
9 November 2022

Submission to Parliamentary Inquiry into online gambling and its impacts on those experiencing gambling harm

Submitted via: https://www.aph.gov.au/Parliamentary_Business/Committees/OnlineSubmission

An estimated two-thirds of Australians play video games, including children who play approximately 100 minutes a day on average.¹ Given the growing importance of this sector and evidence showing the harm of ‘gambling style’ tactics used in some games, this review should consider the definition of ‘gambling-service’ to capture online gambling-like activities such as simulated gambling in games like loot boxes.

Like many parts of the digital economy that either lack oversight or are absent of adequate guardrails, the likelihood of harm is high yet obfuscated.

The Consumer Policy Research Centre (CPRC) encourages the Australian Government to use the inquiry as an opportunity to understand:

- how gambling techniques are seamlessly embedded into some video games via loot boxes
- how this is impacting the wellbeing of Australians, including children
- what safeguards need to be in place to adequately protect Australians.

Loot boxes resemble gambling with no real-life prize on offer

CPRC has been working closely with the Norwegian Consumer Council (NCC) to better understand the impact of loot boxes in a gambling context. In May 2022, the NCC released research on how loot boxes exploit consumers via deceptive design, opaque algorithms, aggressive marketing and in-game currencies and opaque pricing structures (See Attachment 1). The report notes similarities with gambling but instead of the prize being a tangible asset such as cash, it is a ‘mystery package’ of digital content for use in video games. Real money is converted into an arbitrary digital currency to spend on in-game digital items.

“Users are spending real money to receive random in-game content.” – NCC, Insert Coin report²

NCC notes that in 2021, the gaming industry generated revenues of USD 15 billion from loot box purchases alone and it is projected to reach USD 20 billion by 2025. NCC’s report outlines specific correlations between gambling and loot boxes:

- Income generated from loot boxes is likely to stem from ‘problem gamblers’ rather than wealthy consumers who are gaming for amusement only.
- Research in this field indicates links between purchasing loot boxes and developing a gambling addiction with the likelihood to cause significant harm, including to children.
- Loot boxes introduce children and young people to features that strongly resemble gambling.
- Loot box systems are predatory, foster addiction and lack transparency, thus creating unfair in-game advantages.
- Randomness and design of loot boxes can be compared to those seen in virtual casinos.

¹ See report by the Interactive Games and Entertainment Association: <https://www.igea.net/wp-content/uploads/2017/07/Digital-Australia-2018-DA18-Final-1.pdf> – figures reported are from 2018 so it is likely that the numbers and hours spent playing video games has increased due to extensive lockdowns in Australia during the COVID-19 pandemic.

² NCC, “Insert Coin – How the gaming industry exploits consumers using loot boxes”, (May 2022), <https://storage.forbrukerradet.no/media/wp-content/uploads/2022/05/2022-05-31-insert-coin-publish.pdf>

Deceptive design practices cause consumer harm

The NCC research also noted several forms of deceptive design that are used to influence consumers' engagement with loot boxes. Deceptive design (also known as dark patterns or manipulative design) are features and functionalities embedded into digital platforms that purely exist to influence consumer behaviour.³

CPRC research found 83% of Australians have experienced negative consequences as a result of dark patterns that are aimed at influencing their behaviour (See Attachment 2). Deceptive design features include embedding hidden costs into an online process, using scarcity cues to create a fear of missing out (the FOMO effect), or using aggressive marketing techniques to have specific options stand out. These techniques are used to steer people towards choices that profit businesses but can cost consumers. As a result, Australians have lost money, lost control of their data or have been manipulated by a business to make a choice that was not in their interest.

When it comes to financial impact, CPRC's research showed that dark patterns are leading to direct financial harms. One in five Australians (20%) reported spending more than they had intended, almost one in six (17%) felt pressured into buying something and nearly one in 10 (9%) accidentally bought something. These figures are further exacerbated among younger consumers. As an example, younger consumers were 65% more likely than the national average to spend more than they intended and 29% more likely to feel pressured into buying something.

Dark patterns are being applied to drive high sales of loot boxes but are leaving consumers worse off with little to no transparency on the algorithms used to decipher the results or an accurate probability of redeeming meaningful digital content from purchasing loot boxes.

Measures to protect Australians from digital harms

We ask that the inquiry consider what measures could be implemented to protect Australians from digital harms and gambling-like tactics, including children. The NCC report outlines a range of measures such as prohibiting deceptive design that exploit consumers, restricting in-game purchases to be only made via real-world currency, not offering loot boxes in games likely to be played by children, and more transparency on the use of algorithms with options to play games without algorithmic decision-making that aim to influence consumer behaviour.

We would welcome the opportunity to work with the Federal Government and share further insights from our respective consumer research projects. Representatives from NCC are also available if the Federal Government would like further information on their research or insights on the issue from a European perspective. For further discussion regarding our research and the contents of this submission, please contact chandni.gupta@cprc.org.au.

Yours sincerely



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About CPRC

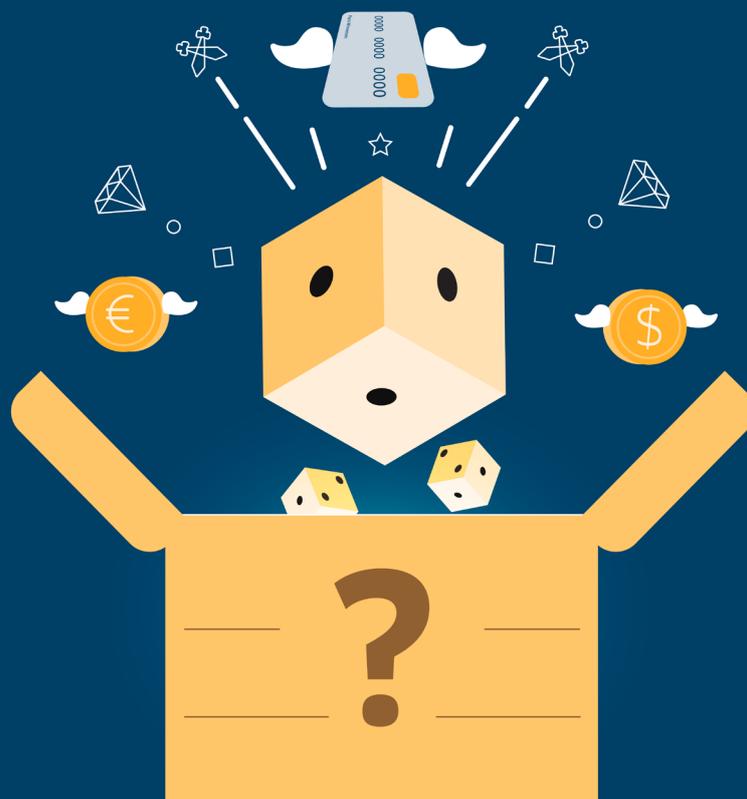
CPRC is an independent, non-profit consumer research organisation. Our mission is to improve the lives and welfare of consumers by producing evidence-based research that drives policy and practice change. Digital issues are a research focus for CPRC, including emerging risks and harms and opportunities to better use data and technology to improve consumer wellbeing.

³ CPRC, "Duped by Design – Manipulative online design: Dark patterns in Australia", (June 2022), <https://cprc.org.au/dupedbydesign>.

Attachment 1

NCC Report

Insert Coin – How the gaming industry exploits consumers using loot boxes



INSERT COIN

How the gaming industry exploits consumers using loot boxes

31.05.2022

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Executive summary

Loot boxes are “mystery packages” of digital content in video games where consumers spend real money to receive random in-game content that gives them advantages or cosmetic items for use within the context of the game. They are a form of in-game purchases¹, incentivizing gamers to spend small sums of money for a chance of receiving a desirable reward. The sale of loot boxes is highly lucrative for the video games industry, generating more than USD 15 billion globally in 2020.

Loot boxes have been the source of several controversies, with accusations often being levelled against these mechanisms of being predatory, fostering addiction, exploiting vulnerable consumer groups, and more. As discussed throughout this report, the sale and presentation of loot boxes often involve exploiting consumers by:

- Exploiting cognitive biases and vulnerabilities through deceptive design.²
- Using aggressive marketing practices to push sales at every opportunity.
- Meaningless or misleading transparency disclosures about the likelihood to win or lose that are difficult to assess.
- Opaque algorithms and skewed probabilities
- Using layers of virtual currencies to mask or distort real-world monetary costs.
- Very high cost of freemium and endless grinding
- Risk of losing content at any time
- Targeting loot boxes and manipulative practices at kids

In this report, we demonstrate why the presentation and sale of loot boxes are exploitative and predatory from a consumer point of view by exploring two case study, the popular video games FIFA 22 and Raid: Shadow Legends. Both games employ a wide arsenal of tricks to push consumers into spending as much time and money as possible exploiting consumers hope to receive the reward despite a miniscule chance and likelihood to do so.

¹ The term “microtransactions” is often used as a synonym for in-game purchases like this. Since these purchases no longer seems micro in any sense, we will be using “in-game purchase” consistently in this report. This term includes microtransactions as well as other transactions.

² The terms deceptive design, manipulative design, and dark patterns are often used synonymously both in the media and in the relevant literature. This report uses “deceptive design” consistently. (<https://www.deceptive.design/>)



Based on these cases and a broader overview of the industry, we present several proposals for industry, regulators, and policymakers:

1. **Video game companies must be banned from using deceptive design to exploit consumers.** When consumers engage in video games, companies must ensure that their decisions are not impacted to the detriment of the consumer, by the design and operation of game.
2. **All In-game purchases should always be denominated in real-world currency.** At the very least, real-world currency values should be provided alongside virtual currencies, where virtual currencies are used.
3. **Protection of minors:**
 - a. Games likely to be accessed by minors **must not offer loot boxes**, or other randomized content in exchange for real money.
 - b. Games likely to be accessed by minors **should not contain "pay-to-win" mechanisms.**
4. **More transparency:**
 - a. Researchers and regulators should have **access to the algorithms and datasets** that is are involved in the loot boxes to conduct independent research in the public interest.
 - b. In cases where **algorithmic decision-making** is employed to influence consumer behaviour, the **consumer must be explicitly informed.** The disclosure must include information in plain language about what algorithms are trained to achieve and which factors are used. In addition, the consumer should have the **option to use the game without algorithmically driven decision-making that aims to influence consumer behaviour.**
5. **Better and more enforcement**
 - a. Consumer enforcement authorities must have the necessary resources and expertise to take enforcement actions, thus, protecting consumers in digital markets, including protecting digital ownership.
 - b. Consumer protection authorities should ensure that existing and future consumer rights are enforced in the gaming industry as well.
6. If other remedies do not alleviate the problems, **consider a ban of paid loot boxes.**

Although the video games industry is amongst the largest entertainment industries, it has often eluded serious regulatory oversight. Therefore, we call for stronger regulatory action against video game companies that fail to respect consumer rights and that prey on consumer vulnerabilities.



1 Background

The video game industry is one of the largest entertainment industries on the planet, having outgrown both the sports and film industries. Although revenue in the industry has historically been generated largely from the actual sale of video games, business models in the sector have continuously evolved. Over the past two decades, in-game purchases – in-game sales of additional digital content – have become a major source of revenue for the industry, generating more than USD 15 billion in 2020.

Worldwide, more than 2.8 billion consumers reportedly play video games on a regular basis, including children, teenagers, and adults. According to the industry umbrella organization ISFE, around half of the EU population, which is about 250 million consumers, plays video games. In Norway, 86% of 9–18-year-olds play video games. In the US, three out of four consumers reportedly play video games. In other words, the video games industry is a major player that reaches a significant number of consumers worldwide. This entails enormous power, but also significant responsibilities.

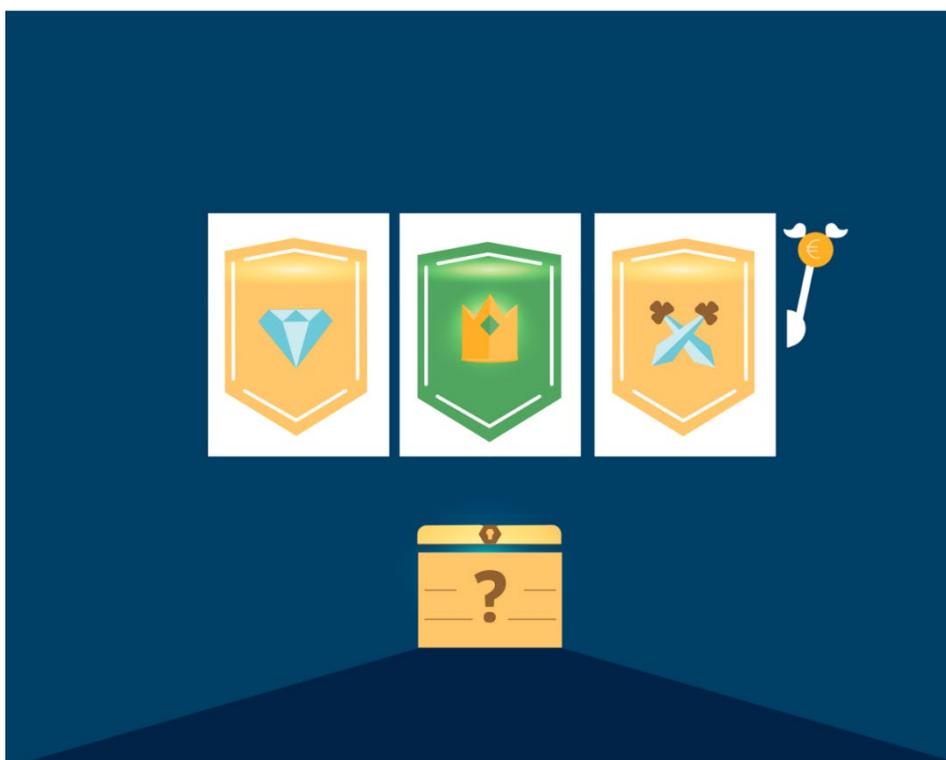


Figure 1: Loot boxes share similarities with gambling. (Illustration: Norwegian Consumer Council /Hanne Fossaa Eriksen)



1.1 Changes in business models: from game sales to in-game purchases

Since the early 2000s, the form in which video games are sold has shifted from predominantly physical discs or cartridges sold over the counter to purely digital services sold through online storefronts such as Microsoft Store, PlayStation Store, App Store and Steam. In this digital environment, the consumer pays for access to a game through the platform, which is then downloaded onto a device where it can be played. This shift has led to decreased shipping and transaction costs for companies and has laid the ground for new business models and revenue streams. One of the currently dominant business models is in-game purchases that unlock content in the video game environment.

In-game purchases have become a major business driver for the video game industry. In 2021, the industry generated revenues of USD 178 billion, with around USD 15 billion coming from the sale of **loot boxes**³ and in-game currencies. Loot boxes are “mystery packages” of digital content in video games where consumers spend real money to receive random in-game content



Figure 2: The gaming industry generated revenues of nearly USD 180 billion i 2021. (Illustration: Norwegian Consumer Council /Hanne Fossaa Eriksen)

³ Loot boxes are mystery packages where the player spends in-game currency to purchase a virtual crate, pack or chest containing one or more random items that are used in-game.



These sales are projected to exceed USD 20 billion by 2025, with 230 million consumers worldwide spending real money on loot boxes.⁴ The global gaming industry is now worth more than USD 300 billion with an estimated compound annual growth rate (CAGR) between 2019 and 2025 of 7,2 percent.⁵

In 2021 the video game company Electronic Arts made more than USD 1.62 billion from in-game purchases in the FIFA 21 game alone, which amounted to 29% of the company's entire revenue.⁶ Activision Blizzard, another major video game company, reported more than USD 1.2 billion in revenue from in-game purchases between July and September 2020.⁷ In-game purchases take various forms and are briefly described below.

Games-as-a-service is a model whereby consumers access a video game for free or for a one-time fee, and then pay a recurring fee to continue accessing the game or to regularly receive new content. This model was popularized by massive multiplayer role-playing games (MMORPGs) such as World of Warcraft but has resurged in new forms with the popularity of “free to play” games such as Fortnite, where players can download and play the game for free but receive additional content in-game by paying extra for “season passes”, subscription services that unlock extra content for a recurring fee.

The model popularized by Fortnite, where consumers can access and play the game at no cost but may choose to pay to receive extra content, is also called a **freemium** model.⁸ This has become the dominant business model for mobile games. Players are introduced to a game by downloading it for free and can then pay to access extra content to gain in-game advantages, get rid of in-game advertising, skip excessive waiting times, or performing repetitive tasks to overcome roadblocks to in-game progress.⁹

Although many consumers may choose not to spend money in freemium games or to spend only small sums on in-game purchases, the industry gains large amounts of revenue from advertising and from so-called “whales”, consumers

⁴ “Video Game Loot Boxes To Generate Over \$20 Billion In Revenue By 2025, But Tightening Legislation Will Slow Growth”, Juniper Research [https://www.juniperresearch.com/press/video-game-loot-boxes-to-generate-over-\\$20-billion](https://www.juniperresearch.com/press/video-game-loot-boxes-to-generate-over-$20-billion)

⁵ HOW MUCH IS THE GAMING INDUSTRY WORTH IN 2022? REVENUE & STATS <https://earthweb.com/how-much-is-the-gaming-industry-worth/>

⁶ “EA’s Ultimate Team raked in \$3k per minute last year”, Kris Holt <https://www.engadget.com/ea-fifa-ultimate-team-net-revenue-2021-loot-boxes-143258804.html>

⁷ “Activision Blizzard Made Over \$1 Billion From Microtransactions In Three Months”, Jon Bitner <https://www.thegamer.com/activision-blizzard-made-1-billion-microtransactions-three-months/>

⁸ “Freemium”, Troy Segal <https://www.investopedia.com/terms/f/freemium.asp>

⁹ The act of performing repetitive tasks to overcome roadblocks to in-game progress is called “grinding” in reference to the repetitive nature of the activity.



who spend large amounts of money in-game.¹⁰ A large part of the industries' income is likely to stem from "problem gamblers" rather than from wealthy consumers having a good time.¹¹

Although in-game purchases are essentially completed with real money, in practice the player often buys **in-game currencies** which the player then uses to buy other in-game content. In-game currencies are an abstraction of actual money, taking the form of virtual money counterparts such as coins, gems or points. In-game currencies are bought for real money, and the abstracted currency is then spent on in-game items, which adds an additional layer between the spending of real money and the purchase of in-game content.

The most controversial form of in-game purchases are **loot boxes**. Loot boxes are mystery packages where the player spends in-game currency to purchase a virtual crate, pack or chest containing one or more random items that are used in-game. Unlike other in-game purchases, the player does not know what they will receive before they pay for a loot box.¹² Although loot boxes or their contents can sometimes be earned without paying real money, for example by achieving milestones in the game, players are often incentivized or pushed to spend real money in a variety of ways which will be explored in this report.

In-game items gained from loot boxes usually exist in a closed in-game economy, meaning that no real monetary value can be extracted from the system. Most video game companies do not provide any means to sell or trade in-game content with other consumers for real money, although certain grey markets exist to facilitate such transactions, a notable exception being the digital storefront Steam, which facilitates the trading of certain in-game items between players.¹³

¹⁰ "What it means to be a 'whale' — and why social gamers are just gamers", Stephanie Carmichael <https://venturebeat.com/2013/03/14/whales-and-why-social-gamers-are-just-gamers/>

¹¹ Secondary analysis of loot box data: Are high-spending "whales" wealthy gamers or problem gamblers? (<https://www.sciencedirect.com/science/article/abs/pii/S0306460321000368>)

¹² For a more thorough review of definitions and classifications of loot boxes, see "Loot boxes in online games and their effect on consumers, in particular young consumers", Annette Cerulli-Harms et al., pages 13–16 [https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652727/IPOL_STU\(2020\)652727_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652727/IPOL_STU(2020)652727_EN.pdf)

¹³ "Casinos, Cards and Counter-Strike: A Brief Overview of Skin Gambling in Canada and Abroad", Andrew C. Alleyne, Jonathan Raizenne <https://www.lexology.com/library/detail.aspx?g=98400066-a64c-4ed4-814a-44f846235547>



In most cases, any transactions between consumers of in-game items or currencies for real money breach the terms of service of the video game company and could potentially result in a suspension or ban from the service.

Loot boxes are particularly problematic from a consumer point of view. For the remainder of this report, we will focus on different aspects of loot boxes, using real-world cases to illustrate the practices.



2 Loot boxes exploit consumers

The sale of loot boxes has been controversial for more than a decade and has been the target of criticism from the media,¹⁴ policymakers,¹⁵ and from consumers.¹⁶ Accusations often levelled at loot box systems are that they are predatory, foster addiction, lack transparency, create unfair in-game advantages, and that they introduce children and young people to mechanisms that are strongly reminiscent of gambling.¹⁷ Despite these controversies, loot boxes remain a common feature of a large percentage of video games.¹⁸



Figure 3: Loot boxes are mystery packages with random content, purchased for real money in-game. (Illustration: Norwegian Consumer Council /Hanne Fossaa Eriksen)

¹⁴ “Loot boxes have reached a new low with Forza 7’s “pay to earn” option”, Sam Machkovech <https://arstechnica.com/gaming/2017/09/loot-boxes-have-reached-a-new-low-with-forza-7s-pay-to-earn-option/>

¹⁵ “International concern over blurred lines between gambling and video games”, UK Gambling Commission <https://www.gamblingcommission.gov.uk/news/article/international-concern-over-blurred-lines-between-gambling-and-video-games>

¹⁶ “Star Wars Battlefront 2’s Loot Box Controversy Explained”, GameSpot Staff <https://www.gamespot.com/articles/star-wars-battlefront-2s-loot-box-controversy-expl/1100-6455155/>

¹⁷ For another analysis of the behavioral effects and harms connected to loot box mechanisms, see “Loot boxes in online games and their effect on consumers, in particular young consumers”, Annette Cerulli-Harms et al., pages 21–30 [https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652727/IPOL_STU\(2020\)652727_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652727/IPOL_STU(2020)652727_EN.pdf)

¹⁸ “The prevalence of loot boxes in mobile and desktop games”, David Zendle, Rachel Meyer, Paul Cairns, Stuart Waters, Nick Ballou <https://pubmed.ncbi.nlm.nih.gov/31957942/>

Many of these issues are compounded by the fact that a significant number of gamers are minors, who make up a particularly vulnerable group that is susceptible to manipulation and exploitation. In Norway, a 2020 survey by the Norwegian Media Authority showed that 28% of surveyed 9–18-year-olds had paid money for loot boxes, with as many as 55% of boys aged 15–16 having done so.¹⁹ A 2019 survey from the UK showed that 44% of 11–16-year-olds who were aware of loot boxes had spent money on them.²⁰ There are also many examples of children spending large amounts of money on loot boxes and other in-game purchases, causing real-world financial harm to the children and their parents.²¹

These issues have also been acknowledged by major industry actors.²² Some companies have reduced or removed loot boxes entirely in response to consumer criticism.²³ However, self-regulatory schemes by the industry have been reluctant to tackle the issue, opting instead to defer to governmental bodies.²⁴

Although loot boxes are a relatively recent phenomenon in video games, the basic concept is not new. The act of purchasing a mystery package for real money can be compared to various physical products, for example trading cards such as Pokémon or Magic: The Gathering, or other mystery boxes where the content is unknown before purchase. In both cases, the consumer spends a sum of money to receive a mix of items that are essentially randomized. However, there are significant differences that make loot boxes particularly problematic. We briefly outline the most pertinent of these issues below.

¹⁹ "Barn og Medier 2020", Medietilsynet
<https://www.medietilsynet.no/globalassets/publikasjoner/barn-og-medier-undersokelser/2020/201015-barn-og-medier-2020-hovedrapport-med-engelsk-summary.pdf>

²⁰ "Young People and Gambling 2019", UK Gambling Commission
<https://www.gamblingcommission.gov.uk/statistics-and-research/publication/young-people-and-gambling-2019>

²¹ "My son spent £3,160 in one game", Zoe Kleinman
<https://www.bbc.com/news/technology-48925623>

²² "Fortnite boss says game loot boxes 'cause harm", BBC News
<https://www.bbc.com/news/technology-51502592>

²³ "Heroes Of The Storm will remove the ability to buy loot boxes with real money", Jay Castello
<https://www.rockpapershotgun.com/heroes-of-the-storm-will-remove-the-ability-to-buy-loot-boxes-with-real-money>

²⁴ "PEGI is leaving the verdict on loot boxes up to gambling commissions", Alissa McAloon
<https://www.gamedeveloper.com/business/pegi-is-leaving-the-verdict-on-loot-boxes-up-to-gambling-commissions>



It is important to note that the concept of randomization and rewards is entrenched in the core of video game design. Many video games are structured around completing challenges to receive increasingly more desirable rewards, which encourages extended play. Although it can be discussed whether designing a video game to have an “addictive” gameplay loop is problematic or not, it is important to distinguish loot boxes that are purchased for real money from other fundamental aspects of game design.

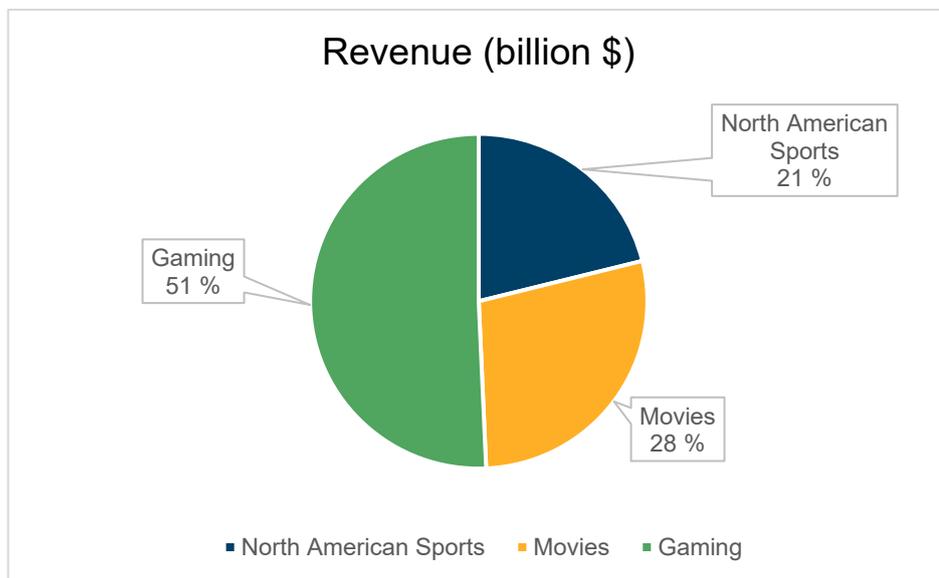


Figure 4: The gaming industry seen in comparison to industries we intuitively grasp as large. Illustration: (Illustration: Norwegian Consumer Council)



2.1 Deceptive design

Since loot boxes can usually be bought and opened with the click of a button, the friction of making an in-game purchase is almost non-existent. Physical mystery boxes require consumers to go to the store and purchase the items or to buy them online and wait for the order to arrive, which reduces the chances of impulse buying. What is more, an online purchase benefits from a 14-days cool-down period in the EU. However, this safeguard is non-existent with in-game purchases where the right of withdrawal does not apply.

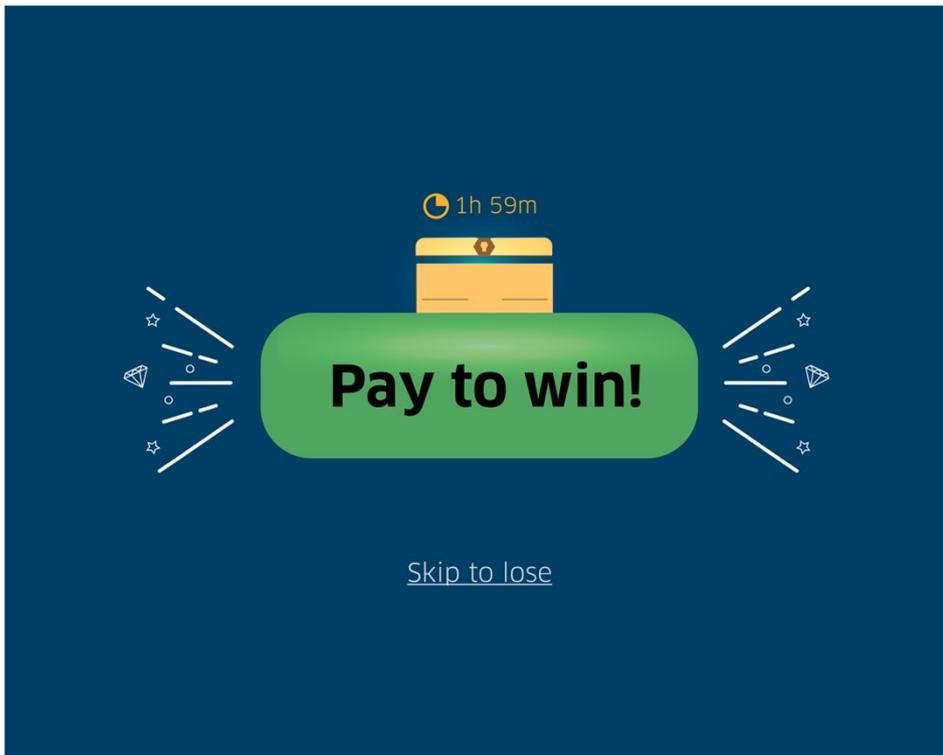


Figure 5: Mock-up of deceptive design, where both a “fear of missing out”-timer (FOMO), small “skip”-button and large “buy”-button is present. (Illustration: Norwegian Consumer Council /Hanne Fossaa Eriksen)

Virtual environments make it possible for video game companies to employ a large variety of deceptive design, tricks that exploit cognitive or behavioral biases and vulnerabilities to incentivize spending. This may include compelling or confusing visuals, in-game currencies that have multiple exchange rates and obscure the real costs of purchases, and entire aspects of game design.

New research examining manipulative designs in children's mobile games shows that navigation constraints - for example, pages that prompt purchases between every level of a game and are difficult to minimize, or store pages that automatically show the most expensive items first - may subtly nudge users

towards purchases. Games also fabricate time pressure to influence decision-making or use trusted characters to encourage purchases.²⁵

These techniques are ubiquitous and can essentially manipulate or deceive consumers into making choices they otherwise would not have made.

Some cognitive biases are more commonly exploited than others in the design of loot boxes. The **“fear of missing out”** (FOMO) involves making consumers feel that they must engage in spending before a unique opportunity is gone forever, which is often tied to serving limited offers, countdown timers, and similar mechanisms.

The **“sunk cost fallacy”** happens when we are focused on our past investments instead of our present and future costs and benefits, meaning that we commit ourselves to decisions that are no longer in our best interests. This fallacy is often exploited by having consumers invest significant time and effort in a game before the push to spend money ramps up. This increases the chance that the consumer will start paying, since they are already invested.

Next is the **“survivorship bias”**, which is a cognitive shortcut that occurs when a visible successful subgroup is mistaken as an entire group, due to the failure subgroup not being visible. With loot boxes this happens when the small group of loot box winners (and often influencers and game streamers) get screen time, promoting their success. The larger group of players who received bad draws, is not represented.

Finally, the **“gambler’s fallacy”** describes our belief that the probability of a random event occurring in the future is influenced by previous instances of that type of event. This often results in people misunderstanding statistical probabilities. Even if the consumer is faced with a miniscule probability of receiving the reward they want from a loot box, the gambler’s fallacy is a belief that an unlucky streak means that the desired reward must be right around the corner, even though statistically the chance is the same with or without the streak.

²⁵ Radesky JS, Hiniker A, McLaren C, Ekgun E, Schaller A, Weeks H, Campbell S, Gearhardt A. Prevalence and correlates of manipulative design in apps played by young children. JAMA Open. In press.





Figure 6: The probability to win in loot boxes may be diminishingly small. (Illustration: Norwegian Consumer Council /Hanne Fossaa Eriksen)

The randomness and design of loot box mechanisms have raised accusations of **being comparable to virtual casinos**.²⁶ Consumers, who may be very young, are continuously enticed to spend in-game currencies to purchase loot boxes in order to have a chance of receiving an attractive reward. The most coveted rewards are usually put on prominent display in-game, while the actual probability of achieving these rewards may be diminishingly small.

The aesthetics surrounding purchasing and opening loot boxes often include bright colors, pleasing sounds, and other mechanisms designed to trigger a dopamine release. The design of loot boxes and the experience of opening them are the result of **careful design decisions based on behavioral psychology, player feedback and user data**.²⁷

The digital nature of video games allows developers to **continuously monitor and measure the responses to various techniques, and to adjust the mechanisms based on behavioral data to maximize consumer spending**. This may include the design of the choice architecture for purchasing loot boxes, the

²⁶ “Lifting the Lid on Loot-Boxes Chance-Based Purchases in Video Games and the Convergence of Gaming and Gambling”, James Close & Joanne Lloyd
https://www.begambleaware.org/sites/default/files/2021-07/Gaming_and_Gambling_Report_Final_0.pdf

²⁷ “Behind the addictive psychology and seductive art of loot boxes”, Alex Wiltshire
<https://www.pcgamer.com/behind-the-addictive-psychology-and-seductive-art-of-loot-boxes/>



time and place that the loot box is advertised to the player in-game or even by placing players in game sessions together with other players who are high spenders to influence a purchasing decision.²⁸

Although the prevalence of these kinds of tailored mechanisms is impossible to prove without insight into the algorithms at play, there are several patents that cover various forms of personalization designed to maximize spending on in-game purchases.²⁹

All these factors mean that consumers are enticed to spend more time and money in the game and thus maximize revenue for the video game companies. Meanwhile, the use of certain casino-like mechanisms may accustom consumers, including young children, to habits that closely resemble gambling addictions.³⁰ Whereas casinos normally have strict age restrictions (and are banned in several jurisdictions), many video games that include loot boxes are sold to and played by young children, making this particularly problematic.

Research has shown links between the purchasing of loot boxes and developing gambling addiction, which may cause significant harm, particularly to minors.³¹

2.2 Opaque algorithms and skewed probabilities

The virtual nature of loot boxes provides several unique possibilities for the seller to manipulate consumer choices. Since the markets where loot boxes are purchased, opened, and used are purely digital, the content and probability of any given loot box can be changed in real time and personalized. Industry actors tout the use of machine learning to **personalize games based on behavioral data in order to maximize spending**, signaling that these practices will only increase.³² This means that the rarity of various items can change from day to

²⁸ EA states that "user data does not influence the contents of FUT Packs or influence the probabilities of a user receiving particular items." <https://www.frc.ch/jeux-video-le-porte-monnaie-dicte-trop-la-donne/#ea>

²⁹ "Unfair play? Video games as exploitative monetized services: An examination of game patents from a consumer protection perspective", Daniel L. King, Paul H. Delfabbro, Sally M. Gainsbury, Michael Dreier, Nancy Greer, Joël Billieux <https://www.sciencedirect.com/science/article/pii/S0747563219302602>

³⁰ "Behind the addictive psychology and seductive art of loot boxes", Alex Wiltshire <https://www.pcgamer.com/behind-the-addictive-psychology-and-seductive-art-of-loot-boxes/>

³¹ "Lifting the Lid on Loot-Boxes Chance-Based Purchases in Video Games and the Convergence of Gaming and Gambling", James Close & Joanne Lloyd https://www.begambleaware.org/sites/default/files/2021-03/Gaming_and_Gambling_Report_Final.pdf

³² "Jump-Data Driven Intelligence and Digital Legends innovate in gaming monetization through artificial intelligence assets.", Digital Legends press release <https://www.gamespress.com/en-US/Jump-Data-Driven-Intelligence-and-Digital-Legends-innovate-in-gaming-m>



day and that **probabilities can be altered based on user data**. Certain groups or individuals may have different probabilities to receive certain items based on inferred behavior, such as likelihood to spend money. The extent of these practices in the video game industry is not known because the companies generally do not share data about how loot box probabilities are calculated or how their algorithms function.

The vast troves of player data may also **pose significant privacy risks**. Collecting behavioral data, such as inferences about a user's biometric identity, age and gender, emotions, skills, interests, consumption habits, and personality traits, from millions of players may be used to create extensive user profiles that can be used for manipulative and discriminatory purposes.³³

Data breaches, where personal data about individual consumers is leaked, may also lead to significant security risks, as seen from countless of data breaches from companies collecting large sets of consumer data in the gaming industry³⁴ and more generally³⁵

There is also a **general lack of transparency** in the underlying systems that calculate the probabilities of many loot box mechanisms. Since the algorithms calculate and determine outcomes, loot boxes are usually kept under wraps, making it impossible for consumers, researchers or other third parties to access raw data about the techniques used, how probabilities are calculated, the exploitation of user data, and so on.

Although some video game publishers and **platforms have added certain information about the probabilities at play when opening a loot box**³⁶, **these efforts have generally been lackluster**. Researchers attempting to determine the actual probability of receiving certain sought-after items have resorted to mystery shopping or empirical studies consisting of opening a large volume of loot boxes^{37 38}, and the algorithms used to determine outcomes have not, as far as we are aware, been subject to regulatory scrutiny. However, there have been

³³ "Surveilling the Gamers: Privacy Impacts of the Video Game Industry", Jacob Leon Kröger, Philip Raschke, Jessica Percy Campbell, Stefan Ullrich
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3881279

³⁴ "5 Unfortunate Cyber Attacks Against Gaming Companies", 17/08/2021:
<https://gamingbolt.com/5-unfortunate-cyber-attacks-against-gaming-companies>

³⁵ "Companies lose your data and then nothing happens", 21/04/2022:
<https://www.vox.com/the-goods/23031858/data-breach-data-loss-personal-consequences>

³⁶ "Microsoft, Sony, Nintendo won't allow loot boxes on consoles unless publishers disclose drop rates", Matt Wales <https://www.eurogamer.net/articles/2019-08-07-microsoft-sony-nintendo-wont-allow-loot-boxes-on-consoles-unless-publishers-disclose-drop-rates>

³⁷ Mentzoni, Rune: "Blurred Lines: Loot Boxes in Video Games" (2019)
<https://youthgambling.mcgill.ca/en/PDF/Newsletter/Fall2019.pdf>

³⁸ Mentzoni, Rune: The complete FUT-dataset (2019)
https://www.reddit.com/r/FIFA/comments/8nj3z6/fut_pack_opening_research_project_3800_later/



cases where video game companies have been shown to increase probabilities or supply desirable in-game items for high-profile influencers, indicating that the probabilities are not random.³⁹

2.3 Aggressive marketing

The use of loot boxes is often promoted by **advertising the possible rewards**, both within and outside the game, to push consumers to spend more money in the hope of obtaining the rewards. This may include advertising campaigns showing rare in-game content that can be earned from loot boxes, by placing consumers in online games together with other players who use items from loot boxes, displaying prominent banners and pop-ups in-game **that push consumers to purchase loot boxes**, and various other techniques.

Many games advertise “special” in-game items that can be obtained from loot boxes for only a limited time. These may include seasonal events such as Halloween promotions, where players may only have a week or two to obtain certain content before it becomes unobtainable. **Such limited offers serve to trigger the fear of missing out and spur more impulse buying.**

Consumers that see a giant in-game banner every time they enter a game, showing attractive rewards that are available from loot boxes, may think that they will receive these rewards if they spend a little money. However, the probabilities are often so diminishingly low that they might as well be non-existent. **Some of this marketing, like ambiguous odds, may be considered outright deceptive or misleading due to omitting important information that could affect the purchasing decision.**

³⁹ “Game Publishers Offered Better Loot Box Odds to Sponsored Streamers” Jasmine, Henry <https://gamerant.com/ftc-loot-boxes-better-odds-sponsored-streamers/>



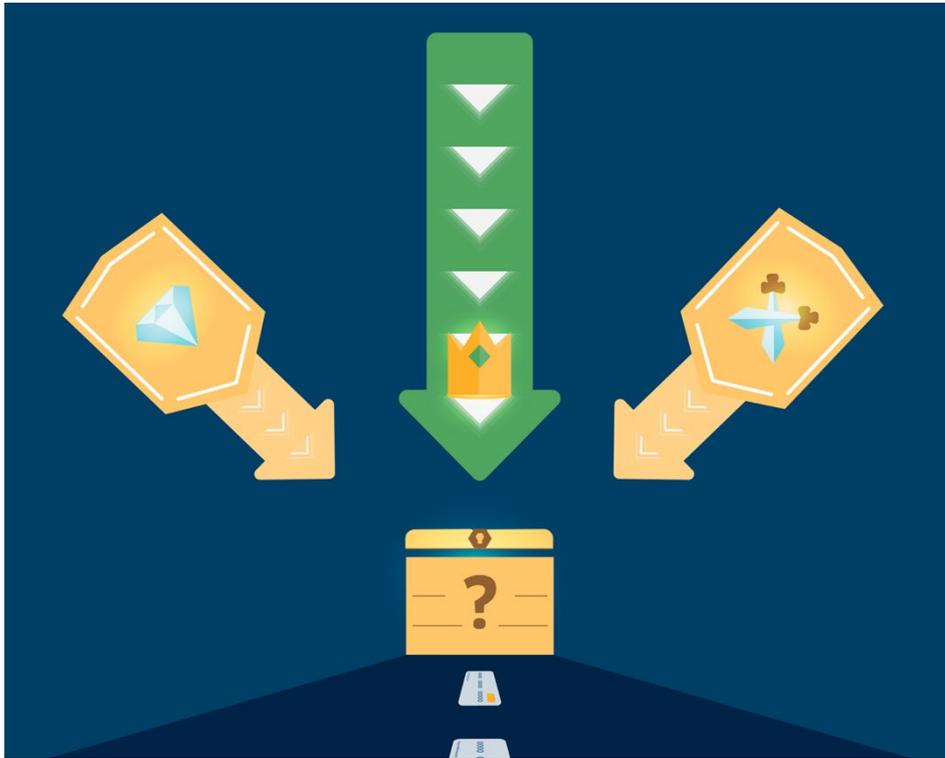


Figure 7: Many games are designed to make you want to spend extra money on content, with persistent and aggressive advertisements in persuasive design. (Illustration: Norwegian Consumer Council /Hanne Fossaa Eriksen)

The socially networked aspect of many video games also adds a strong social element that encourages more spending. Consumers will constantly be exposed to other players who may have spent money on loot boxes and have “gotten lucky”. Furthermore, paid influencer and streamer and other celebrities regularly post videos of loot boxes being opened, often in partnership with video game companies, garnering millions of viewers.⁴⁰

2.4 In-game currencies and hidden pricing

Loot boxes are rarely purchased directly for real money. Instead, the consumer purchases some form of in-game currency for real money, which can then be traded in for loot boxes and other in-game content. Some games even operate with many kinds of virtual currencies, each of which may be priced differently.

The use of in-game currencies constitutes an extra transaction layer that abstracts the real-world cost of the virtual item. Furthermore, consumers generally can neither refund purchased in-game currency nor trade it back into actual money.⁴¹ As an example, if a consumer purchase 200 units of an in-game

⁴⁰ “FTC Investigation Reveals Streamers Are Paid to Open Loot Boxes, Joshua Duckworth <https://gamerant.com/ftc-investigation-streamers-paid-open-loot-boxes/>

⁴¹ “Lawsuit claims Fortnite's random loot boxes were 'deceptive'”, Jay Castello <https://www.rockpapershotgun.com/lawsuit-claims-fornites-random-loot-boxes-were-deceptive>



currency and spends 150 of this currency on a loot box, there is usually no way to refund or remunerate the 50 remaining units of virtual currency.

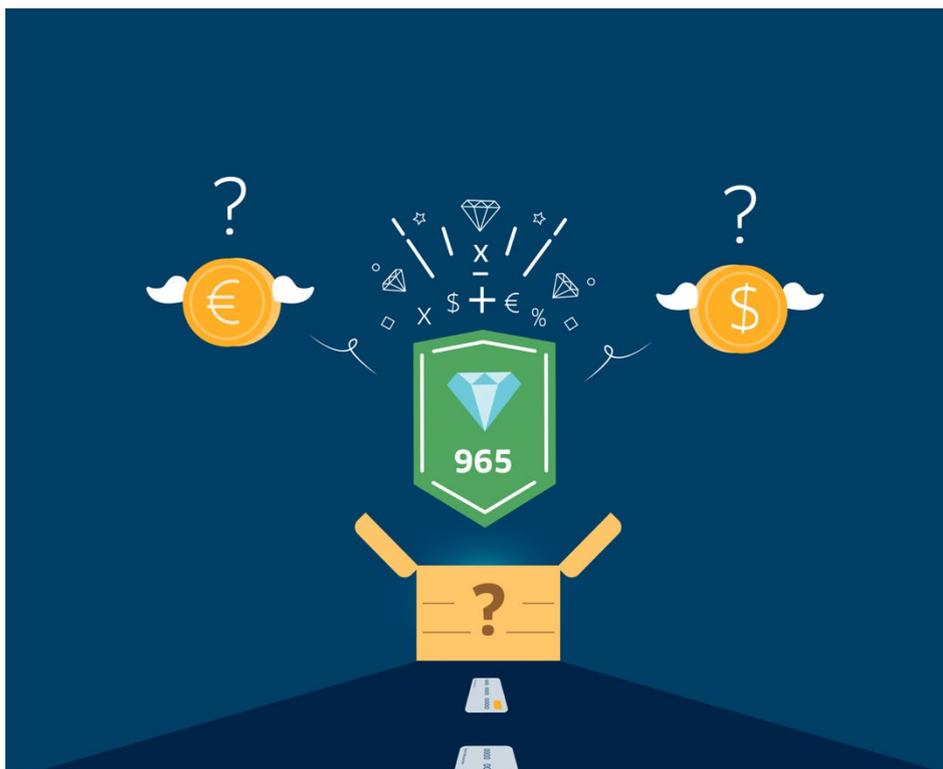


Figure 8: Virtual currencies, several layers of pricing and in-game design elements obscure the real cost of many in-game purchases. (Illustration: Norwegian Consumer Council /Hanne Fossaa Eriksen)

2.5 Very high cost of freemium and endless grinding

Although many games featuring in-game purchases are advertised as free to play, this often comes with a major caveat. It is not uncommon for new players to receive a starting reward of significant in-game value, ensuring smooth and fun gameplay for the first hours or days of playing. **This serves two purposes: to get the player hooked by investing time and effort, and to give the impression that generous in-game content will be rewarded simply by playing the game.**

After the honeymoon period of these freemium games is over, it is often time to start extracting revenue from the player. The frictionless progress of the first hours comes to a halt, and gradually the player must spend more time waiting between actions or invest significant effort into grinding, i.e., performing repetitive and often deliberately boring actions before progressing.⁴² **By this**

⁴² “Video game giant EA steering players into loot-box option in popular soccer game, insider says”, Erica Johnson, Kimberly Ivany <https://www.cbc.ca/news/gopublic/fifa21-loot-boxes-electronic-arts-1.5996912>

point, the player is already invested in the game, making it more difficult to walk away, i.e., the sunk cost fallacy.

If the player does not want to wait six hours in order to continue playing or spend days grinding, they must start doing in-game purchases to skip ahead. **This tendency to add “busywork” for which players are encouraged to pay real money to skip has received criticism from consumers**, not only of freemium games but also of major video games selling at full price up front to which this practice has been extended.⁴³

2.6 Risk of losing content at any time

Since loot boxes are digital content, consumers do not “own” the loot boxes or any in-game content obtained from them in the traditional sense of the word. Ownership of any in-game content is regulated by complicated licensing agreements, and **the video game company often grants itself, via the terms and conditions to use the video game, the power to change or revoke any in-game content at its own discretion.**

This means that consumers may be left with few possibilities for recourse if content they have paid for is revoked. For example, in November 2021 the company Niantic announced that they would shut down the mobile game Harry Potter: Wizards Unite. The announcement stated that consumers would not be able to refund or otherwise keep any in-game content, even though this was purchased for real money.⁴⁴

Consumers can also lose access to content they have paid for if their accounts are suspended. There are numerous examples of players discovering that their digital content has been revoked because their in-game or platform-wide accounts were banned from the service, often with no explanation given.⁴⁵ There are various reasons why an account may be banned. For example, some algorithms designed to flag cheating players can sometimes mark regular players who were simply in proximity to a cheater or who received in-game benefits from such cheats. This becomes particularly problematic if paid content is revoked with no explanation or recourse.

⁴³ “Assassin’s Creed Odyssey has a huge grinding and microtransaction problem”, Ben Kuchera <https://www.polygon.com/2018/10/3/17931920/assassins-creed-odyssey-level-grinding-microtransaction-problem>

⁴⁴ “Harry Potter Wizards Unite” <https://www.harrypotterwizardsunite.com>

⁴⁵ “This is what happens when your Nintendo Switch account gets banned”, Sean Buckley <https://www.cnet.com/tech/gaming/this-is-what-happens-when-your-nintendo-switch-account-gets-banned-fortnite/>



Such contractual clauses allowing video game producers to unilaterally change the scope of the contract without valid reasons, and without bearing any responsibility towards consumers are likely to be in breach of the fair business practice, in more than one legal system.⁴⁶

⁴⁶ It is noteworthy that similar terms have already been declared unfair by the CPC network in its Common Position of national authorities within the CPC-Network concerning the protection of consumers on social networks.



3 Case studies: Loot boxes in the field

Loot boxes are featured in a wide range of video games across different gaming systems. Loot box mechanisms also take a variety of forms, with variations in design, marketing, content, and more. Some may be more transparent or less manipulative in their design, while others are more opaque or otherwise overtly problematic.

Below, we describe the loot box mechanisms of two popular video games: FIFA 22⁴⁷ and Raid: Shadow Legends. The former is a football game that is available on PC, Xbox and PlayStation systems. The latter is a freemium mobile game available on Android and iOS devices. The games were selected based on their popularity, visibility in the market, revenue, and target audiences.

The screenshots used throughout this chapter were taken in November 2021 (Raid: Shadow Legends) and January 2022 (FIFA 22). Examples from FIFA 22 were taken on a PC running the platform EA Origin but are representative of the game across platforms. The screenshots from Raid: Shadow Legends were taken on a mobile phone running Android.

3.1 FIFA 22

FIFA is a football game franchise that has existed for decades and that is published by the major video game company Electronic Arts (EA). Since 1993, a new game in the FIFA franchise has been released on an annual basis. FIFA is the world's best-selling sports video game, and one of the most popular video game franchises, having sold more than 325 million copies across games.⁴⁸ FIFA 22 was released on 1 October 2021 and is the latest iteration of the game. The game has a recommended age (PEGI-rating⁴⁹) of 3+ years. Unlike many other games featuring in-game purchases, FIFA games are sold at full retail price.

With FIFA, kids under 13 years cannot use their own accounts to play. Their EA accounts have to show they are over 13 years.⁵⁰ Younger kids either have to lie

⁴⁷ The developer of the game FIFA, EA Sports announced that after FIFA 23, the game will change its name to EA Sports FC. <https://www.ea.com/nb-no/news/ea-sports-fc>

⁴⁸ "As FIFA Game Passes Sales Milestone, EA Sports Seeks New Markets And To Clear Up Image Rights 'Misunderstanding'", Robert Kidd <https://www.forbes.com/sites/robertkidd/2021/02/02/as-fifa-game-passes-sales-milestone-ea-sports-seeks-new-markets-and-to-clear-up-image-rights-misunderstanding/>

⁴⁹ PEGI provides age classifications for video games in 38 European countries. The age rating confirms that the game is appropriate for players of certain age. PEGI considers the age suitability of a game, not the level of difficulty. <https://pegi.info/>

⁵⁰ EUs answers HQ: <https://answers.ea.com/t5/Other-FIFA-Games/FIFA-Ultimate-Team-for-children/td-p/5644768>



or use their parent's or older siblings' accounts. It is known that even the youngest kids are playing FIFA.⁵¹

Some safety experts have found that most parents and carers have little to no concerns about the child in their care playing FIFA. All games can present risks to children and young people.⁵²

3.1.1 FIFA Ultimate Team

In 2008, EA introduced FIFA Ultimate Team (FUT) as a new online game mode that FIFA players could access. In the years since its initial release, FUT has grown into the most popular of the FIFA games and has become one of EA's main sources of revenue.⁵³ In 2021, internal documents showed that EA designs the FIFA games to drive players toward the FUT game mode at every opportunity, as this is where the company generates post-sale revenue.⁵⁴

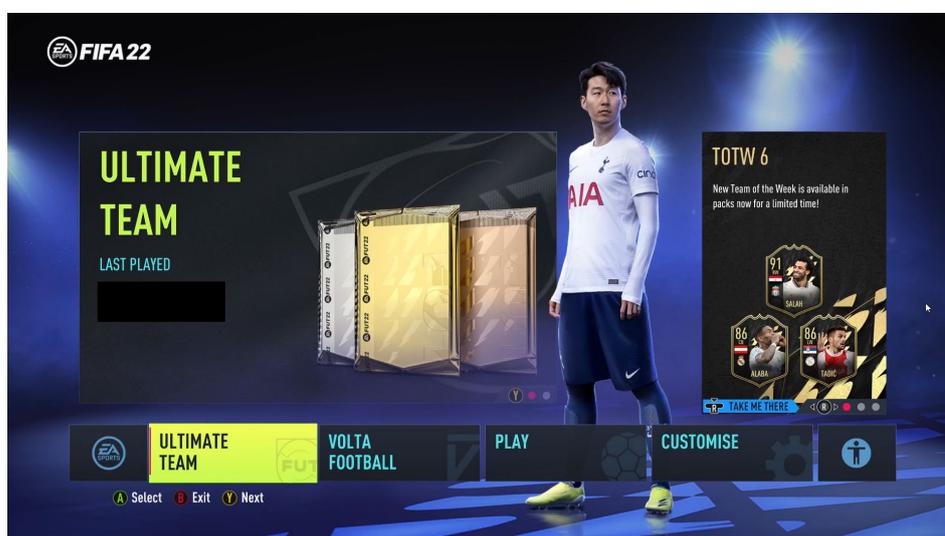


Figure 9: The FIFA 22 main menu. (Illustration: Screenshot from FIFA 2022)

The FUT game mode is a competitive online game where players build their “ultimate team” by opening virtual “FIFA packs” containing a random assortment of in-game items. These packs are essentially loot boxes and may

⁵¹ Losing to a 5 year-old on Fifa: <https://www.youtube.com/watch?v=2Baf-Qoxtxg>
Fifa Kids Gaming: <https://www.youtube.com/watch?v=0MkZbjlaKsg>

⁵² The FIFA Playbook – A Guide for Parents and Carers
<https://oursaferschools.co.uk/2021/10/15/fifa22/>

⁵³ “EA made \$1.62bn from Ultimate Team in its last financial year”, Wesley Yin-Poole
<https://www.eurogamer.net/articles/2021-05-27-ea-made-usd1-62bn-from-ultimate-team-in-its-last-financial-year>

⁵⁴ “Video game giant EA steering players into loot-box option in popular soccer game, insider says”, Erica Johnson, Kimberly Ivany <https://www.cbc.ca/news/gopublic/fifa21-loot-boxes-electronic-arts-1.5996912>



contain avatars of real-life football players (“cards”), cosmetics such as team kits and badges, and other in-game content. After obtaining cards from a pack, they are used to put together teams which players can then use to play virtual games of football against other players.

3.1.2 Packs and currencies

Throughout the FIFA game cycle, FUT players are continuously incentivized to open packs to upgrade their team. Packs are either obtained from reaching milestones in the game or by purchasing them using one of the two in-game currencies, “FIFA Points” or “Coins”.

FIFA Points is the premium currency of the game and can only be purchased using real money in the in-game store. Coins are earned through playing the game or through the in-game “transfer market”, an auction system where players can buy and sell cards from and to other players.

Packs that are earned through normal gameplay instead of being purchased from the in-game store usually contain “untradable” cards that cannot be sold on the in-game transfer market. Packs that are purchased using Coins or FIFA Points in the in-game store are “tradable”, which means they can be traded with other players for in-game Coins. Of course, the quickest way of obtaining packs and Coins is by purchasing and spending FIFA Points.⁵⁵



Figure 10: The FIFA Points Store. (Illustration: Screenshot from FIFA 2022)

⁵⁵ According to players in the FIFA community, obtaining the highest value players through regular gameplay may take thousands of hours. https://www.reddit.com/r/FIFA/comments/huv04o/how_many_hours_of_grinding_would_it_take_to_earn/



The price of FIFA Points varies somewhat by currency but costs around EUR 1 for 100 Points. Points can be purchased in amounts of between 100 and 12 000 for prices ranging from EUR 1 to EUR 100 respectively.

The packs that can be purchased from the in-game store vary day by day as packs rotate in and out of the storefront. The most valuable types of packs in the store are “Promo Packs”, which cost more but promise a greater chance of desirable rewards. **These packs are usually only available for 24 hours, which triggers a fear of missing out and spurs players into making a purchase before it is too late.**

During certain in-game promo events, the game also features “lightning rounds”, in which a limited number of high-cost packs are made available for a short time. This can include certain packs being limited to 100 000 purchases worldwide, with a visible counter tracking the number of packs left in real-time. **These artificial limitations also serve to trigger a fear of missing out, and to spur purchases before the timer runs out.**



Figure 11: The Promo Packs Store. (Illustration: Screenshot from FIFA 2022)

In FIFA 21, EA introduced the concept of “Preview Packs”, which allowed players to see the content of certain Packs before deciding to spend Coins or FIFA Points to purchase the pack. However, as FIFA 22 was released, this feature was generally relegated to low-value packs, while the high-end promo packs did not include the option to preview its contents. Similar transparency



mechanisms had previously been introduced in the popular freemium game Fortnite.⁵⁶

These transparency mechanisms have few benefits for consumers, since they simply move the unknown factor one purchase forward. The player still must purchase a pack to get the next one.

The act of opening a pack in FUT is accompanied by colorful animations and triumphant music. Visual elements change according to the rarity of the cards that are packed; rarer cards are usually accompanied by different colors and visual elements and graphics such as confetti and fireworks. Higher rated cards are revealed with a “walk-out” animation, featuring the virtual player walking onto the screen and dancing or posing. **These design elements contribute to a sense of anticipation and reward and are presumably designed to trigger dopamine releases that keep the player opening packs.**



Figure 12: Graphics when opening a FIFA Pack. (Illustration: Screenshot from FIFA 2022)

3.1.3 Promo events and power creep

In addition to containing “basic” card versions of real-life football players, FUT regularly features “promo events” that may coincide with seasonal events such as holidays or with real-world football events such as the UEFA Champions League. During these events, various boosted versions of certain cards are available in packs for a limited time. The promo events are advertised throughout the game by showing the available boosted players, for example on loading screens when entering FUT and in the in-game menus.

⁵⁶ “Fortnite loot box llamas go ‘see-through’”, BBC <https://www.bbc.com/news/technology-47028992>





Figure 13: FUT loading screen featuring a promo event. (Illustration: Screenshot from FIFA 2022)

In gameplay terms, promo events mean that FUT introduces significant power creep as time goes on. Power creep is a process whereby cards that are considered rare, good, or otherwise desirable become outdated or outpowered as upgraded versions are released. Since the game is competitive in nature, **players will often be matched up with opponents who have better cards, which puts them at an in-game disadvantage that can halt their progress in the game.**

When two even players compete, the psychological effect of regularly losing makes the player wish for a slightly better team. It is impossible to archive, since the game automatically matches the player against other players who are at least at their level.

In practice, **the power creep over the FIFA gameplay cycle means that a card that is valuable and/or desirable today usually diminishes in value as time goes on.** Although the in-game properties of a certain card will not change (except for certain types of cards), the card is depreciated as other better cards are released. This is reflected in the in-game transfer market, where cards that are sold for millions of Coins at one point in time will be traded for less than 1/10 of the number of Coins later in the game cycle.⁵⁷

⁵⁷ For example, at the launch of FIFA 21 in November 2020, the 'basic' version of the Cristiano Ronaldo card was being traded for around 2 million Coins. By around February 2021, this value had halved, and by May 2021 the card was selling for less than 150 000 Coins. <https://www.futbin.com/21/player/542/cristiano-ronaldo>





Figure 14: Cards from the Team of the Year promo being advertised in the FUT menu. (Illustration: Screenshot from FIFA 2022)

This creates a **continuous gameplay loop**, where players are continuously encouraged to open packs in the hope of obtaining upgraded cards to keep up with other players. Simply put, the regular introduction of new promo events means that a FUT player will always be enticed to open packs for a slim chance of obtaining better cards. Furthermore, since a new FIFA game is released annually, the release of a new game in the franchise requires players to start from scratch, and apart from unspent FIFA Points, no in-game content carries over between games.

3.1.4 Meaningless probability disclaimers

In 2019, EA introduced the option to view the probability of packing certain types of cards from different packs, which was purportedly meant to increase transparency for players.⁵⁸ However, this feature has serious limitations.

JUMBO RARE PLAYERS PACK			PRIME GOLD PLAYERS PACK		
Minimum probability of getting one or more players of the OVR range or described category in this pack.			Minimum probability of getting one or more players of the OVR range or described category in this pack.		
	Gold 75+ Player	100%		Gold 75+ Player	100%
	Gold 82+ Player	100%		Gold 83+ Player	79%
	Gold 90+ Player	4.2%		Gold 87+ Player	8.8%
	Team of the Week Player	35%		Team of the Week Player	11%
	TEAM OF THE YEAR Player	1.3%		TEAM OF THE YEAR Player	<1%
<small>Probabilities accurate as of 27 January 2022 9:26 PM GMT. The contents of packs are dynamically generated and probabilities are verified using a computational simulation. See http://x.ea.com/48860 for more details.</small>			<small>Probabilities accurate as of 27 January 2022 9:26 PM GMT. The contents of packs are dynamically generated and probabilities are verified using a computational simulation. See http://x.ea.com/48860 for more details.</small>		

Figure 15: The reported probabilities of a Jumbo Rare Players Promo Pack and a Prime Gold Players Pack. (Illustration: Screenshot from FIFA 2022)

⁵⁸ “EA says FIFA 19 will disclose Ultimate Team pack odds”, Wesley Yin-Poole <https://www.eurogamer.net/articles/2018-06-29-ea-says-fifa-19-will-disclose-pack-odds>



In FUT, the cards featuring football players are assigned a certain numerical rating which roughly indicates how good the player is in real life and in the game. The most valuable cards in FUT are usually rated 90 or above, and the in-game value difference between an 87-rated card and a 94-rated card may be huge. As shown in the screenshot above, a stated probability of an 8.8% chance of receiving an 87+ rated card does not tell the potential buyer anything about the probability of receiving a 90+ rated card.

For example, in October 2021, the card in the game selling for the highest price, the 94-rated Ronaldo Luís Nazário de Lima, was valued in-game at around 12 million Coins.⁵⁹ The lowest valued 87-rated card was selling for less than 12 thousand Coins. Although the highest valued 87+ rated card is worth more than 1 000 times the lowest valued one in game, the **stated probability does not give players any information about whether the odds of receiving an 87-rated card is lower than for a 94-rated card.**

Similarly, **the cards featured in promo events usually have a significant in-game price gap between the least and most valuable cards.** For example, while the “Team of the Year” (TOTY) promo event was being advertised in-game, the least valuable card of the event was priced at around 200 000 Coins on the in-game transfer market, while the most valuable one was priced at 6 200 000 Coins.⁶⁰

Again, it is impossible for the player to know whether the stated probability of a 1.3% chance of receiving a TOTY card means that the odds are evenly distributed between TOTY cards or are heavily weighted toward the less valuable cards.

Some empirical evidence exists proving that the probabilities are not evenly distributed within their category.⁶¹ This means that in a category of 11 cards, there will not be an even 1/11 chance of getting each card. This is contrary to what one might expect, given that most people are used to unbiased probabilities.⁶²

It makes even less sense in the example of the Prime Gold Players Pack, with a stated probability of <1%. **The stated probability becomes at best meaningless,**

⁵⁹ FutBin <https://www.futbin.com/22/player/267/ronaldo>

⁶⁰ FutBin

https://www.futbin.com/22/players?page=1&version=toty&sort=pc_price&order=desc

⁶¹ Mentzoni, Rune (2019)

https://www.reddit.com/r/FIFA/comments/8nj3z6/fut_pack_opening_research_project_3800_later/

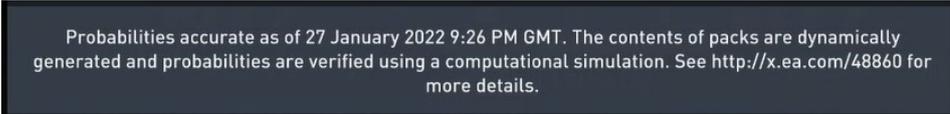
⁶² What is a fair coin? https://en.wikipedia.org/wiki/Fair_coin



and at worst outright deceptive to a player spending money on FIFA Points hoping to obtain a high-value card.

3.1.5 Against all odds

As stated in a tiny disclaimer when inspecting FIFA pack probabilities, the “contents of packs are dynamically generated”. This is vaguely worded but implies that probabilities may change in real time. The enormous amount of real-time user data that is available to the developers **means that probabilities can potentially be manipulated in real time based on any number of factors, all with the objective of incentivizing and maximizing spending.**⁶³



Probabilities accurate as of 27 January 2022 9:26 PM GMT. The contents of packs are dynamically generated and probabilities are verified using a computational simulation. See <http://x.ea.com/48860> for more details.

Figure 16: FUT disclaimer about pack probabilities. (Illustration: Screenshot from FIFA 2022)

For example, a low-spending player may receive a valuable card to push them toward spending more money, or a player who is on the verge of quitting the game due to poor luck may receive a high-value card to draw them back to the game. However, it is impossible for anyone outside of EA to know whether or how these probabilities are manipulated behind the scenes, as there is no transparency in how the algorithms behind the packs work.

The closest a curious player can get to gaining any insight into how the algorithms operate is through the in-game disclaimer about pack probabilities, which links to an article on the EA website with more details. According to the website, EA calculates pack probabilities by running simulations of pack openings:

“Pack probabilities in FIFA are calculated by simulating the opening of a very large number of each pack type in the FUT Store. The number of packs opened in a simulation varies based on the content within those packs, but it will always be enough to be statistically valid. We then re-run this process with every content update.”⁶⁴

This implies that the probability rating of any given FIFA Pack is not controlled by EA in any way, and that the company can only simulate pack openings to attempt to figure out the probabilities on behalf of the players. Although there

⁶³ EA states that this is not the case for FIFA Ultimate Team. <https://www.frc.ch/jeux-video-le-porte-monnaie-dicte-trop-la-donne/#ea>

⁶⁴ “Pack Probability in FIFA Ultimate Team”, Electronic Arts <https://www.ea.com/games/fifa/news/fifa-pack-probabilities>



is no further information about how this works in practice, it seems very unlikely that EA has no control over the algorithms that decide the probabilities.

The diminishingly small chances of obtaining TOTY Kylian Mbappe

To illustrate the diminishingly small probabilities at play when opening a FIFA pack, we provide a *hypothetical example* using the information provided by EA and some assumptions need to make the calculations.

A FUT player looking to pack the Team of the Year promo card of the cover star of the game, Kylian Mbappe, had less than two weeks to do so before the promo ended, and the card would no longer be available in packs. The TOTY Mbappe card was prominently featured in the menus and on loading screens in-game. The pack with the highest probability of obtaining a card from the TOTY promo, the Jumbo Rare Players Pack, featured a 1.3% probability to receive a TOTY promo card, and cost 2 000 FIFA Points, equivalent to around EUR 20.

FIFA points are purchased in bulks of 2200. This means that a player always has 200 points left or that after buying 10 FIFA point packs and subsequently 10 Jumbo Rare Players Packs, the player has enough points left over to buy an additional pack of cards.

If the player is to obtain an TOTY card, they must beat a 1.3% probability. This means opening on average 77 Jumbo Rare Player Packs, which would cost roughly 150 000 FIFA Points, or around EUR 1 400.

There were 11 different TOTY cards available from the pack. If the probability of packing a specific TOTY card is evenly distributed across these 11 cards, the probability of obtaining TOTY Mbappe from one Jumbo Rare Player Pack is 0.11%.

This means that, on average, the player would have to purchase a grand total of 847 Jumbo Rare Player Packs to get a specific TOTY card. To do so, the player would have to spend nearly 1.7 million FIFA Points, or roughly EUR 13 500.

We note that this example is based on average probability and unbiased distributions. For the player to be more certain of receiving TOTY Mbappe, several thousand Jumbo Rare Player Packs would have to be opened.⁶⁵

⁶⁵ The average probability of getting heads in a fair coin toss is 50%. If you throw the coin 10 times, you might get four heads and six tails. Since fair probability deals in averages, the coin flipper has no way of knowing how many tosses it would take to be guaranteed at least one head. The same applies in FUT, but with far smaller odds and potentially biased draws. It would therefore be unfeasible to perform a binomial



Seasoned FUT players will argue that it is possible to make an initial investment and then trade players to make your team, but that would be both uncertain and unreasonably time consuming.

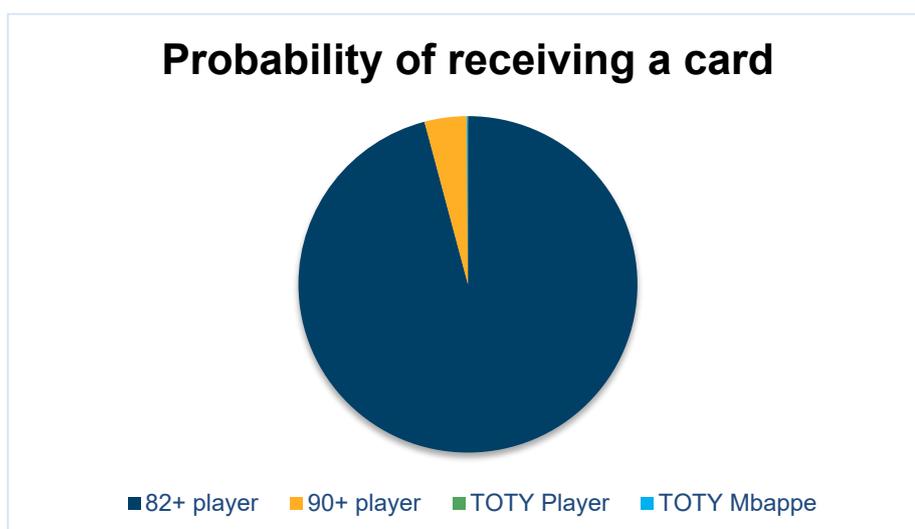


Figure 17: In this diagram showing the probability of receiving a TOTY card or TOTY Mbappe. The sectors indicating TOTY Player and TOTY Mbappe is too small and is not visible at all. (Illustration: Norwegian Consumer Council)

However, this estimate is further complicated by two factors. First, the Jumbo Rare Gold Player Pack has a purchase limit of 12 packs within 24 hours. After having purchased 12 packs, the player would have to resort to purchasing other packs with a lower probability, such as the Prime Gold Player Pack, which has less than 1% probability of a TOTY card. Second, there is no available data to suggest that the probability of obtaining the TOTY Mbappe card is equal to the probability of packing a lower-value TOTY card. On the contrary, research indicates that probabilities in FUT packs are heavily weighted toward lower-value players.⁶⁶

In short, an estimate of having to spend EUR 13 500 to obtain this specific card is a very conservative estimate, and the actual probability is in fact much lower. Leaving aside cognitive biases and other factors, it is impossible for the player to know the actual probability of packing the TOTY Mbappe card, even if they are highly educated in mathematics and statistics.

calculation, since the uncertainty of the factors is too great. There are no guarantee that the distribution of cards in packs in video games conform to the Gaussian distribution, with the consequence that predictions will be inherently faulty.

⁶⁶ "FUT pack opening research project: €3800 later", Rune Mentzoni
https://www.reddit.com/r/FIFA/comments/8nj3z6/fut_pack_opening_research_project_3800_later/



Although the probability of receiving a high-value reward from a given FIFA Pack is diminishingly low, this is difficult for regular consumers to understand. **The gambler's fallacy – the cognitive bias and false belief that makes people think that every opened Pack increases the chance to get lucky – means that transparency is not a panacea for these issues.**

3.1.6 Spend money or spend years grinding

Even though EA has claimed that all cards in the game are available without paying for FIFA Points, the actual numbers tell a different story.⁶⁷ As an illustration, a player earns about 500–800 Coins for each game played, which takes between 12 and 15 minutes. A Jumbo Rare Gold Player Pack costs 100 000 Coins. Players would have to play around 150 games to afford a single Jumbo Rare Gold Player Pack, which would take more than 2 000 minutes, or 35 hours.

The hours needed have to be nuanced somewhat by the fact that a player can qualify for events that pay more Coins and by earning rewards. The point is that the average player can never earn enough just by playing to get the best cards.

To reach the average probability of receiving a TOTY card by only playing the game, the player would have to play more than 12 000 games, spending around 2 500 hours or roughly one-third of a year of continuous gameplay. The next FIFA game would be out before the player was done trying to obtain a single TOTY card, and of course the window of opportunity to receive these cards is only around a week. **If the player wanted to aim for TOTY Mbappe in the same way, the player would have to play continually for over three years to earn enough points to buy the average number of packs needed.** Although there are ways of obtaining cards other than purchasing packs in the store, such as purchasing them from the in-game market, these numbers reveal a significant “pay to win” aspect in the FIFA games.

Even though these numbers are rough calculations, the fact remains that the only hope for the average player of getting a TOTY Mbappe is to win the card pack lottery against impossible odds.

3.1.7 Summary

FIFA Ultimate Team players are continuously playing and opening packs to improve their team. The most desirable cards change on a monthly or weekly basis through the introduction of promo events featuring boosted versions of cards. These events are constantly advertised in the game through loading screens and in-game prompts, and by matching players with opponents who

⁶⁷ “Putting EA's claim “you can acquire all items without spending money” in FIFA Ultimate Team to the test”, Wesley Yin-Poole
<https://www.eurogamer.net/articles/2021-03-19-putting-eas-claim-you-can-acquire-all-items-without-spending-money-in-fifa-ultimate-team-to-the-test>



have obtained promo cards. The quickest way of obtaining these cards, and to avoid tens of thousands of hours of grinding, is by spending money on FIFA points and using the FIFA points to buy promo packs. The probability of obtaining high-value cards is exceedingly low, and it is impossible for the player to know how much money they would need to spend to obtain certain cards.

The competitive nature of FUT means that players who do not purchase packs are at a significant disadvantage against opponents who do. This creates a continuous gameplay loop that constantly incentivizes players to spend money on FIFA Points as new promos are released to keep up with the power curve of the game. Finally, when the new annual version of FIFA is released, the player base moves on to the new game, where no cards or Coins obtained carry over, and the cycle begins anew.

3.2 Raid: Shadow Legends

Launched in 2019 by the developer Plarium, Raid: Shadow Legends is a freemium mobile game that features battles with fantasy avatars called “Champions”.⁶⁸ It has a recommended age (PEGI rating) of 12+ years.

Despite being released only a few years ago, Raid: Shadow Legends has already generated nearly 48 million downloads and more than USD 569 million in lifetime revenue. In 2020 alone, the game brought in USD 303 million.⁶⁹

The objective of Raid: Shadow Legends is to collect champions to use in battles with monsters and other champions. These champions are predominately obtained from “shards”, the game’s version of loot boxes, which are gained from playing the game or by purchasing them for real money.

3.2.1 A “gacha” game

As a freemium game, the revenue from Raid: Shadow Legends does not come from selling the game itself. However, unlike many other freemium mobile games, Raid: Shadow Legends does not feature third-party ads within the game. Instead, the game seemingly generates all its revenue from in-game purchases, which it heavily advertises throughout the game.

⁶⁸ “Raid: Shadow Legends” on the Google Play Store

<https://play.google.com/store/apps/details?id=com.plarium.raidlegends>

⁶⁹ “Mobile powerhouse Raid: Shadow Legends arrives on the Microsoft Store”, Sam Desatoff <https://gamedaily.biz/article/2026/mobile-powerhouse-raid-shadow-legends-arrives-on-the-microsoft-store>



Raid: Shadow legends has been described as a “gacha” game⁷⁰, which is a genre of video games designed around mechanisms inspired by toy vending machines and similar concepts. **Mirroring the mechanisms behind loot boxes, gacha games continuously encourage and push players to spend money and/or in-game currency to receive random virtual items.**

As a gacha game, the actual gameplay of **Raid: Shadow Legends** is clearly **structured to maximize player spending**. Players need many champions to progress in the game, both higher tiers to serve as main characters and lower tiers to act as fodder for enhancing existing characters.

In addition to the gacha mechanisms, **Raid: Shadow Legends frequently exposes players to aggressive forms of in-game marketing, deceptive design**. From the very start of the game, after the player chooses a starting champion, the game bombards the player with pop-up advertisements for in-game items and “shards”, which are loot boxes containing random champions.

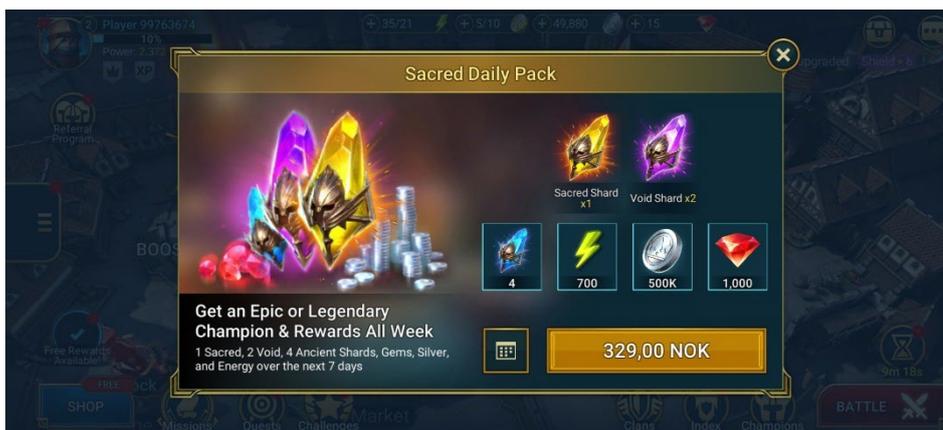


Figure 18: Example of a “Sacred daily pack” containing shards and various in-game currencies, costing around EUR 33. (Illustration: Screenshot from Raid: Shadow Legends)

To play through the game’s campaign or competitive modes, players must gather a team of champions. As the game goes on, it becomes increasingly clear to the player that they will only be able to progress in the game by unlocking more powerful champions. **These champions can only be obtained by investing a lot of money in shards and other in-game items.** Of course, by the time the player reaches this point in the Raid: Shadow Legends, they may already have invested significant time and money in the game, and thus, may fall susceptible to **the sunk cost fallacy cognitive bias**.

⁷⁰ “Raid: Shadow Legends” on Wikipedia
https://en.wikipedia.org/wiki/Raid:_Shadow_Legends



3.2.2 Confusing in-game currency

The loot boxes in *Raid: Shadow Legends*, “shards”, are presented as jewelry-bound crystals in several colors and varieties. By opening a shard, players receive one random champion to use in the game. There are four different tiers of shards: Mystery, Ancient, Void, and Sacred. The latter two, which have the highest probability of obtaining a high-value champion, can be obtained by paying real money. The player will sporadically receive shards as the game progresses.

When a shard is opened, it starts flashing and dramatically blows apart. A shadow forms, and the silhouette of the champion is shown together with colors indicating the rarity. Then the champion appears as upbeat music plays in the background.

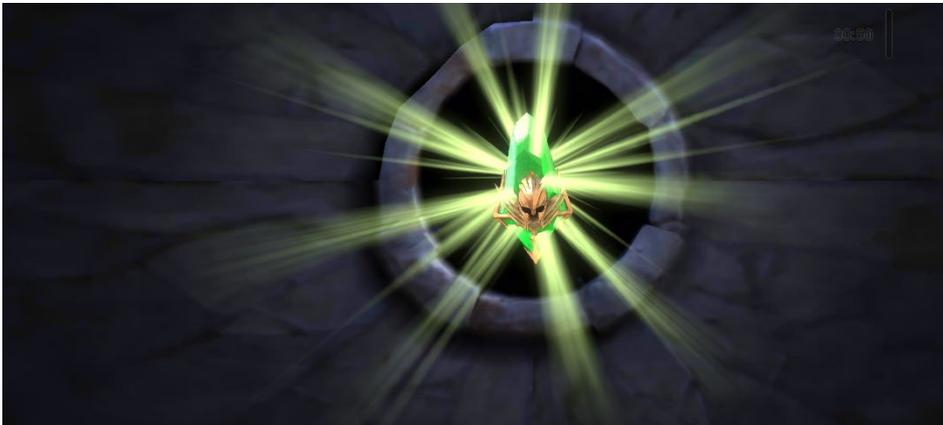


Figure 19: Animation while opening a loot box in Raid. (Illustration: Screenshot from Raid: Shadow Legends)

Lower-tier shards can be purchased by using the in-game currency “gems” and are often rewards for completing in-game objectives. **Gems are the premium currency of the game and are either purchased for real money or earned in measly amounts during regular gameplay.** Players also need the in-game currency “silver” to open shards. **Silver can only be bought for gems or earned during gameplay.**





Figure 20: Shards are opened, or “summoned”, by paying an in-game currency. (Illustration: Screenshot from *Raid: Shadow Legends*)

As shown in the screenshot above, new players receive a “Boosted Summons” bonus to enable “better odds of getting the strongest Champions”, which is enabled for a limited time to incentivize spending right from the start and serves to trigger a fear of missing out.

The champions that can be obtained from shards vary widely in rarity and utility, and each type of shard has a probability keyed to the rarity of the champion the player might receive.⁷¹ There are five different tiers of champions: Common, Uncommon, Rare, Epic, and Legendary.

Before opening a shard, players can inspect the probability of receiving various champions from the different shards. As shown in the screenshot below, the probability of receiving a high tier “Legendary” champion from an “Ancient” or “Void” shard is set at 0.5%. **Each opening of a shard is an independent event, meaning that the probabilities are not cumulative, although the gambler’s fallacy means that people will tend to think that probability increases for each opened shard.**



Shard Type	Common	Uncommon	Rare	Epic	Legendary
Mystery	74,2%	24,4%	1,4%	-	-
Ancient	-	-	91,5%	8%	0,5%
Void	-	-	91,5%	8%	0,5%
Sacred	-	-	-	88%	12%

The odds of summoning a Champion of a certain Rarity depends on the type of Shard. Every Champion of the same Rarity has an equal chance of being summoned, except when Targeted Champion Boosts are active. Targeted Champion Boosts increase the chances of summoning specific Champions.

The following Champions cannot be summoned from Sacred Shards: Shaman, Jizoh, High Khatun, Yaga the Insatiable, Dark Athel, Dark Elhain, Lordly Legionary, Scyl of the Drakes, Tainix Hatelower, Ghrush the Mangler, Visix the Unbowed, Cleopterix

The following Champions cannot be summoned from any Shards: Tessa the Tomb Angel, Lydia the Deathstare, Gomlok Skyhide, Archmage Hellmut, Rian the Conjurer, Akoth the Seared, Uroat the Soulcape, Ramantu Drakesblood, Taya, Ninja, Vari the Destroyer, Ba Satha, Vasal of the Seal, Dark Kael, Gwynneth.

Figure 21: In-game information about probabilities. (Illustration: Screenshot from Raid: Shadow Legends)

It should be noted that although the probability for each category of champion is given, the **developer does not disclose the internal probability in each character class in the given categories**. The highest tier of champion has significant variations in how much impact each champion has in the game. This difference has resulted in several lists in game media, ranking the champions from top to bottom, within their categories.⁷² **It is likely, but not proven, that the best characters with the largest impact on gameplay have the lowest internal probability**. Only the developer Plarium can know for sure how the probabilities are calculated.

3.2.3 Aggressive in-game advertising

Although Raid: Shadow Legends does not contain third-party advertising, the game has an exceedingly aggressive way of marketing different types of in-game purchases.

The term “microtransactions” are frequently uses about in-game purchases. When the product advertised are priced similarly to a fully-fledged high-budget video game, there is nothing micro about the transaction.

⁷² “Raid Shadow Legends Tier List – Best Champions 2022”, Phil James <https://gamertweak.com/raid-shadow-legends-tier-list/>



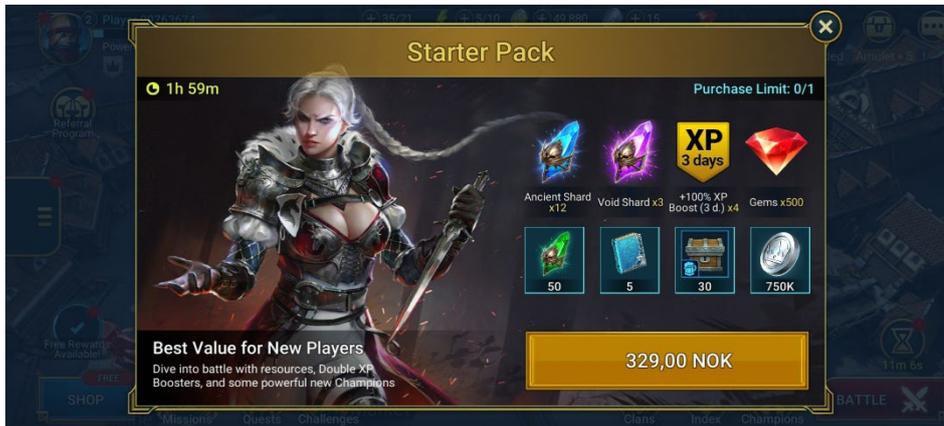


Figure 22: Limited time offer for a Starter Pack for new players, priced at around EUR 33. (Illustration: Screenshot from Raid: Shadow Legends)

After starting up Raid for the first time and playing through a tutorial segment, the consumer is presented with an advertisement for purchasing a “Starter Pack” for NOK 329, which is equivalent to around EUR 33. **Although the game is marketed as “free to play”, there is clearly a major push to spend money to proceed.**

This advertisement is displayed before the player has had the chance to play the game beyond the barebones tutorial. Consequently, the **player has no way to assess whether the goods that are being sold are worth purchasing or whether the price is fair.**

As the player proceeds through the game, **the in-game advertising becomes increasingly obtrusive.** The marketing is excessive in both volume and variety, especially when the consumer restarts the game after taking a break. In several attempts, over several days, the game presented up to eight different advertisements for in-game content in succession, where each individual ad had to be manually closed before proceeding with the game.⁷³

⁷³ During several hours of play, an average of 2-5 ads popped up when entering the game’s home screen. At most we encountered 8-9 in succession.





Figure 23: Advertising to keep playing to receive more rewards. (Illustration: Screenshot from Raid: Shadow Legends)

Almost every time the player returns to the game’s home screen or “base”, several more advertisements for in-game purchases pop up.

3.2.4 Pay (a lot) to win

To obtain the most desirable champions in Raid: Shadow Legends, the player must spend large amounts of money and time. **As demonstrated below, it would cost around EUR 7 050 to be almost guaranteed one of these champions.** Time restrictions on in-game purchases means it would take more than six months to do so.

Players of Raid: Shadow Legends earn lower-tier loot boxes through playing the game regularly. However, higher-tier loot boxes can only be obtained consistently by spending real money in the in-game store. As shown in the preceding subsections, purchasing an Ancient or Void shard gives the player an 8% chance of receiving an Epic champion and a 0.5% chance of receiving a Legendary champion.

Other ways of obtaining Void shards include time-based login awards. This includes daily awards and monthly awards to entice the player to keep logging in, and small rewards for staying in the game for various intervals. Other in-game events may reward you a Void shard, but they are mainly rare and random in-game events⁷⁴ with no provided probability. The random events do not give out shards in any meaningful amount.⁷⁵

⁷⁴ Called random “drops” in the gaming jargon

⁷⁵ “How to get Void Shards in Raid Shadow Legends”, Hellhades
<https://hellhades.com/how-to-get-void-shards-in-raid-shadow-legends/>





Figure 24: Daily Login Rewards. (Illustration: Screenshot from *Raid: Shadow Legends*)

The average consumer is poorly versed in understanding probabilities, and is highly susceptible to confirmation bias⁷⁶ and to the gambler’s fallacy when odds or other probabilities are involved. An 8% chance of receiving an Epic champion does not mean that 10–12 draws guarantee a win, it is only the statistical average. The random element means that even after purchasing 50 or 60 loot boxes, you are not guaranteed an Epic champion, if the odds are fair and unbiased.

There is a 0.5% probability of receiving a Legendary champion from an Ancient or Void shard. Players would have to open 200 loot boxes to reach the statistical average for getting a Legendary champion. As with FUT above, for the player to be more certain of getting a specific champion, thousands of loot boxes would have to be opened.⁷⁷

However, the game raises these probabilities slightly through a “Mercy system” built into its loot box mechanism.

⁷⁶ Confirmation bias is the tendency to search for, interpret, favor, and recall information in a way that confirms or supports one's prior beliefs or values.

⁷⁷ Binominal distribution of at least one successful draw within n-draws with a given probability.





Figure 25: The “Mercy System” of increasing probabilities. (Illustration: Screenshot from Raid: Shadow Legends)

After opening 200 consecutive loot boxes without obtaining a Legendary champion, the probability increases by 5 percentage points. For a Legendary result, the new probability increased to 5.5% if the player did not obtain one after opening 200 loot boxes. This means that a player with 200 consecutive openings without a Legendary reward would need to open a further 19 loot boxes to reach the statistical average.

The only sure and effective way of obtaining enough Void shards is to purchase them through the in-game store in exchange for real money. The game also places limits on how many of these loot boxes can be bought per month. One “Void shard” is priced at around EUR 25. **The player may purchase a total of 55 “Void shard” loot boxes per month, for a running total of around EUR 1 375.**

To reach the statistical average, the player would have to open 220 loot boxes. This incorporates the “Mercy” mechanism, which increases the probability after opening 200 loot boxes without obtaining a Legendary reward. **To purchase 220 Void shards, the player must pay around EUR 5 500, and the process would take roughly five months.**

3.2.5 Manipulative techniques

With such low probability of receiving premium champions, one might think it trivial for consumers to decide not to purchase loot boxes when playing Raid: Shadow Legends. However, there are several mechanisms at play designed to incentivize spending despite what might seem rational.

One example of such mechanisms is the in-game “messaging” system. Raid: Shadow Legends has a global messaging system where players are constantly updated whenever another player obtains a rare champion from a loot box.





Figure 26: In-game messages are displayed whenever another player obtains a high-tier champion. (Illustration: Screenshot from Raid: Shadow Legends)

In the above screenshot, it is shown that another player just obtained a “Legendary Void 5-star” champion from a shard. **This reinforces the player’s belief that they might be similarly lucky, through what is known as the “bandwagon effect”.** As the player proceeds through the game, they are constantly bombarded with such messages of other players receiving rare rewards.

Given the number of players and the number of loot boxes opened each day, even events with small chances of happening will conform to the average probability given enough attempts. In Raid: Shadow Legends, **those rare events are used as marketing tools and reinforce the already strong confirmation bias that is inherent to human behavior.**

While playing Raid: Shadow Legends, players are also continuously drip-fed smaller rewards for, for example, logging in to the game daily or for playing for a set number of minutes. These rewards are comparatively tiny compared to the advertised purchasable packages but provide an incentive to keep playing.



Figure 27: In-game advertising for playtime rewards. (Illustration: Screenshot from Raid: Shadow Legends)



To grow the player base, the game also rewards players with free shards for referring friends to join the game. This is a form of “growth hacking” that may serve to inflate the number of downloads of the game, but it also enlists players as advertisers on behalf of the game.



Figure 28: In-game advertising encouraging players to invite others to receive free shards.

3.2.6 Summary

The game Raid: Shadow Legends is built around opaque loot box mechanics with miniscule odds that demand an in-depth knowledge of probabilities and statistics to properly understand. To reach the higher levels of the game, both in player-versus-player (PvP) mode and in the campaign, players must buy large amounts of loot boxes.

The marketing in Raid is aggressive, and several elements are designed to build on already prevalent cognitive biases, including confirmation bias, bandwagon effects, and more.

Raid: Shadow Legends is basically a money-making machine for the video game company Plarium, disguised as a functioning game. Stripped of the loot box mechanism, the gameplay that remains wins no prizes. It can be questioned whether games such as Raid: Shadow Legends should be allowed to market themselves as “free”, since the games are designed with major roadblocks which players must pay to circumvent. The actual “free to play” part of Raid amounts to little more than a platform for in-game purchases.



3.3 The problem of probability disclosures

Both FIFA 22 and Raid: Shadow Legends provide a certain amount of transparency by allowing players to see the probabilities of obtaining certain types of rewards from loot boxes. However, as documented above, this information is at best confusing, and at worst deceptively misleading.

The form of probability disclosure used by both games is problematic because the average consumer will not understand the inner workings of the stated probabilities. When several packs are opened, the probability is not cumulative, meaning that each pack opening is a separate event. This may be counter-intuitive to many players who, due to the gambler's fallacy, may be misled into believing that the probabilities add up as more packs are opened.

For example, players who are not savvy in statistical probabilities may be led to believe that a 1.3% chance of receiving a Team of the Year card from a FIFA loot box means that they will get lucky at least once if they open 100 packs. In fact, to archive near-statistical certainty the player would need to open hundreds more.

When the probability is not evenly distributed between the possible rewards, the actual chance of receiving an obtainable reward from any given loot box is effectively impossible to know or understand.

As an analogy, consider a traditional lottery. If the seller provided information that there was a 5% chance to win a sum of money between EUR 10 and EUR 100 000, consumers may be led to believe that the chance to win EUR 100 000 was within reach if they purchased more than 20 tickets. However, if the actual probability of winning EUR 100 000 was less than 0.0001%, this would likely be considered deceptive or misleading advertising.

3.4 Summary of observed problematic practices in the examples

As demonstrated in section 4, both FIFA 22 and Raid: Shadow Legends employ several problematic mechanisms tied to selling in-game loot boxes.

Impossible probabilities

Both games provide a system where players can see the probabilities of obtaining certain content from the various loot boxes. However, closer inspection shows that these probabilities are deceptive due to how rewards are



structured and categorized within the games. Through prominent in-game advertising, players are led to believe that the probability of receiving something worthwhile is within the realms of possibility, but the actual statistics behind it show that these possibilities are miniscule. Even with expert knowledge of statistical probabilities, it is impossible to know the actual inner workings of the algorithms doling out rewards.

In-game currencies

In both FIFA 22 and Raid: Shadow Legends, loot boxes can be purchased using various in-game currencies. Since these currencies cannot be refunded or converted into real money, they add an additional transaction layer that obscures the cost of the loot boxes. Non-linear conversion rates and bulk orders further contribute to the obfuscation.

Deceptive design

There is a continuous drip of lower-value loot boxes in both games, which gives players a taste of possible rewards. Opening a loot box is designed as a small victory, with ample use of triumphant music, bright colors, and satisfying animations, all of which are designed to trigger dopamine release and a feeling of achievement.

To progress through the games, or to stay competitive against opponents, players are continuously nudged and lured into purchasing loot boxes. In FIFA 22, the continuous introduction of promo events ensures that players will never have their “ultimate team” and will often be matched against other players who have obtained rare cards. Limited offers and cards are the lifeblood of the game, which means that players are constantly in fear of missing out.

In Raid: Shadow Legends, in-game progress grinds to a halt at a certain point unless the player shells out large amounts of money for loot boxes in the hope of obtaining better champions. Furthermore, a constant stream of in-game messages demonstrates how other players are receiving high-tier rewards, and the player must click through several pages of ads for in-game purchases every time they open the game.

All these practices add up to an experience that has been carefully designed to maximize spending. In the case of Raid: Shadow Legends, the entire game can be described as a fancy Skinner box; take away the loot boxes and there is not much left. FIFA 22 contains an actual game where players can play virtual football, but that game comes at a retail price of EUR 60 before in-game purchases are added into the mix.



It appears obvious that the design and mechanisms driving in-game purchases in these games are predatory, manipulative, and exceedingly aggressive, targeting consumer vulnerabilities at every opportunity. The fact that the games are targeted at minors – 3+ in the case of FIFA 22 and 12+ in the case of Raid: Shadow legends – exacerbates the problem. Even though the cascade of deceptive designs and predatory practices in both games are exploitative when targeting adults, minors have fewer natural defenses against these tricks and warrant strong protections – something these games fail to provide.



4 Loot boxes and the law

Although the market for loot boxes is enormous and is projected to generate USD 20.3 billion by 2025⁷⁸, regulatory scrutiny has been slow and fragmented. Below, we outline some possible avenues for regulatory action, both within existing European law and in forthcoming regulation.

Although this report does not contain a detailed legal assessment of loot boxes, we will point to possible directions within the existing and upcoming European legal framework.

4.1 Gambling legislation

To date, most regulatory initiatives to curb the harmful effects of loot boxes have focused on whether they should be regulated as gambling, citing the gambling-like mechanisms involved. There have been legislative initiatives in the United States to ban loot boxes, focused on shielding children from gambling-like mechanisms.⁷⁹ In the UK, discussions are also ongoing about whether loot boxes should be regulated as gambling.⁸⁰

In Europe, gambling is regulated at national level, resulting in a fragmented regulatory environment. While some countries, such as Belgium⁸¹ and the Netherlands, have decided that loot boxes constitute gambling and have regulated them accordingly, others have not.

In several jurisdictions, this stems from the fact that most loot box mechanisms do not award players with content that has monetary value, since it cannot be sold for or converted into real money.⁸²

⁷⁸ “Video Game Loot Boxes To Generate Over \$20 Billion In Revenue By 2025, But Tightening Legislation Will Slow Growth”, Juniper Research [https://www.juniperresearch.com/press/video-game-loot-boxes-to-generate-over-\\$20-billion](https://www.juniperresearch.com/press/video-game-loot-boxes-to-generate-over-$20-billion)

⁷⁹ “U.S. Senator Introduces Bill To Ban Loot Boxes And Pay-To-Win Microtransactions”, Jason Schreier <https://kotaku.com/u-s-senator-introduces-bill-to-ban-loot-boxes-and-pay-1834612226>

⁸⁰ “Loot boxes in video games”, John Woodhouse <https://commonslibrary.parliament.uk/research-briefings/cbp-8498/>

⁸¹ “EA buckles in Belgium, stops selling FIFA Points following loot box gambling pressure”, Wesley Yin-Poole <https://www.eurogamer.net/articles/2019-01-29-ea-buckles-in-belgium-stops-selling-fifa-points-following-loot-box-gambling-pressure>

⁸² The nuances of national differences in gambling legislation across European countries is covered in “Loot boxes in online games and their effect on consumers, in particular young consumers”, Annette Cerulli-Harms et al., pages 34–36 [https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652727/IPOL_STU\(2020\)652727_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652727/IPOL_STU(2020)652727_EN.pdf)



In 2019, the District Court of The Hague ruled in favor of the Dutch Gambling Regulator (KSA), stating that the regulator correctly identified loot boxes as "games of chance".

In a surprising judgment, however, Dutch highest administrative court overturned the decision of the District Court and ruled that the use of loot boxes in FIFA games cannot be considered a game of chance.⁸³

According to this decision, it seems that loot boxes are not subject to Dutch gambling laws if the game is competitive, loot boxes can be obtained by playing the game, are opened in the digital environment. Lastly, most of loot boxes must be earned by playing the game.⁸⁴

Due to the cross-border nature of the internet and digital content, it is arguable whether a fragmented, nationally regulated market is the best way forward for consumers. Players who purchase loot boxes play against opponents in different countries, and any transactions within or outside of the game (for example through the FUT transfer market in FIFA) happens across borders. Furthermore, gambling laws often mandate an 18-year age limit, which is exceedingly difficult to enforce when most video games are sold through digital storefronts.

4.2 The current consumer protection framework

The coverage of consumer protection is comprehensive and covers the video game market in general. However, when it comes to matters of digital services, deceptive design and algorithmic decision-making the current framework is not wholly sufficient to ensure consumer protection.

In this part of the report, we explore the current consumer protection framework from a European and American perspective.

4.2.1 The European consumer protection

In the EU, legislation is passed down from the Commission and Parliament and is transposed into the legal systems of its member states. The way the legislation is transposed varies somewhat, but the central principles of consumer protection remain the same.

⁸³ <https://www.lexology.com/library/detail.aspx?g=b7336333-71ac-47d4-b33d-77f5bf54ebfe>

⁸⁴ René Otto breaks down the Dutch State Council's decision that FIFA card packs should not be regulated under gambling laws (https://www.gamesindustry.biz/articles/2022-04-25-dutch-gambling-authority-vs-electronic-arts-the-end-of-loot-boxes-as-legislative-black-boxes?utm_source=newsletter&utm_medium=email&utm_campaign=daily&mc_cid=46e037e28b&mc_eid=ab6e3c45ec)



The Unfair Contract Terms Directive (UCTD) addresses the imbalances in the rights and obligations of consumers and those of sellers when a contract between two parties is concluded. It is an important piece of EU legislation to protect consumers. The directive lists examples of terms that may be regarded as unfair, and which are therefore not binding for consumers. However, as developed above⁸⁵, examples exist underlining some video game producers' practices to grant themselves unilateral powers to modify or cancel loot boxes features from their video games at any time, without valid grounds to do so, and without allowing consumers to be reimbursed of the paid loot boxes. Such clauses are likely to be in breach of the UCTD.

The Unfair Commercial Practices Directive (UCPD) constitutes consumer protection in marketing and other commercial practices in the EU. This directive covers all forms of marketing and other commercial practices when applied to consumers. Unfair commercial practices are prohibited under European law and are enforced by EU member states.

The UCPD targets commercial practices which, contrary to professional diligence, distort or are likely to distort the economic behavior regarding the product of an average consumer, or the average consumer to whom it is addressed, including vulnerable consumers (Article 5). Specific prohibition applies also to practices which are misleading (Articles 6 and 7) and aggressive (Articles 8 and 9).

In the case of loot boxes, the combined marketing pressure, use of behavioral biases or manipulative elements relating to, e.g. the timing of offers within the gameplay, (e.g. offering micro-transactions during critical moments in the game), pervasive nagging or the use of visual and acoustic effects to put undue pressure on the player that consumers are experiencing when interacting with loot boxes, as demonstrated in section 4 of this report, may well be a case of unfair commercial practice prohibited under the UCPD. The existence of a 'likely' impairment of an average consumer's freedom of choice or conduct is sufficient to meet the criteria to qualify as an aggressive practice under Articles 8 and 9 UCPD.⁸⁶

When children or other vulnerable consumers are targeted, the unfairness threshold is lowered. Even though many games with loot boxes are not

⁸⁵ See section 3.6 of the report.

⁸⁶ Commission notice - Commission Notice – Guidance on the interpretation and application of Directive 2005/29/EC of the European Parliament and of the Council concerning unfair business-to-consumer commercial practices in the internal market, C/2021/9320 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021XC1229%2805%29&qid=1640961745514>. See also Helberger, Micklitz et al. (2021) [EU Consumer Protection 2.0 - Structural asymmetries in digital consumer markets](#), p. 70 et seq. ('UCPD Guidance') sec. 4.2.9.



specifically targeted at children, they are still exposed to the marketing within the games.

Children have a reduced ability to exert self-control and have more difficulty understanding valuation and probabilities in games.⁸⁷ This makes children more vulnerable to unfair game design than adults, and to marketing that obscures information or manipulates the player into making a purchasing decision.

The Consumer Rights Directive (CRD) gives consumers the same strong rights across the EU. For example, it aligns and harmonizes national consumer rules regarding the information to be provided to consumers prior to the purchase of goods, services or digital content.

Several practices mentioned in this report may contravene to the pre-contractual information requirements for distance contracts. For example, the probabilities to win loot boxes which, as demonstrated above clearly lack of transparency for consumers and contain misleading and unclear information about the real consumers chances. Such practices are, in our view, likely to influence consumers decision to buy or not a loot box may amount to a breach of pre-contractual information requirements (Article 6(1) CRD) but also of material information under the Article 7(4) UCPD. However, it needs to be underlined that the European Commission in its recently updated UCPD guidelines clarifies that⁸⁸ *"The sale of loot boxes in games must comply with the information obligations under the CRD and UCPD concerning the price and main characteristics of the product."*

4.2.2 Consumer protection in the United States

In the United States there are a variety of local, state and federal consumer protection laws. In this case, the Federal Trade Commission could take action under Section 5 of the Federal Trade Commission Act, which prohibits unfair and deceptive practices by businesses. All 50 states have similar laws, referred to as UDAP statutes, which state attorneys general enforce.

UDAP statutes protect consumers from practices such as misleading advertising, misrepresentations, and omission of key information that may impact a consumer's decision-making process.

To meet the threshold for unfairness under Section 5, a practice must result in consumer injury that is reasonably unavoidable, and the net effects of which are not outweighed by benefits to other consumers or competition. A practice

⁸⁷ "Loot boxes in online games and their effect on consumers, in particular young consumers", Annette Cerulli-Harms et al., pages 21–30
[https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652727/IPOL_STU\(2020\)652727_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652727/IPOL_STU(2020)652727_EN.pdf)

⁸⁸ UCPD Guidance, sec. 4.2.9.



may be considered deceptive if it is likely to mislead consumers and affect their decisions to purchase or use a product.

We believe that the practices described in this report may violate Section 5 of the FTC Act as well as state UDAP statutes.

Unfairness: Lootboxes could potentially trigger unfairness enforcement actions as they can result in significant monetary injury to high-spending players (“whales”), or a smaller amount of injury across a large number of players. The extent to which players must purchase lootboxes to be able to play a game competitively is withheld from them when they are initially deciding whether to download a game, and once they do, they are subjected to undue influence and aggressive tactics to increase the likelihood they will buy lootboxes.

Deceptiveness: Lootboxes could potentially trigger deceptiveness enforcement actions. Games employing lootboxes rely heavily on the exploitation of cognitive biases, misleading consumers about the probability of success when purchasing a lootbox. “Freemium” games also use misleading pricing schemes, obscuring the true costs of downloading a game until the player is hooked and more willing to pay for in-game content. As in Europe, the vulnerability of consumers may also be taken into account; in this case, the fact that children make up such a large part of the audience for games featuring lootboxes.

4.3 Upcoming regulatory actions in the EU

4.3.1 The EU Fitness check: a timely opportunity to address the challenges posed by loot boxes

The European Commission has announced in its 2020⁸⁹ Consumer Agenda that it will analyze whether additional action is needed to ensure an equal level of fairness online and offline.

In March 2022, it also announced that a “fitness check” (evaluation)⁹⁰ will be conducted to determine if:

- the Unfair Commercial Practices Directive 2005/29/EC
- the Consumer Rights Directive 2011/83/EU

⁸⁹ Communication from the Commission to the European Parliament and the Council - New Consumer Agenda Strengthening consumer resilience for sustainable recovery - COM/2020/696 final; <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0696>

⁹⁰ Digital fairness – fitness check on EU consumer law”, European Commission; https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13413-Digital-fairness-fitness-check-on-EU-consumer-law_en



- the Unfair Contract Terms Directive 93/13/EEC, still ensure a high level of protection in the digital environment:

This evaluation will lead to the preparation of an Impact Assessment and may be followed by a legislative proposal with regulatory changes to the consumer law *acquis* in 2024. The evaluation will include the analysis of several key concepts particularly relevant for the protection of consumer in the video games area, such as the concept of vulnerability, deceptive design, price personalization.

It will be an opportunity for the Commission to analyze and propose solutions to the problems described in this report, faced by thousands of consumers (including vulnerable ones) in the EU, when playing video games.

For instance, unfair commercial practices and deceptive design in the video game market is an ideal example in the upcoming evaluation. The video game market has evolved without close scrutiny from regulators.

The upcoming evaluation should include how the video games exploit consumers into spending money for uncertain rewards.

The upcoming European AI Act⁹¹, which is meant to regulate the use of artificial intelligence, could also play a role in protecting consumers in the video games market. Probabilities and outcomes of loot boxes are predominately decided by opaque algorithms that dynamically alter probabilities without the consumer's knowledge.

These systems can be used to trigger deep-seated responses, preying on innate consumer vulnerabilities. This may lead to both financial and psychological harm. The AI Act should address how algorithms are used in video games to affect consumer behaviors in potentially harmful ways and should introduce restrictions on some of these practices.

Legislators should assess current consumer laws in the light of digital business models and marketplaces and consider whether changes need to be made to ensure robust consumer protection in the context of video games and beyond.⁹² Children merit special protection, and regulators may want to go

⁹¹ <https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence>

⁹² For a comprehensive overview of dark patterns and consumer law, including concrete suggestions for EU policymakers, see BEUC, "Dark Patterns and the EU Consumer Law Acquis - Recommendations for better enforcement and reform" https://www.beuc.eu/publications/beuc-x-2022-013_dark_patterns_paper.pdf



further in restricting the use of deceptive design in video games targeted at children.⁹³

To secure sufficient consumer protection, it is paramount that regulators carefully assess questionable practices to ensure targeted remedies. Forthcoming regulation should consider the particularly problematic aspects of loot boxes as they relate to financial harm to consumers.

As with any other regulatory schemes, enforcement is crucial to enact significant change. With that in mind, we recommend that relevant authorities across Europe conduct “sweeps”⁹⁴ of the practices of major video game companies, particularly concerning the sale of loot boxes, how they are marketed, and how consumers can exercise their rights. If necessary, we recommend the Consumer protection authorities (CPC-Authorities) to launch coordinated enforcement actions in case of reasonable suspicion that widespread violation of EU consumer law is taking place, to ensure that the rights of European consumers are guaranteed in the video game sector.

In addition to regulatory intervention and enforcement of consumer law, industry actors should ensure that they do not design or employ predatory mechanisms in their products and services. Codes of conduct such as *Age Appropriate Design Code* from the UK Information Commissioner’s Office⁹⁵ and *Guidelines on the protection of the online consumer* by the Netherlands Authority for Consumers and Markets⁹⁶ can serve as starting points, although industry specific codes of conduct may be needed. However, due to the clear financial incentives at play, voluntary codes or guidelines will not be sufficient to solve the problematic aspects of loot boxes.

⁹³ See for example “Response to Request for Public Comment on the Federal Trade Commission’s Request for Comments Regarding Topics to be Discussed at Dark Patterns Workshop”, Campaign for a Commercial-Free Childhood, The Center for Digital Democracy https://www.democraticmedia.org/sites/default/files/field/public-files/2021/ccfc-cdd_dark_patterns_comments_05-28-2021.pdf

⁹⁴ Article 3(16) of the [Regulation \(EU\) 2017/2394](#) on cooperation between national authorities responsible for the enforcement of consumer protection laws, «Sweep» means concerted investigations of consumer markets through simultaneous coordinated control actions to check compliance with, or to detect infringements of, Union laws that protect consumers’ interests.

⁹⁵ “Age appropriate design: a code of practice for online services”, Information Commissioner’s Office <https://ico.org.uk/for-organisations/guide-to-data-protection/ico-codes-of-practice/age-appropriate-design-a-code-of-practice-for-online-services/>

⁹⁶ “Guidelines on the protection of the online consumer”, Netherlands Authority for Consumers and Markets <https://www.acm.nl/en/publications/guidelines-protection-online-consumer>





5 Conclusion

Despite being a major industry, the video game sector has largely evaded regulatory scrutiny. This might be because of the prevailing business models being technically complex or somewhat novel or because video games are still considered a niche entertainment market by many authorities. In any case, the sheer size of the market and the number of affected consumers make it clear that regulatory investigations and possible interventions should be high on the agenda for authorities at national level and in the EU.

As the issues surrounding loot boxes are multifaceted and cross-sectoral, it is crucial that experts from different regulatory authorities cooperate to exchange information and resources when looking into the video game industry. Relevant authorities include those responsible for sectors such as gambling, consumer rights and competition, as well as audio-visual regulators.

Although there have been several initiatives to self-regulate or to increase transparency in loot box mechanisms, these have proven less than satisfactory. The combination of deceptive design, randomized rewards, virtual currencies, and exploitation of cognitive biases is too powerful to enable consumer education or transparency-increasing measures to ameliorate the harm caused by these practices.

Based on these cases and a broader overview of the industry, we present several proposals for industry, regulators, and policymakers:

7. **Video game companies must be banned from using deceptive design to exploit consumers.** When consumers engage in video games, companies must ensure that their decisions are not impacted to the detriment of the consumer, by the design and operation of game.
8. **All In-game purchases should always be denominated in real-world currency.** At the very least, real-world currency values should be provided alongside virtual currencies, where virtual currencies are used.
9. **Protection of minors:**
 - a. Games likely to be accessed by minors **must not offer loot boxes**, or other randomized content in exchange for real money.
 - b. Games likely to be accessed by minors **should not contain "pay-to-win" mechanisms.**
10. **More transparency:**



- a. Researchers and regulators should have **access to the algorithms and datasets** that is are involved in the loot boxes to conduct independent research in the public interest.
- b. In cases where **algorithmic decision-making** is employed to influence consumer behaviour, the **consumer must be explicitly informed**. The disclosure must include information in plain language about what algorithms are trained to achieve and which factors are used. In addition, the consumer should have the **option to use the game without algorithmically driven decision-making that aims to influence consumer behaviour**.

11. Better and more enforcement

- a. Consumer enforcement authorities must have the necessary resources and expertise to take enforcement actions, thus, protecting consumers in digital markets, including against video game companies.
- b. Consumer protection authorities should ensure that existing and future consumer rights are enforced in the gaming industry as well.⁹⁷

12. If other remedies do not alleviate the problems, **consider a ban of paid loot boxes**.

Although the video games industry is amongst the largest entertainment industries, it has often eluded serious regulatory oversight. Therefore, we call for stronger regulatory action against video game companies that fail to respect consumer rights and that prey on consumer vulnerabilities.

⁹⁷ Provisions against aggressive and manipulative choice distortion practises (the Digital Services Act and, the Consumer Rights Directive, the Unfair Contract Terms Directive, the Unfair Commercial Practises Directive, the Digital Content Directive among others)



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Attachment 2

CPRC Report

Duped by Design – Manipulative online design: Dark patterns in Australia

DUPED BY DESIGN

Manipulative online design: Dark patterns in Australia



Consumer
Policy Research
Centre

The Consumer Policy Research Centre (CPRC) is an independent, non-profit, consumer think-tank established by the Victorian Government in 2016.

CPRC aims to create fairer, safer and inclusive markets by undertaking research and working with leading regulators, policymakers, businesses, academics and community advocates.

Acknowledgements

Data collection was conducted by CPRC, using Ipsos' Digital Platform. Terms and Conditions of Ipsos' Digital Platform can be found here: www.ipsos.digital/terms-and-conditions

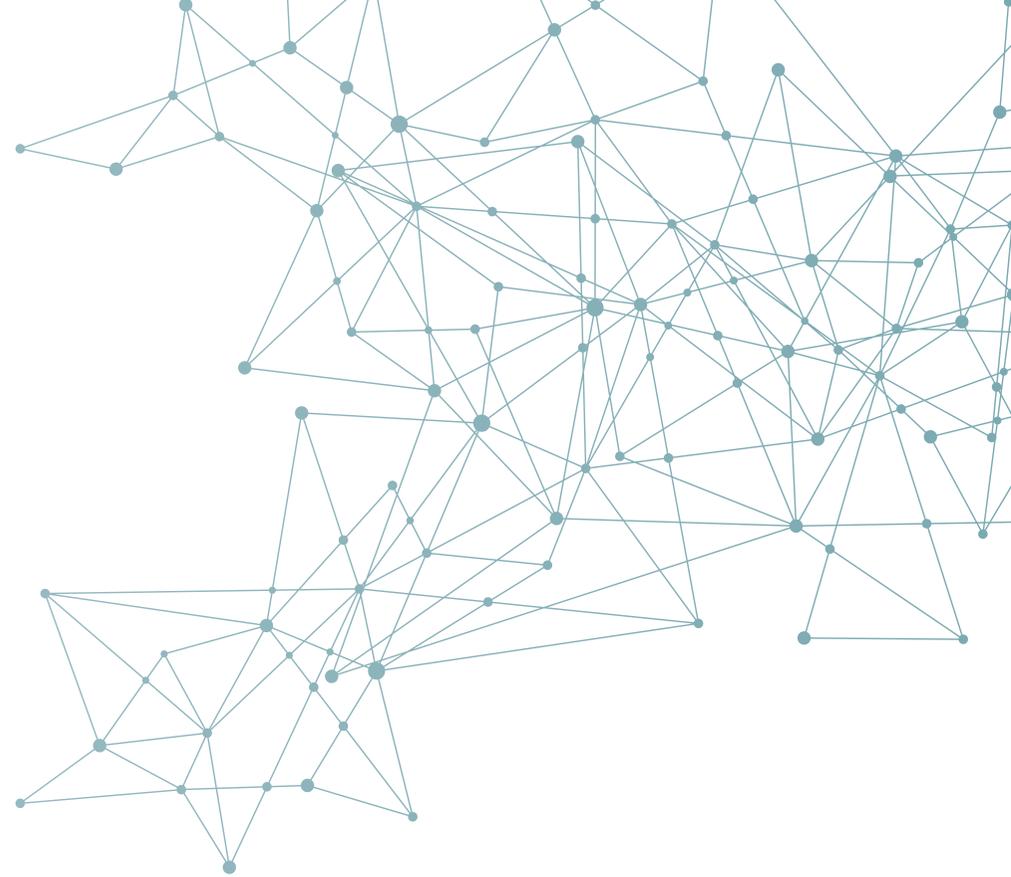
Statement of Recognition

CPRC acknowledges the Traditional Custodians of the lands and waters throughout Australia. We pay our respect to Elders, past, present and emerging, acknowledging their continuing relationship to land and the ongoing living cultures of Aboriginal and Torres Strait Islander Peoples across Australia.

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Introduction

Whole industries now exist to “hack” marketing funnels. Teams of experts experiment to get that extra person to subscribe or to add one more thing to the cart. We need to step back and ask, at what point is this push in web design misleading or manipulative to the user?

This report looks at what current trends in web and app design mean for consumers. We have found that Australian consumers are having their choices and experience manipulated through online designs known as dark patterns.

Dark patterns are design features and functionalities built into the user interface of websites and apps that purely exist to influence consumer behaviour – often not in the consumer’s best interest.

This report looks closely at ten dark patterns common in Australia today, ranging from those that are ubiquitous and frustrating for consumers to those that are possibly misleading and deceptive and can lead to significant consumer harm.

This report will:

- provide an overview of the ten dark patterns that are prevalent for Australian consumers
- present the Australian consumer experience of dark patterns
- outline what next steps could look like, including actions businesses, regulators and government can take in addressing and mitigating consumer harm.

Some of the deceptive designs we found are so misleading that CPRC will be referring them to the relevant regulator for

investigation for breaches of the Australian Consumer Law. The report includes examples of highly misleading designs such as extra services being added automatically into the cart (e.g. service plans for whitegoods) and convoluted app navigation that make the unsubscribing process long and confusing for consumers.

These deceptive techniques deteriorate a consumer’s experience in the digital economy. Our survey found that 83% of Australians experienced one or more negative consequences, like financial harm or a feeling of being manipulated, as a result of a website or app using design features aimed at influencing their behaviour. Dark patterns have led one in four Australians to share more personal information than they wanted to and one in five to spend more than they intended.

For many of the dark patterns covered in this report, Australia’s consumer protection laws do not go far enough to protect consumers. The onus must be put back on businesses to mitigate harm by presenting choices that are meaningful for and in the interest of consumers.

Jurisdictions worldwide are taking action on dark patterns. The introduction of the General Data Protection Regulation (GDPR) in 2018, while not perfect, provided European consumers with privacy protections far superior to those available for Australian consumers. Also, the European Union recently updated its directive on unfair commercial practices to include obligations relating to data-driven personalisation and dark patterns. In the United States, the state of California strengthened its Privacy Act by introducing a ban on specific dark patterns.

The Australian Government must fast-track a review of the *Competition and Consumer Act*, including the Australian Consumer Law (ACL) to make sure that consumer problems in the digital era are adequately captured by our laws.

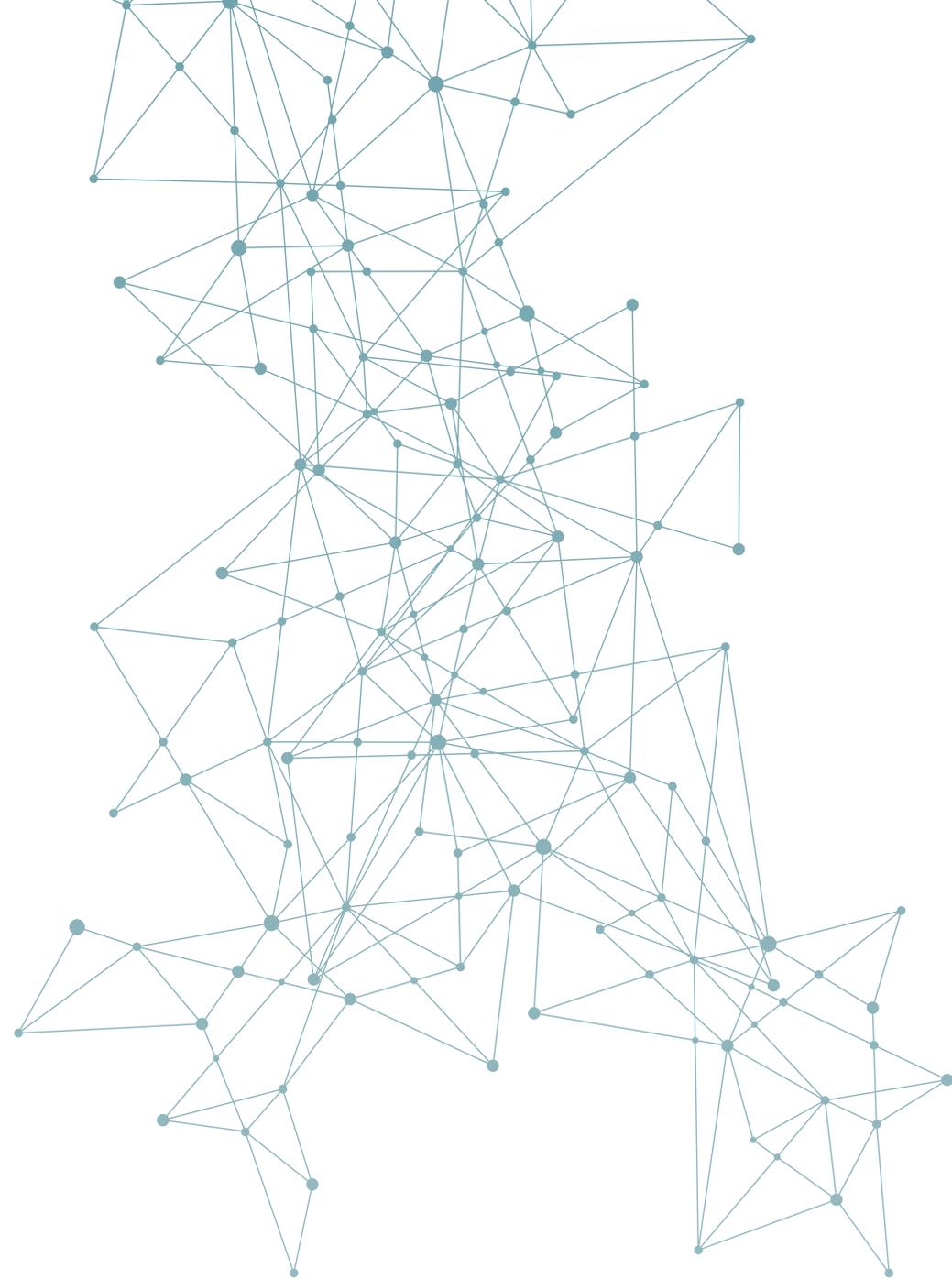
In addition, wider whole of economy reforms are needed to adequately protect consumers including:

- introducing an unfair trading prohibition
- strengthening unfair contract terms provisions
- reforming the Privacy Act to give consumers more control and agency over their data.

Regulators have an opportunity to reimagine their traditional enforcement models and move away from the “whack-a-mole” approach that places the onus on consumers to identify and report harms. Australian regulators need to be well-resourced for proactive surveillance and enforcement initiatives to deal with digital harms that are difficult for an individual consumer to identify.

While law and enforcement catch-up, businesses can make significant changes to their practices right now to ensure their online presence places the needs and experience of consumers above profit margins. Businesses can conduct regular audits of their website design, undertake regular consumer-centric user experience testing to test their designs and pivot towards design choices that enhance the consumer experience instead of deteriorate it. Our survey revealed that 30% of Australians stopped using the website/app (either temporarily or permanently) as a result of dark patterns and one in six Australians felt their trust in the organisation undermined. In the long-term it makes good business sense to give consumers an online experience that is in their best interest.

It will require a collective effort to turn the tide away from a digital economy that preys and profits on people’s vulnerabilities. However, it can be achieved if all involved in the ecosystem play their part in creating a digital economy that is fair, safe and inclusive for Australian consumers.



Methodology

This report outlines key findings from a nationally representative survey of 2,000 Australians, exploring the prevalence and impact of dark patterns in Australia. It draws on consumer research conducted by UK consumer advocacy agency Which?.¹ We thank the Which? Team for their advice and support for this work.

CPRC's survey was conducted between 21 and 27 April 2022. Data collection was conducted by CPRC, using Ipsos' Digital Platform.² To achieve a nationally represented sample, quotas were set on each of the three demographic variables of age group, gender, state/territory.

In addition to the consumer survey, CPRC also conducted a randomised sweep of various websites and apps to identify specific dark patterns which Australian consumers are being exposed to. Various examples have been cited throughout this report. Where the practice is widespread in a sector or is likely built into the user interface of an off-the-shelf e-commerce solution, only de-identified examples are shown. However, this report identifies certain businesses where a:

- dark pattern has been identified as manipulative or deceptive in the consumer survey
- dark pattern was present on the website/app of a large business (i.e. not a small Australian business), and
- business was named by participants in the consumer survey as an entity that embeds dark patterns on its website/app.

Key findings from CPRC's dark pattern research

83%

of Australians have experienced one or more negative consequences as a result of a website or app using design features aimed at influencing their behaviour

58%

of Australians are aware that organisations use specific types of design features to try and influence them to behave in a certain way

18 to 28 years

Younger consumers (aged 18 to 28 years) were more likely to be negatively impacted by dark patterns than any other age group



Younger consumers were **65% more likely** to spend more than they intended to as a result of dark patterns



"Manipulative" or "Deceptive" were in the top three responses to 9 out of the 10 dark patterns tested with Australian consumers



Dark patterns led to 1 in 4 Australians sharing more personal information than they wanted to

30%

of Australians stopped using the website or app (either temporarily or permanently) as a result of dark patterns used by the business

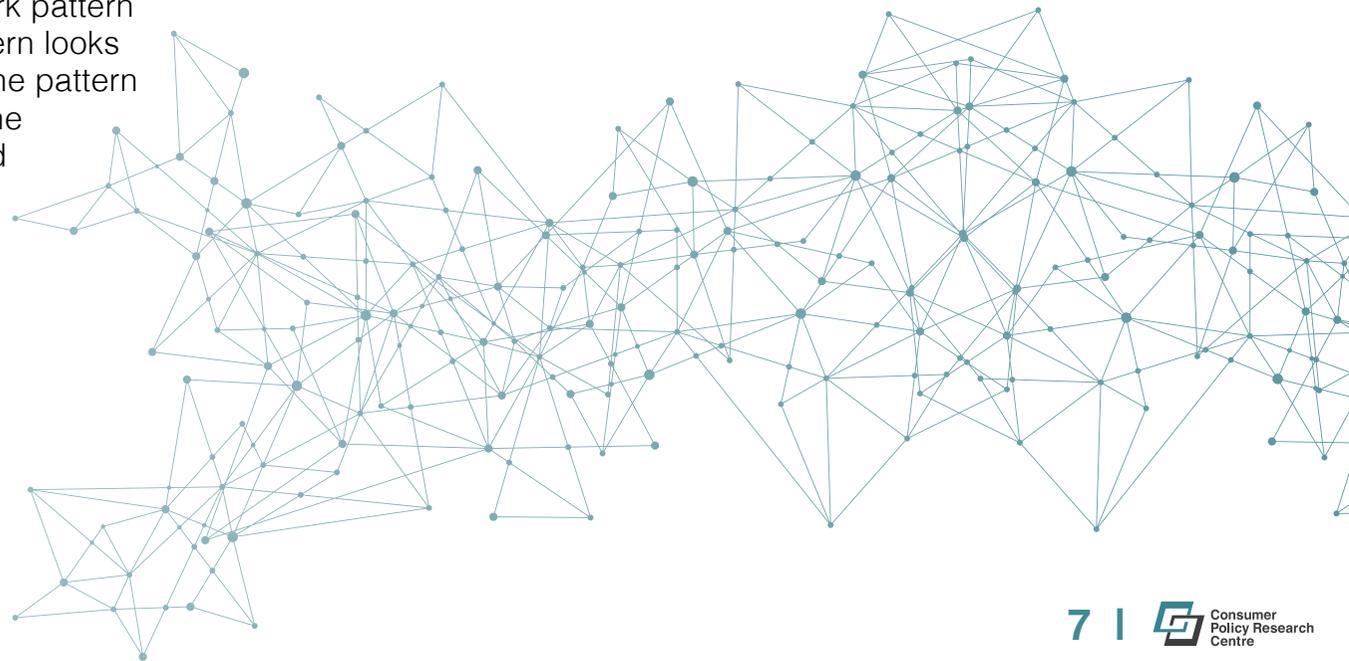
What are dark patterns and where are they?

Up until the last decade, user interface design principles for websites and apps have largely hinged on providing a seamless and user-centric experience to consumers. A key objective of a user interface is to enable people to undertake the task they intended to do as efficiently as possible.³ Dark patterns operate completely contrary to these principles by focusing on designs that deliver profit over user needs. A widely used practice now, dark patterns use a mix of cognitive biases and information asymmetry to influence consumers in making decisions that they otherwise would not have intended to make.⁴ Dark patterns have now become increasingly prevalent across online platforms and shopping websites.⁵

This section first maps the possible spectrum of harm of dark patterns – identifying which patterns may breach current consumer protections and where our protections are not going far enough. The report then explores each dark pattern in detail, providing examples of what the pattern looks like in practice, the consumer experience of the pattern and nature of harms caused to consumers. The extent of harm indicates whether the threshold should be reviewed or reconsidered to provide adequate protection to consumers participating in the digital economy.

Ten dark patterns are explored in this report:

1. Hidden costs
2. Disguised advertisements
3. Trick question
4. Scarcity cues
5. Activity notifications
6. Confirmshaming
7. Hotel California (forced continuity)
8. False hierarchy
9. Redirection or nagging
10. Data grab



Our survey invited consumers to name businesses that they feel use dark patterns on their websites and apps. Over 1,200 eligible responses were received from 1,020 survey participants. Businesses from almost every sector were identified (Figures 1 and 2). The top five categories included:

1. clothing and accessories
2. online marketplaces
3. tech products and services
4. social media
5. department stores.

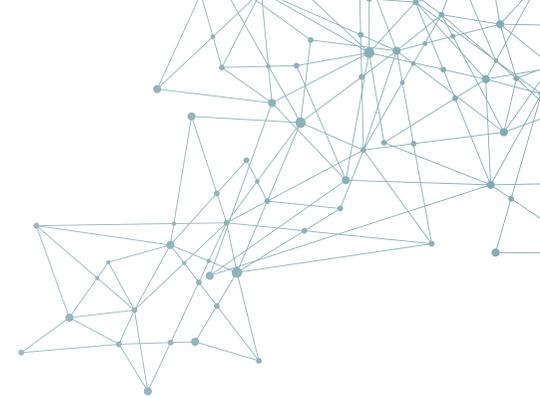


Figure 1: Sectors that utilise dark patterns as identified by business names provided by survey participants.

The top ten businesses that consumers identified as using dark patterns included:

- ebay
- Facebook
- The Iconic
- Catch.com.au
- Shein
- Instagram
- JB Hi-Fi
- Aliexpress
- Kogan.
- Amazon

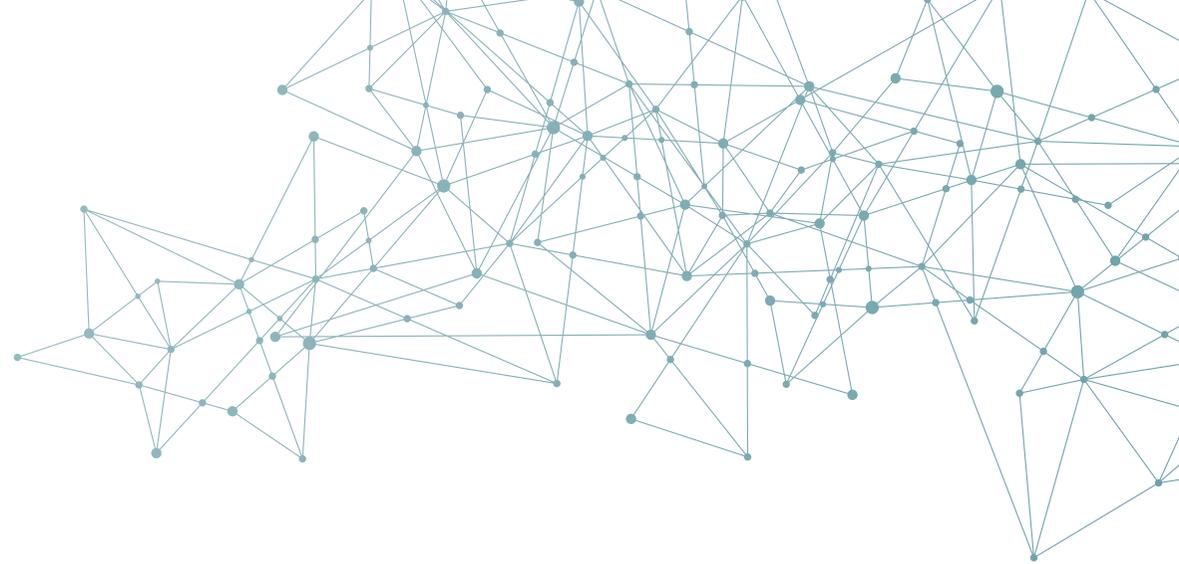


Figure 2: Snapshot of businesses identified by survey participants as using dark patterns on their websites and/or apps.

Spectrum of harm

At first glance, dark patterns can appear as innocuous annoyances that may just be our “way of life” online – a blip that consumers have to navigate as part of participating in the digital economy. However at the other end of the spectrum, dark patterns, can cause direct harm to consumers and breach consumer protections such as:

- misleading or deceptive conduct under the Australian Consumer Law (ACL) which aims to protect consumers from business practices that can create a misleading or deceptive impression about a product or service, including its price, value or quality⁶
- unfair contract terms under the ACL that aims to protect consumers where there is limited opportunity to negotiate with a business and where a term may pose significant imbalance, detriment or there is a lack of transparency⁷
- privacy protections under the Privacy Act 1988 which aims to protect the privacy of personal information of individuals.⁸

Many of the dark patterns we observed in our sweep of Australian websites involved credence claims: statements made by a company that cannot be easily verified by the customer.

Claims like ‘five people are looking at this right now’ may be accurate but, depending on how they are determined, they could also be misleading. This is a category of dark patterns that needs regulatory attention to determine if falsehoods could be driving claims online – consumers cannot check these for themselves. In these cases regulators will need to use proactive surveillance to uncover and test credence claims.

Some dark patterns cause consumer harm but are not well-captured by current legal or regulatory protections. Many of the dark patterns we identified can be considered unfair: they involve a business taking advantage of its relative power to influence consumers. Some of these unfair practices have potential to cause financial or significant consumer harms. For example, “Hotel California” or forced continuity designs likely lead to fewer people cancelling subscription services they wish to end. Many of these practices could be captured by an “unfair practices prohibition” that CPRC and other consumer advocates have argued is a necessary addition to the ACL.⁹

While experiences within some of these categories may not be adequately addressed under the current consumer protection framework, the ubiquitous presence of such dark patterns has the potential to erode consumer trust and impede consumer’s experience on digital platforms, specifically for people who may be experiencing vulnerability.¹⁰ Figure 3 maps the ten dark patterns across a spectrum of harm.

Possible breach of current law:

- misleading and deceptive
- unfair contract term

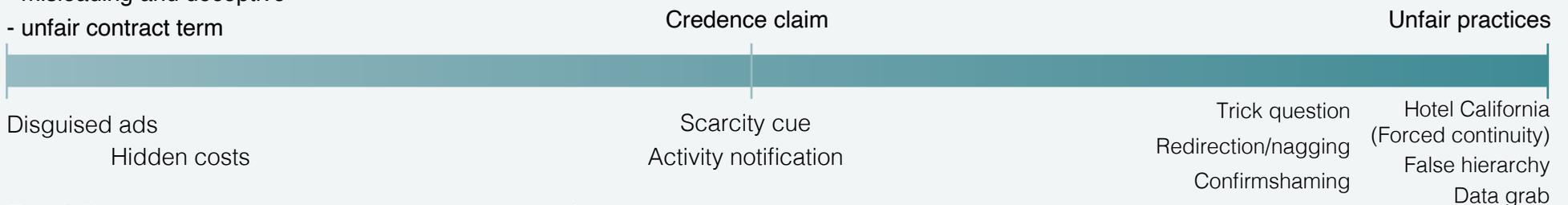


Figure 3: Mapping dark patterns as where they may sit on the spectrum of harm

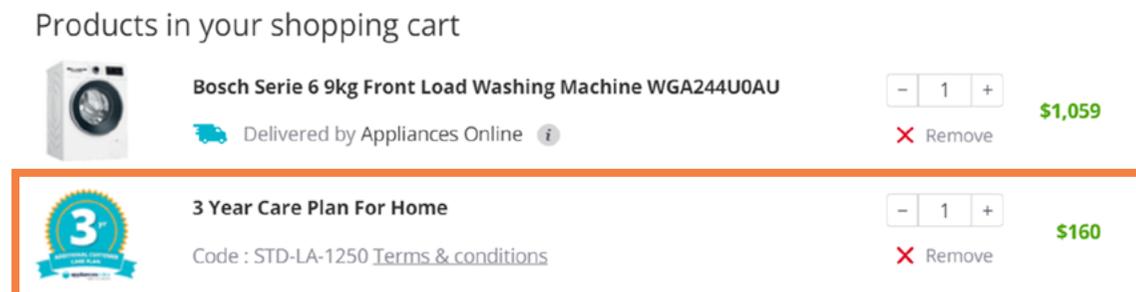
Hidden costs

This occurs when consumers are unaware of additional costs or are forced to pay more for a product or service than they initially perceived. Often this occurs via pre-selected add-ons that are embedded close to or at the final stage payment. This can include shipping and other costs that are not made clear upfront. It can also include pre-selected add-ons such as insurance or service plans that are either automatically added to a shopping cart by default or presented in a way that heavily implies the need to purchase. Consumers have to actively “untick”, “opt-out” or navigate through a variety of options to avoid the extra cost.

This dark pattern is one that is most likely to cause direct financial harm to consumers and result in a company breaching the ACL.

What does it look like?

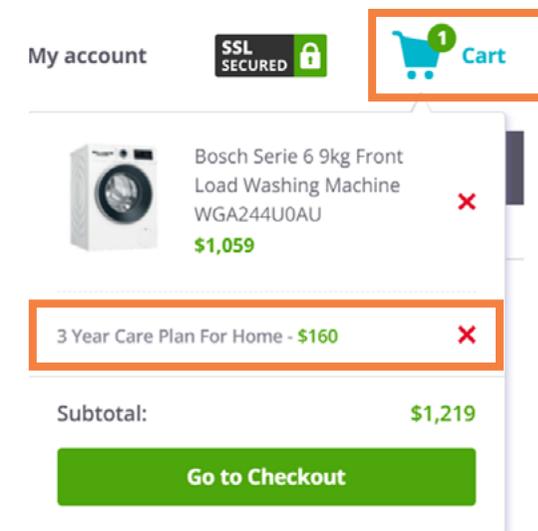
Figure 4 shows an example from Appliances Online, an online home appliances retailer, which automatically adds a three-year care plan into the cart upon adding a product to a shopping cart. To further disguise the inclusion of this additional cost, the number of items displayed next to the cart icon equates only to the number of products added by the customer and the addition of the service plan is only visible once the shopping cart page is open, just prior to a customer making payment. The onus is on its customers to “opt-out” of the plan by actively removing it from their cart prior to finalising payment.



This design choice by Appliances Online strongly implies that a consumer requires a 3-year care plan in order to have a product repaired if something goes wrong. This hidden cost is particularly harmful because it likely adds an unnecessary product for the consumer. The “3-year care plan for home”, like many extended warranties, adds very little extra value for a consumer when compared to the rights all consumers have for free under the consumer guarantees in the ACL.

Not all hidden costs are so blatantly added to an online shopping cart. Some are presented as part of a natural progression to finalising a purchase or are highly encouraged by the business (sometimes via a free trial) and can imply to a consumer that the additional purchase is necessary. Harvey Norman, Good Guys and Kogan use this technique where the product care plan is presented at several points of the checkout process. Again, this design approach risks implying that an extended warranty or product care plan is required when most faults or problems are adequately covered by the consumer guarantees. Kogan also opts-in the customer (via a pre-ticked option) for a free 14-day trial to its membership program which will automatically renew for an ongoing \$59 annual fee after the trial ends (Figure 5).

Figure 4: Three-year care plan is automatically added once a customer adds a home appliance to the shopping cart.



Your Shopping Cart

CHECKOUT →

ITEM	ITEM PRICE	QTY	SUBTOTAL
 Kogan 10kg/6kg Washer Dryer Combo Leaves warehouse in 1-2 business days	\$799 \$789 with FIRST ✓	— 1 +	\$789
Remove			

Kogan FIRST ✓
Earning Kogan Rewards Credit on this order
You will earn 1% of your order in Rewards Credit!

Save an extra \$10 on this order with FIRST ✓
FREE 14 day trial. Ongoing \$59 / year. Cancel anytime.
[Learn more about Kogan First Benefits.](#)

Figure 5: Membership program automatically added as a free 14-day trial during checkout.

The harm caused by hidden costs

Almost nine out of ten survey participants (88%) have encountered additional costs being shown to them only at the end of a purchase process – just prior to payment. Almost two in five Australians (39%) found it deceptive, more than a third (36%) found it annoying and more than one in four Australians (29%) found it manipulative.

When mapping the spectrum of harm, we see the hidden costs dark pattern to potentially be a breach of misleading and deceptive conduct as the false or inaccurate impression a business gives to consumers of what a product or a service offers could also be taken into account in an investigation.¹¹

I have often went ahead and was going to buy something only to final the checkout that the prices have changed and the products are dearer than stated. I usually try to cancel the order but when I can't cancel I just close the page. Then I get lots of emails saying I left something in my cart.

Comment from consumer survey participant

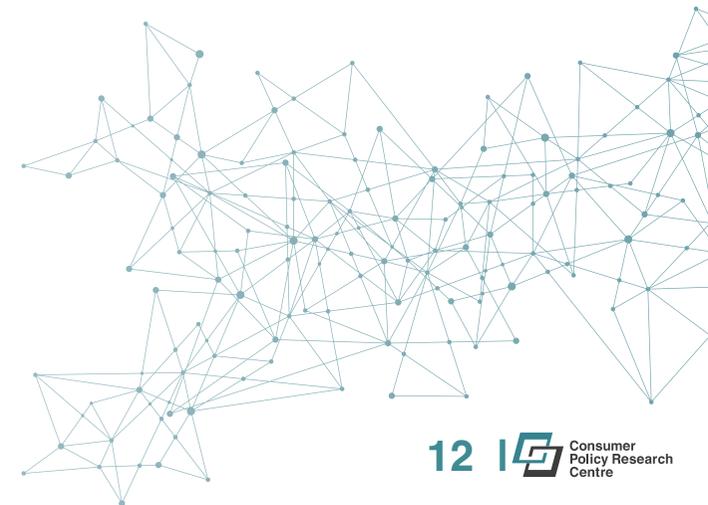


Disguised advertisements

Disguised advertisements are click-bait, designed to make consumers navigate away from the site they originally visited. The format, wording and design of the content often mirrors regular content on the website or app. While some websites or apps include wording such as “Sponsored” or “Advertisement” near the ad, it is often in small, pale-coloured font. Research indicates a sizable proportion of consumers cannot differentiate between adverts and organic search results, despite the presence of these identifiers.¹² While in Australia, traditional media such as radio and television have strict rules for ensuring there is a clear delineation between content and advertisements, in the online world the line between ads and content is blurred.¹³

What does it look like?

Our sweep identified disguised advertisements in mainly news and media websites and search services. For example, on a real estate website, advertisements for house and land packages outside of the search location, appeared seamlessly between actual property listings, both in the app and on the website (Figure 6). The word “Advertisement” appears above the sponsored listing but is extremely small and pale in print in comparison to the rest of the site.



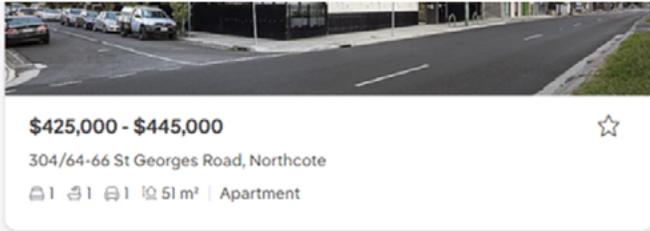
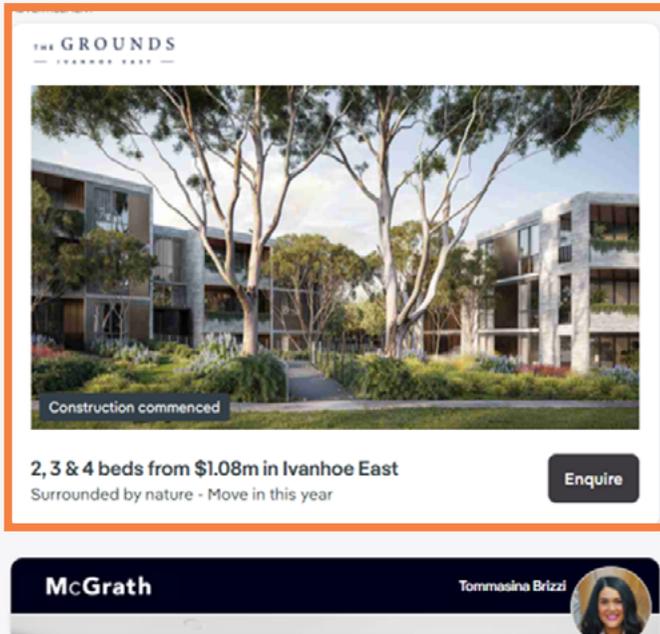


Figure 6: Advertised content appears in the same format and style as other property listings on the app.



The harm caused by disguised advertisements

Our survey revealed that 85% of Australians had recalled seeing online content they found difficult to determine if it was content that was part of the site or an advertisement. Close to half (45%) found it annoying while one in three (33%) found it deceptive. More than one in four (28%) found that advertisements disguised as content made the website or app more confusing. This indicates a further exacerbation of search costs faced by consumers who already indicate these are much higher in an online environment compared to traditional

non-digital settings. While it may not lead to immediate harms such as financial loss or providing more personal information than necessary, it may create additional search costs and more generally can deteriorate a consumer’s online experience. But in some instances, this misleading advert could result in a clear economic harm – a mistaken purchase of a particular product or service. An organisation or business should be required to treat their online presence with the same obligations as their presence across other mediums. Advertising content online should not be treated differently to other mediums.

Trick question

A trick question usually appears as a pop-up or on an online form asking the consumer to confirm a particular choice – which can be more subtle than other dark patterns. The options are not always clear, often due to the use of confusing language. This makes it difficult in instances where consumers are deciding whether to opt-in or opt-out of specific options, settings or services.

What does it look like?

Trick questions are often used when consumers are being asked to consent to data use and sharing practices. The introduction of GDPR in Europe led to a plethora of trick questions when it came to consent, where options provided were both confusing and could be construed as misleading for consumers, especially when used in combination with false hierarchy tactics (e.g. green button to consent to all types of data sharing and red button to adjust settings which often had to be done manually). The new legislation introduced at the beginning of 2022 by the European Union, has helped steer the industry towards better practices. However, as such a law doesn’t exist in Australia, trick questions for data consent continue to appear (sometimes more just as a statement) for Australian consumers (Figure 7).

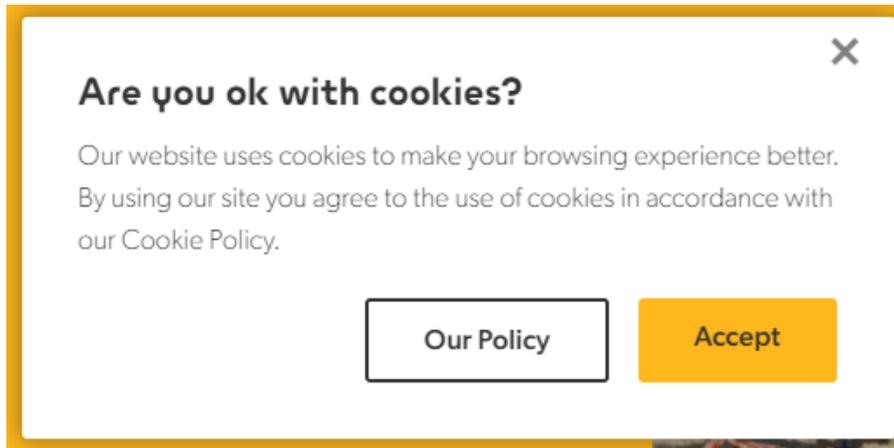


Figure 7: The question in this example is moot. When a user chooses the Our Policy option, it is a lengthy privacy policy and there is no option to adjust or change the settings.

The harm caused by trick questions

Majority of consumers (85%) recalled seeing questions in an online form that use confusing language where it was not clear how to opt in or out of an option/service. Just over one in three Australians (34%) find it annoying, over one in four (26%) find it deceptive and over one in five (22%) consider this manipulative.

While not illegal, it is deeply unfair that websites push consumers to navigate unnecessary choices not in a consumer's best interests – adding significant cognitive burden. Currently, a trick question may be seen as misleading if information that is critical for a consumer's decision-making process is hidden via small print or is withheld entirely. This is often difficult to prove and the harm may only be evident after a specific period of time. An unfair trading prohibition could assist in mitigating this issue via a fairness test that could be incorporated into law. In addition, businesses should have obligations to ensure the choices they present to consumers have been tested for comprehensibility and are in the best interest of the consumer.

“It is annoying when you have to opt out rather than opt in to some of these questions to continue the search...”

Comment from consumer survey participant



Scarcity cues

Instilling a fear of missing out (FOMO) in the minds of consumers, scarcity cues demand attention by creating the notion of limited supply or limited time to act. This has the ability to set urgency to actions that either may not be present nor even necessary. This 'FOMO effect' can lead to consumers purchasing products and services far earlier than they may have intended or spending more than they may have spent had the cues not been present.

What does it look like?

The "FOMO effect" is created in various forms such as through:

- low stock messages (e.g. only four left)
- high-in-demand messages
- countdown timers.

Limited supply in Cairns for your dates:
3 four-star hotels like this are already unavailable on our site

Pacific Hotel Cairns ★★★★★
Cairns · Show on map · 0.7 km from centre
Very good 8.4 (1,522 reviews)
Comfort 8.5
Standard Room
Multiple bed types
8 nights, 2 adults
AUD 1,900
FREE cancellation • No prepayment needed
You can cancel later, so lock in this great price today.
Only 3 rooms left at this price on our site
See availability >

Hurry! 44% of properties on our site are fully booked!
Rooms in Seoul are in high demand on your selected dates. Reserve yours now before prices go up.

We have limited availability at this price - book now!
Well done! You're getting this property's lowest price!

Room price (1 room x 4 nights)	AUD 353.96
Taxes and fees	AUD 35.40
Booking fees	FREE
Final price	AUD 389.36 (₩ 352,000)

We price match. Find it for less, and we'll match it!

You'll pay Ocloud Hotel Gangnam in the property's currency (exchange rates may vary): ₩ 352,000 = AUD 389.36

Our sweep identified several scarcity cues across a range of online businesses. Low stock messages were seen across both low and high value products (Figure 8).

'High-in-demand' messages appeared across a range of sectors. However, in some instances the numbers can appear arbitrary, as regardless of style or colour that a consumer may select of a particular product, the number is often the same (Figure 9).

Your Basket **3** Saved **8**

Reversible Linen Tissue Box Cover, Tissue Box Cover
AU\$59.00
IN 14 OTHER BASKETS
Primary colour: Natural
2 Remove Save for later

Reversible Linen Tissue Box Cover, Tissue Box Cover
AU\$59.00
IN 14 OTHER BASKETS
Primary colour: Sage green
2 Remove Save for later

Figure 9: Two different colours of the same product are selected but the "high-in-demand" messaging notes same number for "in other people's carts".

50% OFF MENSWEAR!*

TALL OVERSIZED OFCL HOODIE
S QTY: 1 **Only 1 left!**
Edit ~~\$60.00~~ **\$30.00**

DISCOUNT \$- 30.00
SUBTOTAL \$30.00
*All taxes are included in product prices

VIEW CART CHECKOUT



Figure 8: Examples of low stock messages from Agoda, Booking.com and Boohoo

Countdown timers were prominently seen on retail, entertainment and travel websites. On some sites it appeared on the header of the site – visible across the website, while on others it appeared at the final stage of payment creating a sense of urgency that may reduce cart abandonment (Figure 10).¹⁴

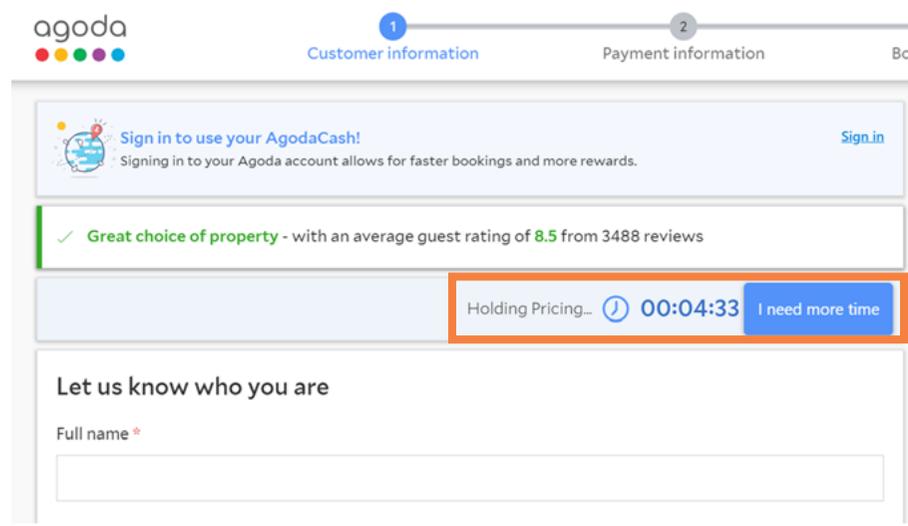


Figure 10: A countdown timer is added to the final stage of payment on the Agoda website and is shown as the length of time that the price will be held. The 'I need more time' button extends the timer by a few more minutes.

In some cases, once the countdown timer ran out, it was only replaced by another timer for another sale (Figure 11) and in others the countdown timer included a millisecond counter as well, again creating a sense that there is little time to wait or waste.

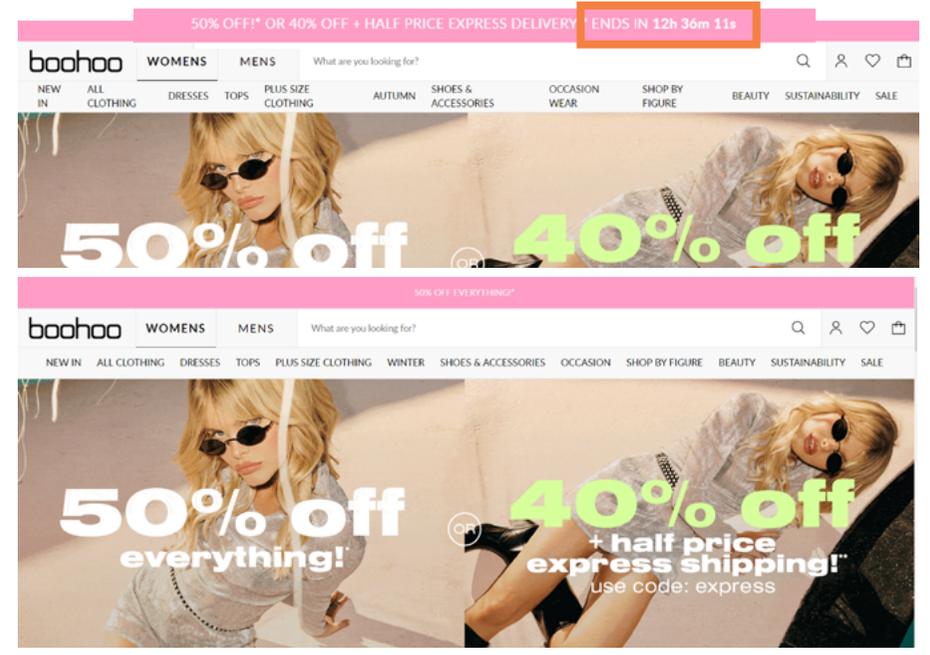


Figure 11: Boohoo's use of countdown timer: The first screenshot was taken on 4 May 2022 indicating that only a little over 12 hours remained to claim 50% off or 40% off with express shipping at half price. On 24 May 2022, the same offer, using the same imagery is shown again but this time without any countdown timer.

Bundling of scarcity cues was also identified on some websites where a combination of two types of scarcity cues were used to create further pressure for consumers to make a decision (Figure 12).

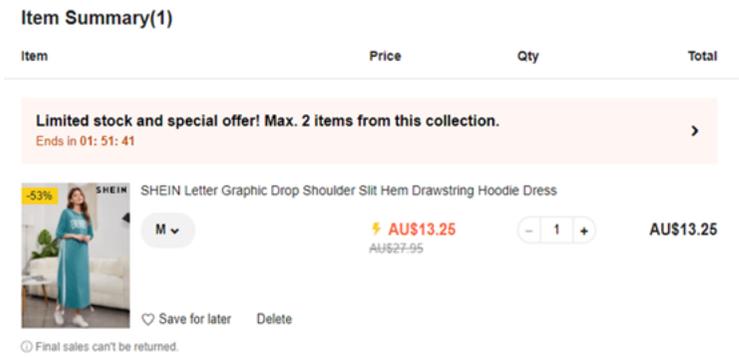


Figure 12: The online clothing retailer, Shein, combines both stock alert and a countdown timer to create a sense of urgency.



The harm caused by scarcity cues

One of the most recalled dark patterns, 89% of Australians confirmed seeing notifications or information that state a product, service or offer is in high demand, low in stock or available for a very limited time. More than one in three Australians (35%) found this practice manipulative, while more than one in four (28%) found it deceptive. One in four (26%) felt they couldn't trust the information.

Trust in information is critical online as it is what consumers rely on to make decisions. In the spectrum of harm, scarcity cues sit squarely in the space of credence claims. The information asymmetry for the consumer is vast. There is no way for a consumer to confirm whether the urgency created is genuine, whether stock levels are indeed accurate or whether other consumers are also considering making the same purchase at any moment. Proactive surveillance by a regulator could help reduce the number of scarcity cues that consumers are exposed to, ensuring only accurate claims are seen by customers. Those that are found to be false, could be investigated further for a breach of laws on misleading and deceptive conduct.

I don't like when a website says only one left for multiple products only when put in cart, then ya feel like it's pressure to buy it.

Comment from a consumer survey participant

Activity notifications

Activity notifications inform consumers about what other people are doing on the website or app. They often appear as innocuous notifications, either as a pop-up or embedded on the screen of a product or service that a consumer is viewing at the time.

What does it look like?

Our sweep revealed that while activity notifications were innocuous, they were also persistent. Activity notifications in the form of a pop-up appeared frequently during a browsing session – often more prevalent on retail websites. A new activity notification appeared anywhere from every four to eleven seconds (Figure 13).

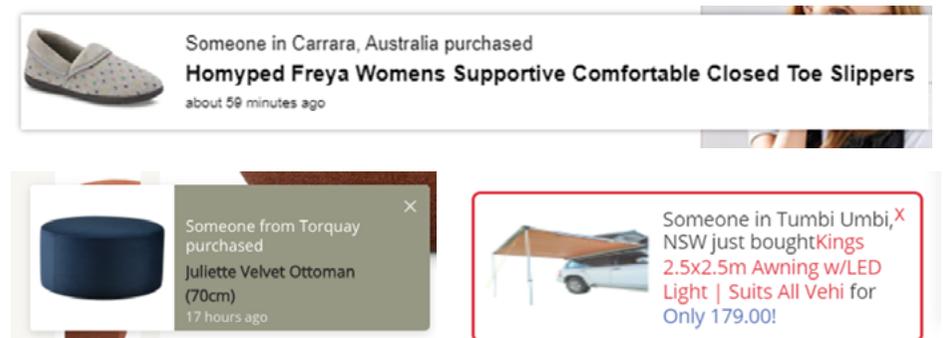


Figure 13: Examples of pop-up activity notifications.

Activity notifications were also bundled with and/or presented as a scarcity cue, creating an element of urgency to purchase a product or book a service (Figure 14).

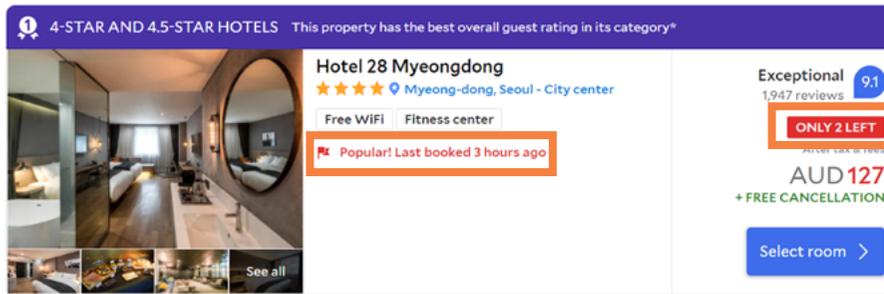


Figure 14: Agoda combines activity notification with a scarcity cue to create the urgency.

The harm caused by activity notifications

A prevalent dark pattern, 86% of consumers surveyed recalled seeing information telling them about what other people are doing on the website or app. This included purchases, views or visits. One in three (33%) Australians find it annoying while about one in four (27%) felt they couldn't trust the information. More than one in five (23%) considered this manipulative.

Similar to scarcity cues, activity notifications sit within the credence claim category of the framework. Again, consumers have no way of knowing or validating whether these notifications are true or not. Also, some activity notifications were dated as "two weeks ago" and many could have been a rolling loop of a handful of activity that may have occurred on the site over any given period of time. However, given the frequency at which they are displayed on the website, it gives the impression of a hype of activity and an urgency to act which places undue pressure on consumers to enter into a purchase.

Pop ups letting you know that a shopper in another part of the country has just purchased something is the most annoying pop up.

Comment from consumer survey participant



Confirmshaming

Confirmshaming is when specific language is used to suggest that a particular choice is shameful or inappropriate. It aims to make a consumer feel guilty or foolish for selecting the option that the business clearly does not want the consumer to make.¹⁵ Often this is used to encourage consumers to:

- remain subscribed to a service
- share more personal information than necessary to complete a transaction (e.g. nudging consumers to create an online account)
- spend more than they may be originally intending (e.g. discounts offered at sign-up but require a minimum spend)
- subscribe to marketing content, including personalised advertising.

Confirmshaming is often also presented in forms of a false hierarchy where the discouraged option using the shameful language often appears smaller and less prominent than the preferred option by the business.

What does it look like?

CPRC identified this example of confirmshaming from eBay in relation to unsubscribing from eBay Plus – a paid subscription program (Figure 15) and another from the footwear retailer Brand House Direct (Figure 16) which encourages customers to provide name and email address for a discount coupon. These designs are influencing consumers to either spend more money or share more personal information than they intend to. In both cases, the business outcome is to drive consumers towards a choice that the business can monetise, either immediately or in the future.

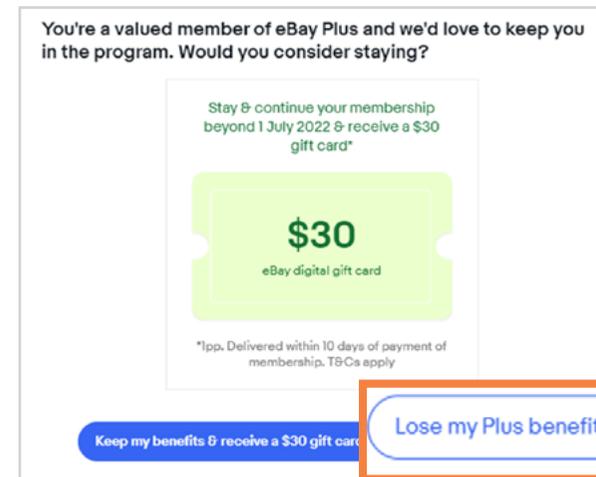
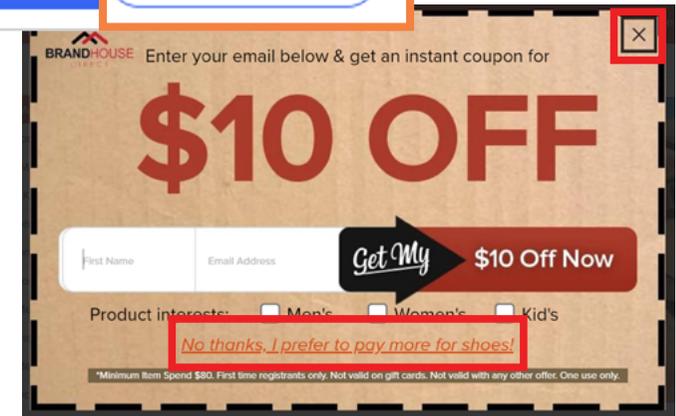


Figure 15: Cancelling eBay Plus membership is presented as “Lose my Plus benefits” while the alternative choice is “Keep my benefits and receive a \$30 gift card”.

Figure 16: Brand House Direct positions the decision to not share personal information with them as choosing to pay more for shoes. The link is not clickable and the only way to close the pop-up is via the X button on the top right-hand corner.



The harm caused by confirmshaming

The majority of consumers surveyed recalled seeing the practice of confirmshaming. The survey revealed that 80% had seen language used on a website or an app which suggests that a certain choice is irresponsible or shameful. Almost two in five (38%) consumers found it manipulative, almost one-third (30%) found it annoying and over one in five (22%) found it deceptive.

Confirmshaming has potential to cause consumer harm by manipulating financial and data-sharing decisions. However, it is unlikely to be a breach of current provisions of the ACL. It is a practice that is unfair but not illegal. However, a prohibition on unfair practices could help create a shift away from these design practices.

Hotel California (Forced continuity)

Named after the song which famously includes the line, “You can check out any time you like but you can never leave”, Hotel California,¹⁶ also known as forced continuity, is a dark pattern which uses design features and website navigation in a way that impedes consumers’ ability to cancel or move out of a particular service.

The Hotel California strategy is often used to discourage people from cancelling an online subscription or service, including services involving a free trial. It can often involve complex website or app navigation paths that require several clicks, vague terminology and continuous attempts to encourage the consumer to reconsider a request. This design treatment is very likely to cause consumer frustration and lead to financial costs depending on the degree of difficulty a consumer has when trying to cancel or stop charges.

What does it look like?

Amazon is well-known for its use of the forced continuity dark pattern when it comes to unsubscribing from their services. In 2021, the Norwegian Consumer Council’s investigation at the time led to identifying that while it only takes consumers three screens/clicks to subscribe to Amazon Prime, a consumer needs to navigate up to 12 screens/clicks to unsubscribe from the service.¹⁷

Our sweep found that while it may no longer take 12 screens to unsubscribe from an Amazon service, it still requires navigating more than 5 screens (some involving lengthy content) to finalise cancellation of an Amazon Music Unlimited subscription. The consumer is unable to unsubscribe directly from the Amazon Music app but is redirected to the main Amazon app. Once there, the consumer is requested to provide a reason

for cancellation after which Amazon provides alternative plans which the consumer must navigate before confirming cancellation which isn’t explicitly confirmed showing only one button with the prompt “Continue subscription”.

Similarly, our sweep found that navigating through cancelling an eBay Plus subscription involved multiple steps (Figure 17). Combining a mix of dark patterns (confirmshaming, forced continuity and false hierarchy), it takes four additional steps after selecting “cancel membership” to successfully cancel it.

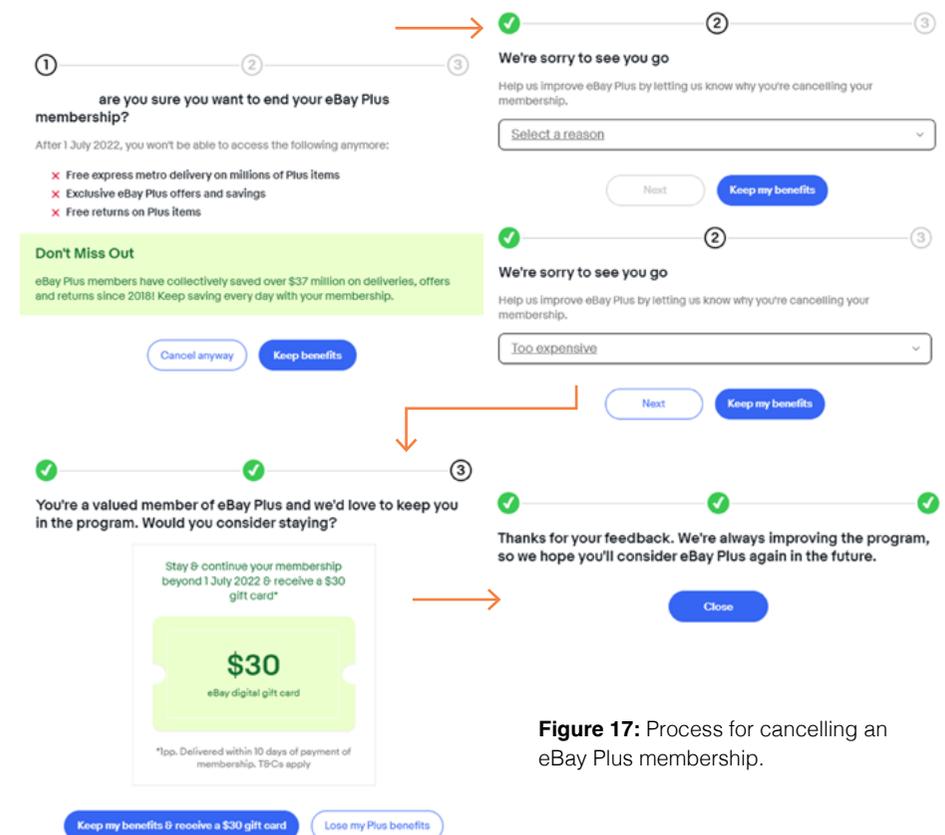


Figure 17: Process for cancelling an eBay Plus membership.

Conversely, it only takes one click after clicking on the eBay Plus icon to join the service and if a user creates a new eBay account, the first pop-up upon creating their account is a prompt to subscribe to the service's free trial followed by choice of subscription plan by adding the payment details directly into that pop-up and clicking Continue (Figure 18).

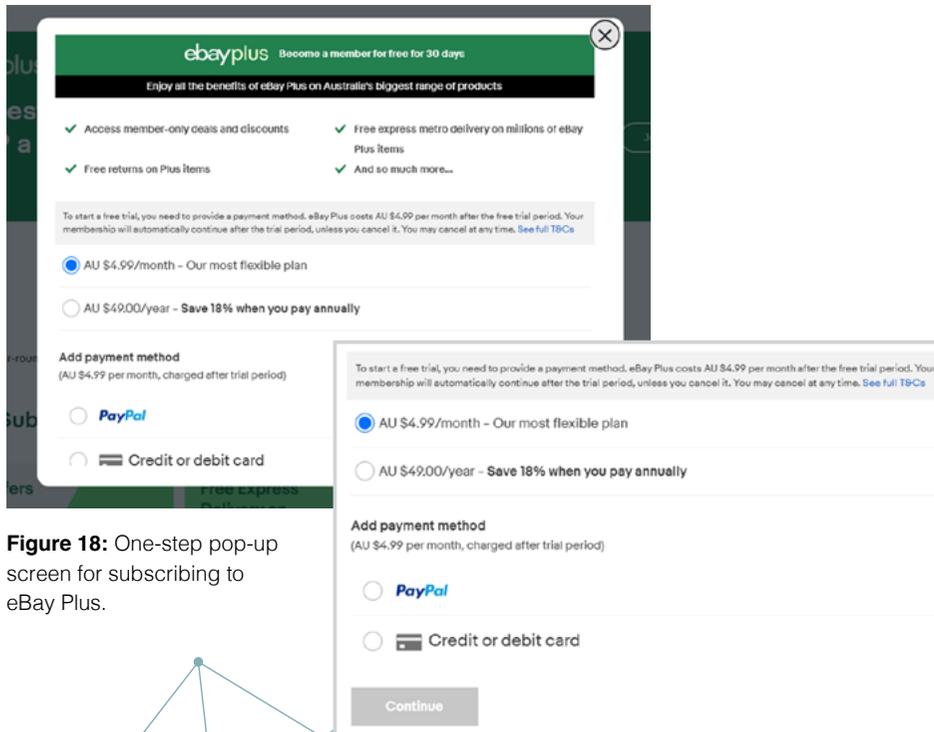


Figure 18: One-step pop-up screen for subscribing to eBay Plus.

The harm caused by forced continuity

Three in four (76%) consumers surveyed had experienced difficulty cancelling an online subscription, including unsubscribing before a free trial ends. While 44% of Australians found the practice annoying and 39% found it deceptive, this practice also led to consumers forming perceptions that in the long-term could prove damaging for businesses. More than two in five Australians (41%) found that it made them want to stop using the website or app and 39% of Australians felt they couldn't trust the business.

Forced continuity is yet another design type that is not explicitly illegal in Australia but it can lead to consumers being forced into keeping products or services that they no longer need, with the propensity to cause them financial harm. This potential market-based harm may be exacerbated or compounded for those consumers already experiencing circumstantial vulnerabilities (e.g. sudden illness or bereavement) or systemic vulnerabilities (e.g. lower digital literacy).¹⁸

In the spectrum of harm, forced continuity is unfair practice but certainly not illegal.¹⁹ A prohibition on unfair practices could help introduce measures that protect consumers who may feel trapped or locked into services they no longer need. For example, one way to achieve this is for government to impose obligations that a service should be as easy to opt-out of as it is to opt-in. Laws requiring that businesses offer simple online cancellation services have already been enacted in specific cases in Australia. For example, in 2018, the National Consumer Credit Code was amended to allow easier online credit card cancellation options after a Senate Inquiry found that consumers could easily sign up for a credit card but typically had to take multiple complex steps to cancel.

False hierarchy

The practice of false hierarchy aims to nudge consumers to a particular choice, even if more than one option is provided. Often this is done to make the “preferred choice” stand out over others through size, placement or colour. False hierarchy tends to appear as an invitation to consumers to sign-up to marketing content in return for discounts or that push consumers towards a purchase. It can often lead to consumers sharing more personal information or lead them to spending more than they intended to as the offer or discount received may involve a minimum purchase amount.

What does it look like?

Our sweep identified several examples of false hierarchy where the least preferred option was paler or less prominent in colour, smaller in size or available only via a small X icon on the top right corner to close the pop-up. The preferred option was displayed clearly, often using background button colours such as green or blue, which often correlate with a calming and positive/correct action (Figure 19).²⁰ Alternatively, some designs used a prominent colour from the website’s own colour palette, indicating a natural progression.²¹

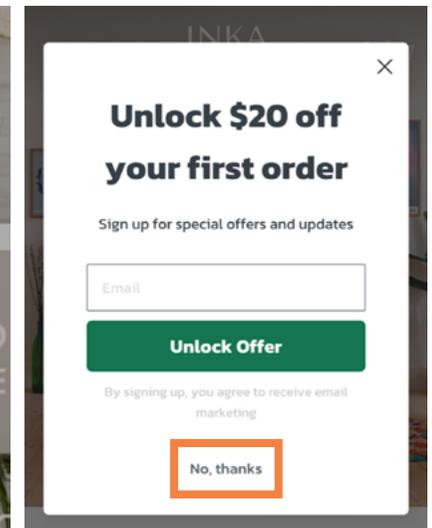
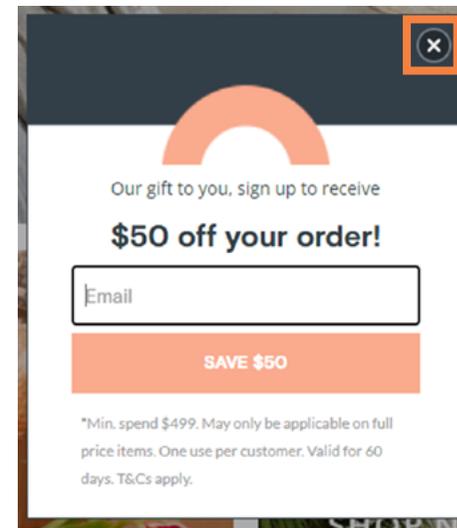
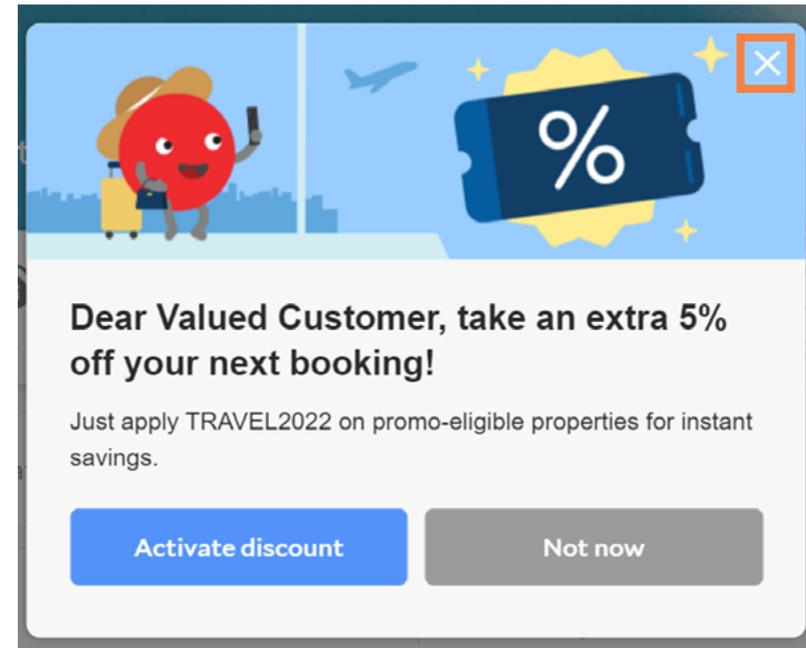


Figure 19: Examples of false hierarchy – we have drawn an outline around the “not preferred” action.

In some instances, an alternative option is not provided to consumers at all. Displayed as a pop-up, the only way to detour away from the false hierarchy is to click outside of the pop-up to make the “preferred option” disappear (Figure 20).

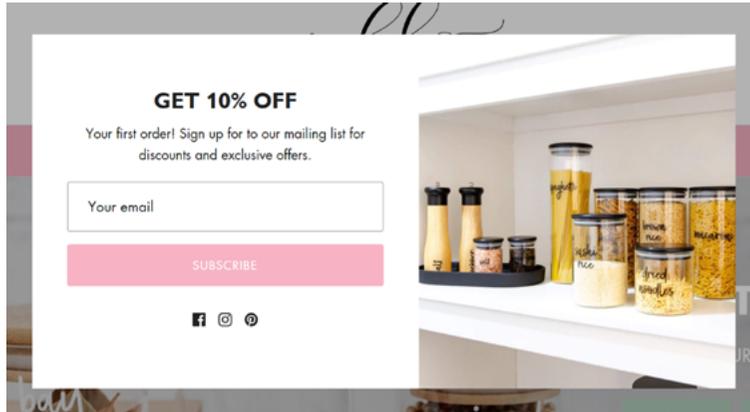


Figure 20: No alternative button or close symbol provided. Consumers must click outside of the pop-up if they wish to navigate around the false hierarchy.

The harm caused by false hierarchy

Most Australians (86%) have recalled seeing false hierarchy on websites or apps where one option is made to stand out more through colour, size or placement on the webpage. One in four Australians (26%) found this practice to be manipulative. Given its prevalence in parts of websites or apps where personal information is sought, it can potentially have long-lasting implications for a person’s privacy. Often many such pop-ups either fail to include information on the organisation’s privacy policy or include it via a link in fine print. It creates a choice architecture that is heavily swayed towards benefitting businesses but has very little regard for meaningful consumer outcomes.

Redirection or nagging

Redirection or nagging occurs when a consumer is continuously moved away from the activity they wanted to complete. This can often be in the form of a pop-up inviting consumers to join an email subscription, claim a particular offer or entice them into remaining on the website or app.

What does it look like?

Our sweep revealed that pop-ups were the most prevalent and persistent technique of nagging. The fast-fashion online retailer, Shein, used several pop-ups to encourage users to share their email or to set-up an account (Figure 21). As soon as one pop-up was closed, immediately a new pop-up would appear with an invitation of a new offer to claim.

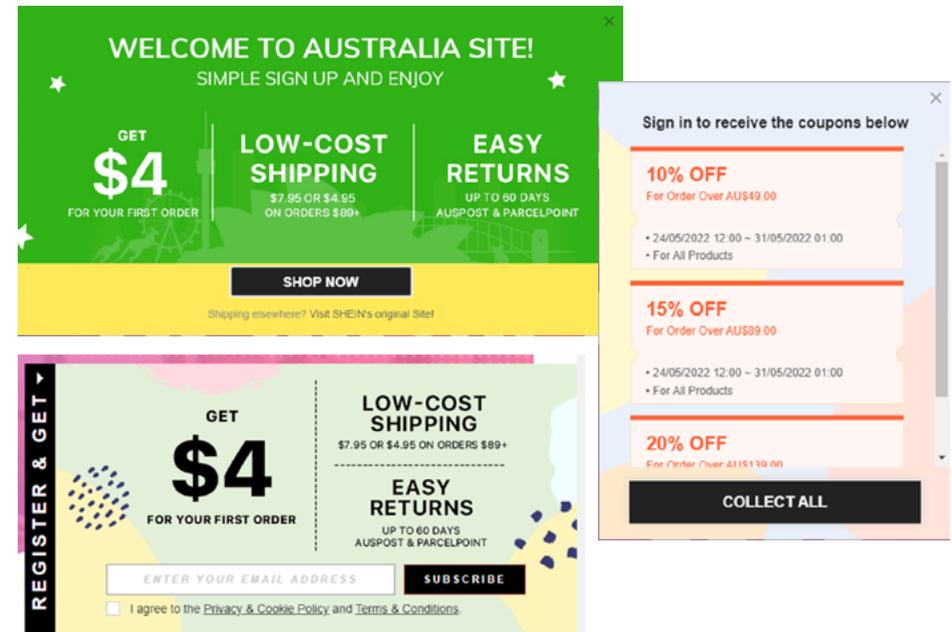


Figure 21: On Shein’s website, users have to navigate through three instances of pop-ups, one after the other before being able to access the site.

Some websites seem to have a built-in cursor reader so as the cursor moved towards closing a site, changing tabs or was stagnant for a specific period of time, a pop-up would appear encouraging the consumer to remain on the website by signing up to a new offer or to share contact details so a quote or the shopping cart could be emailed to the consumer (Figure 22).

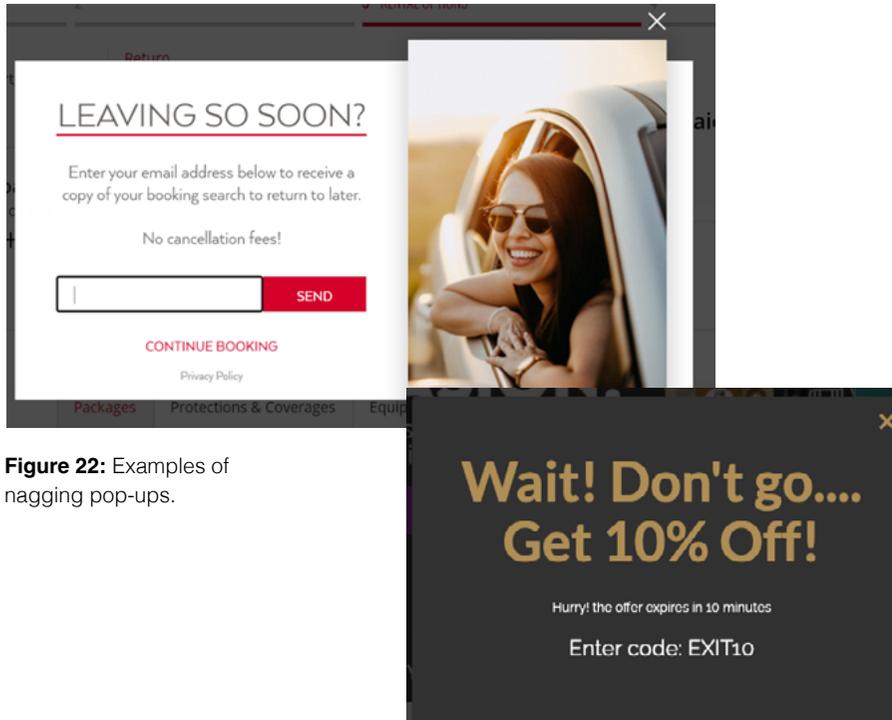


Figure 22: Examples of nagging pop-ups.

To what extent emails provided in these instances are then stored or added to customer databases or profiles is unclear but given the benefits of data harvesting for businesses, it is likely the personal information shared as result of these pop-ups would not be for one-time storage or use. Nagging can also occur after a consumer has left the website or app when contact details have been shared (Figure 23).

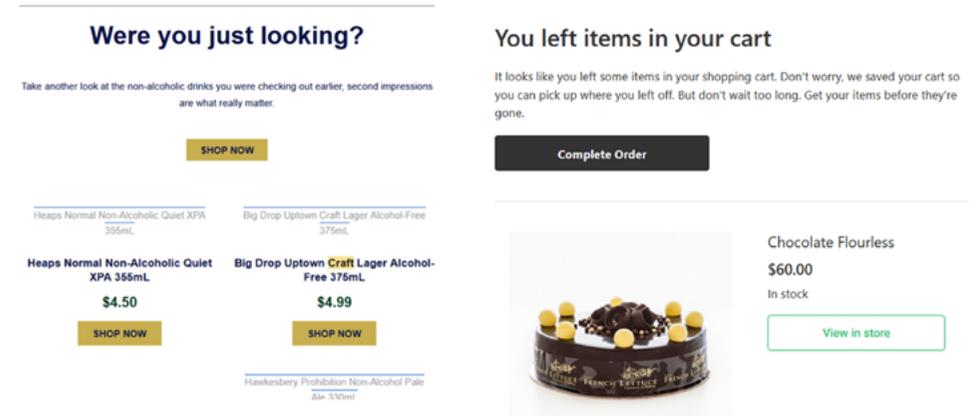


Figure 23: Examples of nagging emails that remind consumers what they may have been browsing or products they may have abandoned in cart.

The harm caused by redirection or nagging

Most consumers surveyed (88%) recalled seeing a pop-up appear and interrupt or move them away from what they wanted to do on the website or app. These included requests to turn on notifications, constant invitations to join an email subscription or encouragement to claim an offer. Almost half (48%) of Australians found it annoying, while about one in five (21%) wanted to stop using the website/app. One in five (20%) also found the practice to be manipulative.

Pressure sale tactics have been applied by businesses well before the digital era. In a physical setting, it can be, in some instances, difficult for a consumer to retreat but once retreated, a consumer is unlikely to be nagged due to lack of personal information available to the business. However, in an online setting, consumers can be redirected and nagged even after they've moved away from the website. It creates an unfair advantage for a business which is able to use consumer data to continue to place pressure on a customer for longer periods of time.

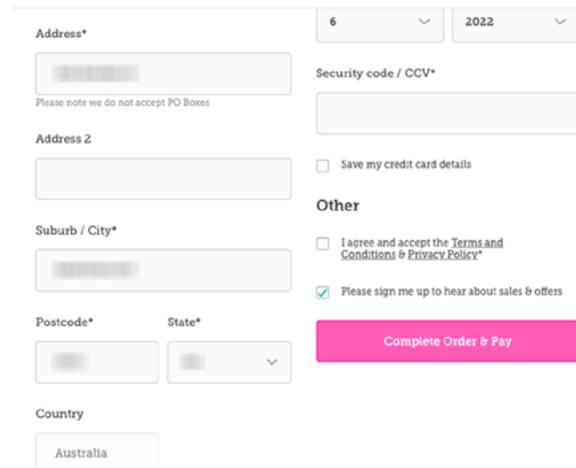
Data-grab

While the aim of many dark patterns can be to harvest more personal information, our research identified that certain design features and functionality have been built specifically into websites or apps for the sole purpose of collecting more consumer data. We have coined these as “data-grab” dark patterns.

What does it look like?

Data-grab can happen in various forms including:

- pre-ticking the option to receive marketing content from the business (Figure 24)
- forcing a consumer to create a customer profile and/or requesting more information than necessary to browse or purchase a product or service (Figure 25)
- showing a message on the website or app notifying consumers that by using the website they accept their data terms and conditions (Figure 26).



The screenshot shows a checkout form with the following fields and options:

- Address* (with a dropdown for postal code '6' and year '2022')
- Security code / CCV*
- Address 2
- Suburb / City*
- Postcode* and State* (with a dropdown)
- Country (set to Australia)
- Save my credit card details (checkbox, unchecked)
- Other (checkboxes):
 - I agree and accept the Terms and Conditions & Privacy Policy* (checkbox, unchecked)
 - Please sign me up to hear about sales & offers (checkbox, checked)
- Complete Order & Pay button

Figure 24: During this checkout process, the option to sign-up to sales and offers is pre-ticked.

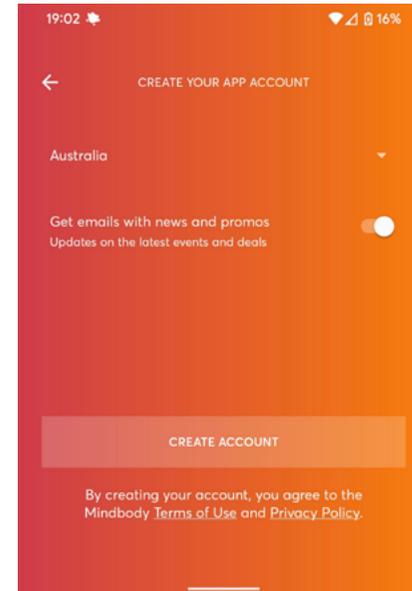


Figure 25: To just view the timetable for a yoga class, the businesses uses an app in which the user must create an account before accessing the timetable.

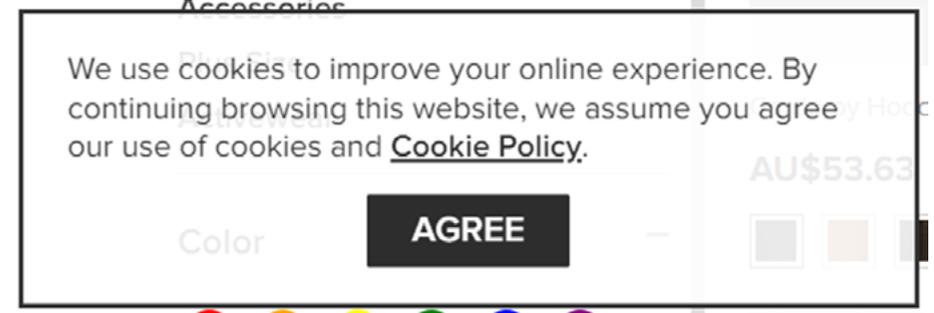


Figure 26: No alternative is provided and the consumer must choose between agreeing to an already set cookie policy or being excluded from browsing the site.

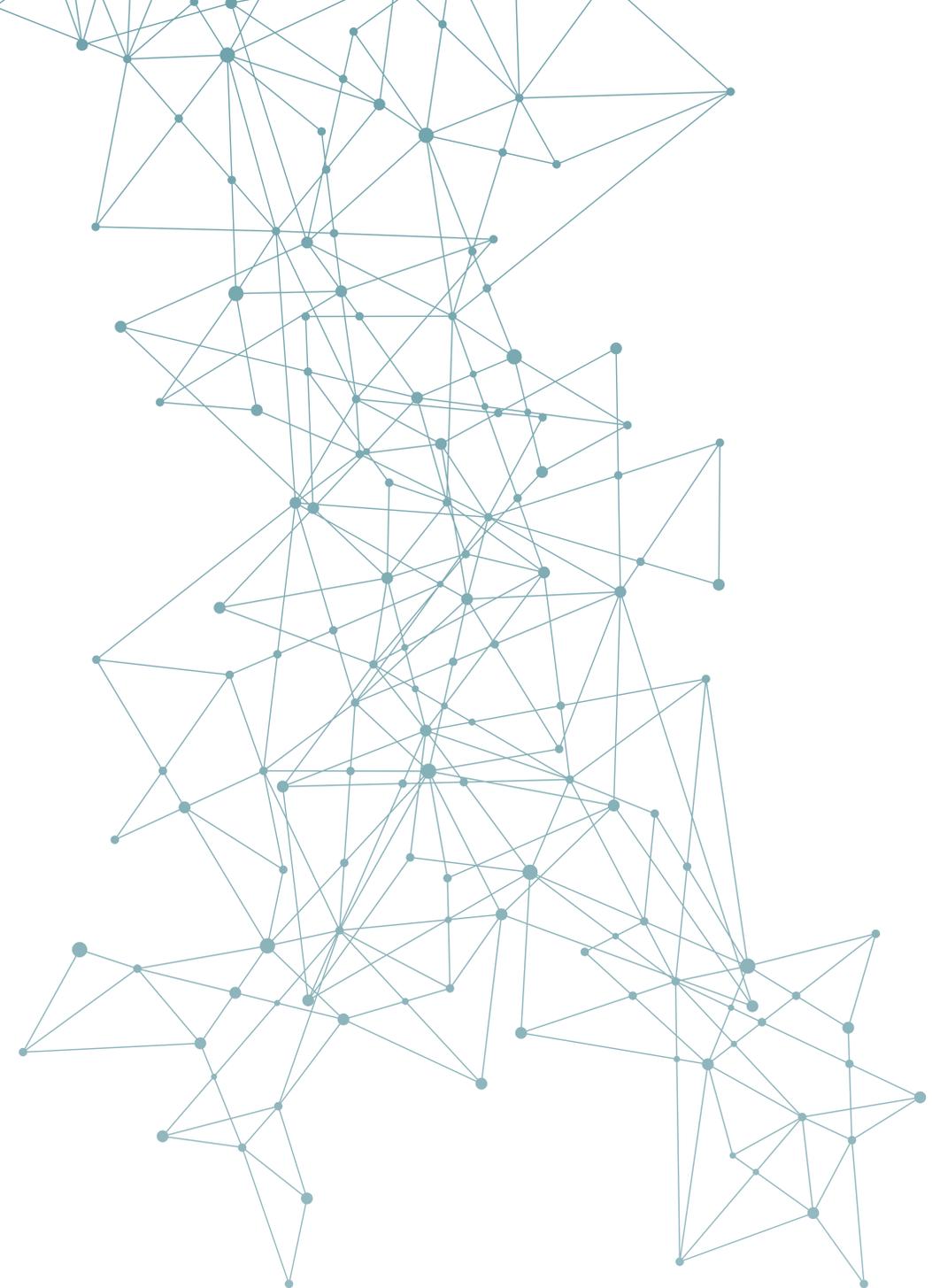
The harm caused by data-grab

The majority of consumers surveyed (89%) recalled being asked for more information about themselves than what was needed to access a product/service. Almost two in five (39%) Australians noted that the practice concerns them, while one in three (33%) felt they couldn't trust the business. Nearly one in three (32%) Australians wanted to stop using the website or app.

These results are unsurprising given that CPRC's 2020 Data and Technology Consumer Survey revealed that 75% of Australians feel businesses have a high level of responsibility to provide protection against collection and sharing of personal information and eight out of ten consumers are uncomfortable with unnecessary sharing of their information.²²

The data-grab dark pattern can have significant implications for consumers. Their personal information can be used to make predictions about them to drive commercially-beneficial outcomes for businesses. Personal information can also be highly sensitive and if not used with care would violate a consumer's privacy. Personal data can also be used to influence what someone consumes and at what price.²³

The data-grab dark pattern could potentially breach the Australian Privacy Principles of being open and transparent on how personal information is managed or when there is a lack of notification that a particular action by a consumer will lead to collection of personal information.²⁴ Also, some design practices could be a breach of unfair contract terms law if a different set of personal information is sought from a consumer who enrolls online to those that enrol in a physical setting without having any difference to the type of service they receive. However, existing laws, in particular the Privacy Act, do not go far enough to protect consumers. Currently, the definition of personal information is limited to data 'about' an individual (e.g. name, address, date of birth, health records, phone number). Due to the limited case law on this concept, there is presently uncertainty about whether personal information would include data - such as IP addresses and location histories - that goes beyond these traditional forms of personal information. Today, multiple sources of data may relate to an individual without using their real name. These can be collected and aggregated to easily assist in re-identification of the individual.²⁵



The consumer experience

Dark patterns create consumer harm. While some are irritating or annoying, others are leading to direct financial costs to consumers or are misleading people about what they are buying or what their rights are as consumers.

CPRC’s consumer survey found that there is a high level of awareness that organisations use dark patterns to influence users into behaving a certain way (58% of survey participants). There is also a high level of frustration being experienced by Australian consumers when online.

“Manipulative” or “Deceptive” were in the top three responses to nine out of the ten dark patterns tested with Australian consumers. The deceit felt by Australian consumers, even with those dark patterns that at the outset may seem innocuous or ubiquitous, is significant. Our survey revealed that 83% of Australians experienced one or more negative consequences as a result of a website or app using design features aimed at influencing their behaviour.

Despite the growing ubiquity of dark patterns, it does not mean consumers have become accustomed to them or consider them as fait accompli; instead, it is deteriorating their experience in the digital economy.

“I feel that it is many of the online stores that use these tactics to manipulate, trick or entice you to sign up for something you really don’t want. I believe you have to be very vigilant when using some apps and websites.”

“...I don’t buy a lot online anyway but more so because I’ve experienced these types of websites. I would buy more online if the websites did less of this type of behaviour.”

Comments from consumer survey participants

Negative consequences ranged from impacting a consumer’s emotional wellbeing to those impacting consumers financially or resulting in loss of control over personal information (Figures 27, 28 and 29).



The impact on younger consumers

Younger consumers are even more negatively impacted by dark patterns. Younger Australians (aged between 18 and 28 years) are more likely to part with more of their money and their personal information than any other age group. This can lead to considerable impact on their financial wellbeing and mean more businesses have access to their personal information that can be used in future to target this group of customers (Figure 30). For example, younger consumers were 65% more likely to spend more than they intended to online and 34% more likely to create an online account they didn't want to due to dark pattern influences.

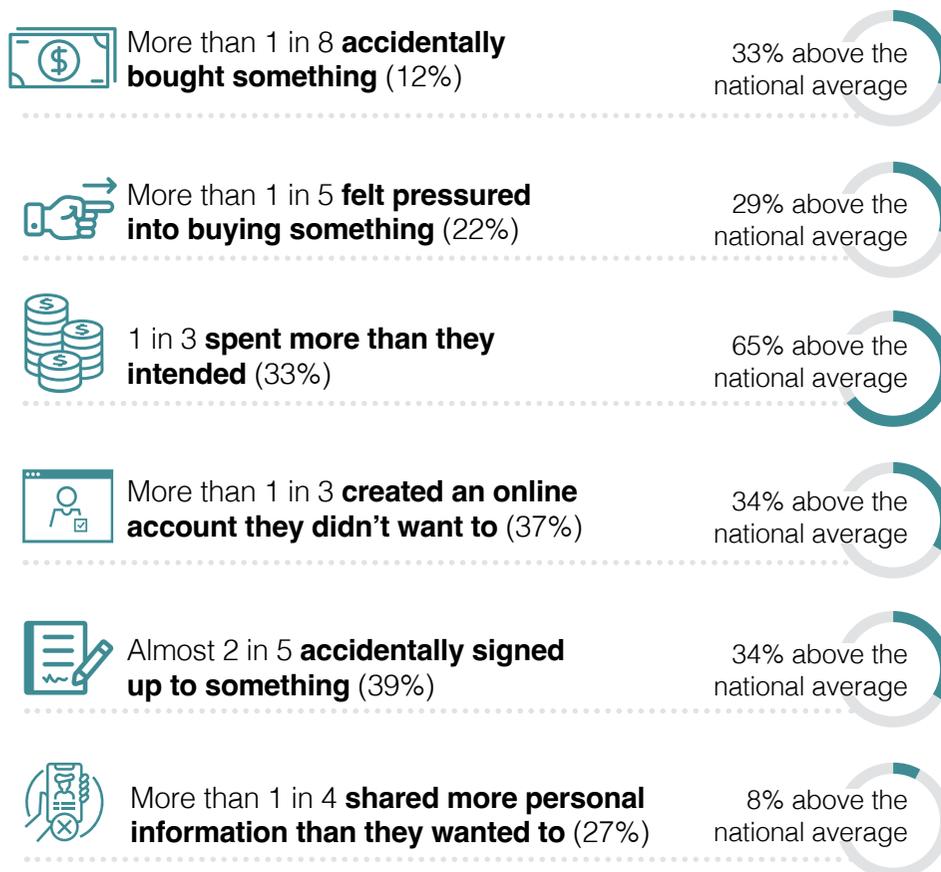


Figure 30: Impact of dark patterns on younger consumers aged 18-28 years

"I hate it when they bombard you with many things such as ads, countdowns, pop ups, colours, deception and it makes it really hard to deal with."

Comment from consumer survey participant aged between 18 and 28 years

The cost to business

Businesses that use dark patterns across their online platforms are likely to increasingly face consequences, whether that's from consumers turning to user friendly competitors or action from regulators when the dark patterns used cause direct consumer harm. While in the short-term dark patterns may lead to a financial gain or enable data harvesting that can be monetised, in the long-term it can negatively impact the businesses due to a loss of consumer trust and loyalty (Figure 31). Trust has been widely identified as a key component of well-functioning markets – 'individuals and organisations will find it difficult (if not impossible) to operate effectively if they do not enjoy the trust and confidence of the community in which they are located'.²⁶



Figure 31: Australian consumers' perception of businesses using dark patterns

“Manipulative tactics like these aren’t worth the loss of trust from customers just to make a few extra dollars. Long term trust and customer loyalty is more important.”

Comment from consumer survey participant



Addressing the harms and next steps

Australia has a real opportunity to step-up consumer protections in the digital economy. With the current review of the Privacy Act underway and ACCC’s Digital Platforms Inquiry which has consistently revealed gaps in the consumer law, the time has come to protect Australian consumers. The onus can no longer remain on consumers to navigate a digital economy that hasn’t been designed with consumer interests in mind. The “hands-off” approach to market stewardship of the digital economy has facilitated the growth of exploitative practices, leveraging consumer biases against them and heighten existing information asymmetries. Businesses need to take responsibility for their actions and proactively identify and stop potential consumer harm.

Internationally, jurisdictions have made significant strides in addressing the harms of dark patterns. The European Union introduced its Unfair Commercial Practices Directive in 2005 and has continued to strengthen it regularly. Its most recent iteration came into effect in May 2022. It includes obligations relating to data-driven personalisation and dark patterns.²⁷ In March 2022, the European Data Protection Board commenced consultation on new dark pattern recommendations for both designers and commercial users of social media.²⁸ Meanwhile, in April 2022, the United Kingdom’s Competition and Markets Authority released a detailed publication on choice architecture outlining how choice is structured, the information provided around it or how the pressure to choose can cause both competition and consumer harm. It also outlined its intent to take greater enforcement action in this space.²⁹

In the United States, the Federal Trade Commission has publicly noted its enforcement focus on dark patterns, putting companies on notices who implement dark patterns that trap consumers into subscription services.³⁰ In March 2021, the US state of California, strengthened its 2018 California Consumer Privacy Act which banned dark patterns that have “the substantial effect of subverting or impairing a consumer’s choice to opt-out”. It applies to practices such as using confusing language and forcing users to navigate through unnecessary steps about why they shouldn’t opt-out.³¹

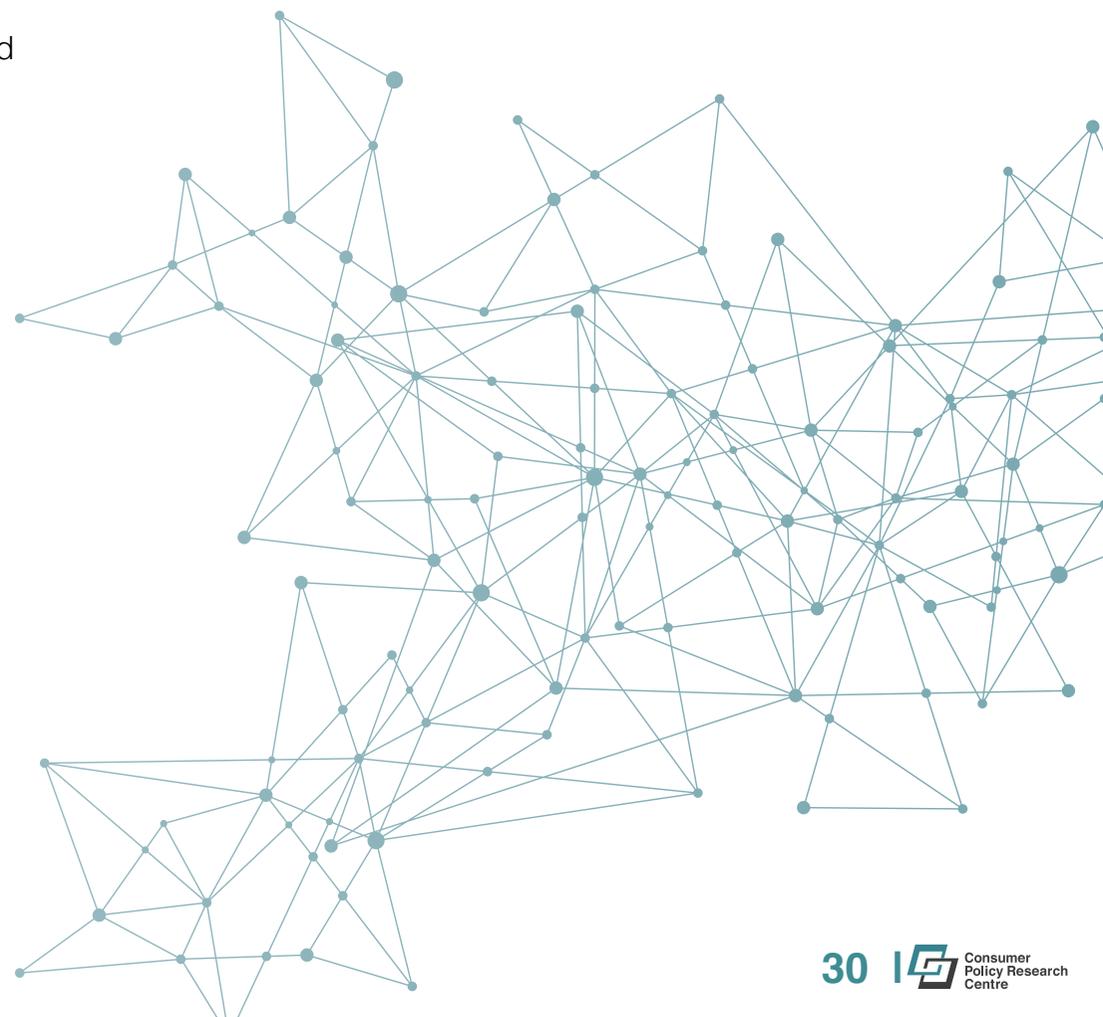
What does the Australian Government need to do?

Currently the laws we have in place in Australia can only be used to deal with a narrow range of harms caused by dark patterns. For example, laws against misleading and deceptive conduct cannot necessarily apply to instances where businesses coerce consumers into a specific choice. In addition, when it comes to the unconscionable conduct provision under the ACL, court rulings indicate that the threshold of applicability is high, and many practices that have been identified as unfair in this report would not meet this threshold.³²

The *Competition and Consumer Act 2010*, including the ACL, should be reviewed to ensure it is fit-for-purpose for the digital economy. However, wider whole-of-economy reforms are also needed to adequately protect consumers, such as:

- introducing an unfair trading prohibition
- strengthening unfair contract terms provisions
- reforming the Privacy Act to give consumers more control and agency over their data.

In addition to these reforms, Government must ensure dispute resolution models are relevant for the digital economy today and in the future. While the ACCC’s recommendation of an ombudsman scheme for digital platforms led by the Telecommunication Industry Ombudsman³³ and the Attorney-General’s proposal to introduce a Privacy Ombudsman³⁴ are a starting point, they are still only providing a piece-meal approach to support and redress. There is merit in considering a more holistic approach such as a Digital Ombudsman that provides consumer support across the digital economy and is flexible enough to respond to today’s challenges and complex matters that are likely to arise in the future.³⁵



What can regulators do?

For legislation to be effective, it needs to be supported by regular surveillance and enforcement by the regulator to educate and shift the market towards a more consumer-centric approach to the digital economy. Australia needs a well-resourced regulator with the capacity and capability to audit and enforce breaches in the complex digital environment. Traditional compliance and enforcement models often take place post harm. This needs to be reimagined if protection is to be adequately delivered to consumers in the digital economy.

Regulators also need more sophisticated approaches to identify harm. Currently regulators largely rely on reports from consumers, identifying harm after it takes place. Consumers can't continue to be responsible for identifying and reporting breaches, especially for complex digital issues where they may not be aware of design and data-driven manipulation. Instead, regulators need to proactively uncover harm that is currently obfuscated. Regulators should be pushing businesses to be radically more transparent about their business models and practices – this is a first step to then removing unfair practices.

Monitoring and surveillance by regulators in this complex environment needs a diverse workforce that not only understands the implications of the law but also the technical architecture on which these business models are built upon. Experts such as ethical designers, data scientists, artificial intelligence engineers, information security analysts and other technical professionals need to be in the mix to support upstream regulation and mitigate the risk to consumers, potentially before widespread harm has occurred.

What can businesses do today?

Businesses have the opportunity to be at the forefront of consumer-centric change and to lead by best practice. Our consumer survey revealed a significant portion of consumers reported leaving platforms, losing trust in businesses or having negative feelings towards businesses using dark patterns. Adjusting the mindset from a purely profit-driven perspective to a consumer-centric perspective may assist in reducing the prevalence of those negative outcomes and lead to better business outcomes in the longer-term.

Businesses, especially large corporations and those that design and supply off-the-shelf e-commerce products and services, should consider:

- conducting an audit for any dark patterns on their websites and apps amending and adjusting design features on their websites and apps that are causing consumer frustration or harm (in reference to the previous sections)
- undertaking regular consumer user experience (UX) testing that considers the consumer journey across their platform from the lens of the consumer, not the business.

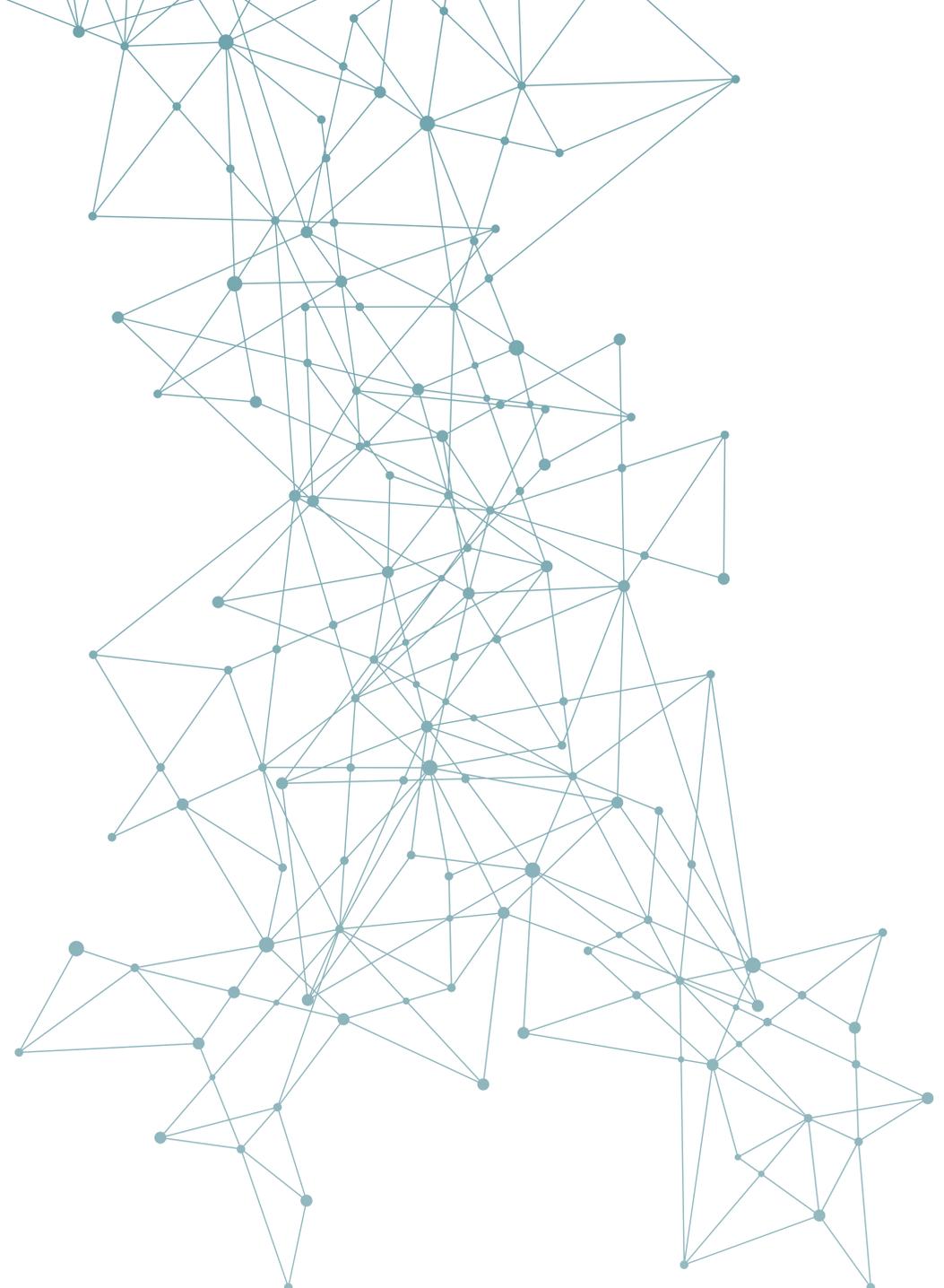
Our sweep indicated that dark patterns were prevalent on the websites and apps of both large and small businesses. Given that small businesses are unlikely to be in a position to develop bespoke websites or apps, off-the-shelf e-commerce products become an attractive alternative to create their online presence. However, small businesses can choose to embed those design features offered within the e-commerce products that are in the interest of their customers.

Small businesses should also consider conducting an audit of their websites and apps and seeing which features could be potentially dropped and which could be amended in a way that they mitigate consumer harm. Small businesses should also reconsider whether their current off-the-shelf e-commerce product is the best option for them when reducing the number of dark patterns on their website. For example, while almost all e-commerce products will include the functionality to request a newsletter or email subscription, small businesses should consider how that is being requested and how and where the consumer data is being stored and whether it is shared with third parties.

Businesses that champion consumer-centric design and abandon dark patterns have the opportunity to publicly portray it as best practice, garner trust from consumers and nudge other businesses to follow suit.

Where to from here?

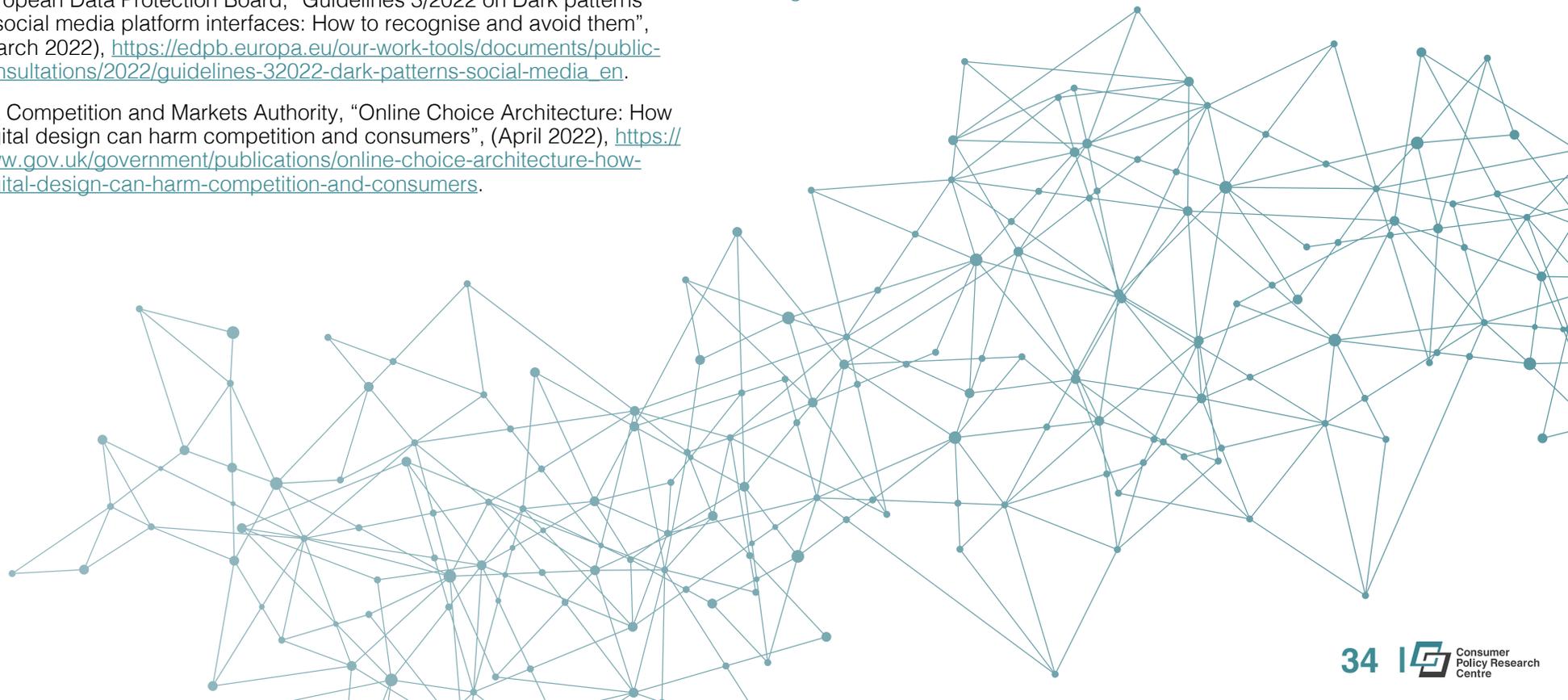
This research report on dark patterns provides a high-level insight into the practice and the potential consumer harm in Australia. More research will help to further understand the impact on consumers when engaging with specific industry sectors. As current laws are being reviewed and reconsidered, there's an opportunity to test whether they will adequately address these practices. We welcome the opportunity to work on this issue further with government, regulators, policy makers, academia and the community sector.



Endnotes

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