e.g., texting, email, etc.).
- Freemium: Users are granted access to a fully functional game, but must pay to access additional content
- Free-to-play: Games which give players access to a significant portion of their content without paying
- Gambling: Placing a bet or wager in the form of money or something of value on the outcome of an uncertain event that may involve elements of skill or chance
- Gambling-themed games: Games whose central theme is a simulation of a gambling activity
- Game mechanics: How outcomes are determined, for example, skill-based, random outcomes, or algorithms based on player characteristics and input
- Gamification: The use of game thinking and game mechanics in non-game context to engage users in solving problems and increase users' contributions.
- Gaming: Playing video games online or offline
- Gaming consoles: A device that outputs a video signal or visual image to display a video game, includes devices connected to monitors (television or computer) and handheld devices.
- In-app purchases: Making monetary payments or purchases within a game
- Leaderboards: Within-game player rankings
- Migration: Movement of a player between related, but separate activities, for example from a gaming activity to gambling or vice versa
- Pay to play: Making monetary payments or purchases within a game to further game progress or access additional features

- Practice games: Free-play versions of gambling activities, which allow users to become familiar with the rules of the games before risking actual money
- Simulated gambling: A digitally simulated activity that replicates a gambling activity but does not directly involve monetary gain
- Skill games: Games in which outcomes are determined entirely by the player's skill
- SNS (social networking service): Any Web site that enables users to create public profiles within that Web site and form relationships with other users of the same Website who access their profile.
- Social games: Games that are hosted on or interact with a social media platform
- Social casino games: Online gambling-themed games whose central theme is a simulation of a gambling activity that do not require payment to play or provide a direct payout or monetary prizes and are hosted on or interact with a social media platform
- Young people: Children, adolescents and young adults aged 10 to 25