



Digital platform services inquiry

Interim report No. 3 – Search defaults and choice screens

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Australian Competition and Consumer Commission
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Glossary

Term	Description
ACC	Android Compatibility Commitments, agreements that have replaced AFAs since 2017 for some OEMs and contain broadly similar prohibitions.
ACCC	Australian Competition and Consumer Commission
ACCC 2021 consumer survey	Online survey commissioned from Roy Morgan Research and conducted in May 2021 with 2,647 respondents on consumers' usage of web browsers and search services.
ACMA	Australian Communications and Media Authority
Advantages of scope	Advantages gained by a firm from producing 2 or more distinct but potentially related products as compared to those products being produced by separate firms. These advantages could come from the firm's ability to bundle those services or use a shared resource, such as data or access to customers, across those products.
AFA	Anti-Fragmentation Agreements, agreements that broadly prohibit device manufacturers from taking 'any actions that may cause or result in the fragmentation of Android', as well as forbidding distribution of Android versions that do not comply with Google's standards as set out in the Android Compatibility Definition Document.
Android	An open source operating system developed by Google, which has been designed primarily for touchscreen mobile devices such as smartphones and tablets.
Android device	Mobile devices that use the Android operating system and have installed the GMS suite of apps.
Android OEM	An original equipment manufacturer that has installed on its devices the Android operating system and the GMS suite of apps.
API	Application Programming Interface, a computing interface that allows interactions between multiple software programs, such as apps and the OS.
App	Application, a software program that allows the user to perform a specific task either on a designated device or online.
Browser	An application that enables users to visit web pages on the Internet, such as Google Chrome, Firefox, Safari, and Microsoft Edge.
Browser engine	A critical piece of software required by all browsers to run, which interprets the code behind a website and presents it in the graphical format that the user sees and interacts with.
Bundling (Unbundling)	An arrangement where several products supplied by a company are offered as a single, combined unit. Unbundling

	is where such an arrangement is undone, and the buyer can purchase each individual product on its own.
CCA	<i>Competition and Consumer Act 2010 (Cth)</i>
CCI	Competition Commission of India
Choice architecture	The design of user interfaces, which can influence consumer choices by appealing to certain psychological or behavioural biases.
Chrome OS	Google's operating system for Chromebook desktop devices.
Click-and-query data	Click-and-query data includes data on the queries that users enter into a search engine, along with their actions taken in response to the results.
Closed source	Software where the source code is not published publicly nor freely licensed. Compare to <i>open source</i> .
CMA	Competition and Markets Authority of the United Kingdom
Cross-side network effects	Where an increase in the number of users on one side of the platform affects the value of the service to users on other sides of the platform.
Dark patterns	Elements of user interfaces which have been designed to make it difficult for users to express their actual preferences, or which nudge users to take certain action that may not be in their best interests.
Default arrangements	Arrangements between 2 parties for: <ul style="list-style-type: none"> • a search engine to be set as the pre-set search engine on a browser/search access point, or • a browser to be the default browser on a device.
Default bias	The tendency for consumers to remain with a default option, service or setting.
Default browser	The browser which automatically opens when a user clicks a hyperlink within the device ecosystem, such as from an email or message.
Default search engine	The search engine automatically used when a query is typed into the browser's URL or address bar, or another search access point. The default search engine may be determined by the browser/search access point (see <i>pre-set search engine</i>) or by the user (where the user changes the default from the <i>pre-set search engine</i>).
Desktop device	Personal computer devices, including laptops.
Device ecosystem	Integrated suites of hardware and software services that connect and relate to one another (namely, search services, web browsers, operating systems and devices). These include device ecosystems on mobile devices (mobile ecosystems) and device ecosystems on desktop devices (desktop ecosystems).

Digital Advertising Services Inquiry Final Report/Ad Tech Report	The final report of the ACCC’s Digital Advertising Services Inquiry, published on 28 September 2021.
Digital literacy	In this Report, digital literacy refers to a user’s understanding of how platforms operate and are monetised, knowledge of how to switch to alternative services and awareness of alternative suppliers, and an understanding of how to use platforms safely.
DMA	The Digital Markets Act (EU), a legislative proposal by the European Commission for platforms that act as gatekeepers in the digital sector. The DMA aims to prevent gatekeepers from imposing unfair conditions on businesses and consumers and ensure the openness of important digital services.
DMU	Digital Markets Unit, a specialist unit established within the UK’s CMA to oversee a regulatory framework applying to digital firms that are designated as having ‘Strategic Market Status’ (SMS). Legislation is required to fully empower the DMU and establish the SMS regime, expected to occur in during the UK’s 2022–23 parliamentary year.
DOJ	United States Department of Justice
Downstream search services	Search services that provide search results and adverts through negotiated syndication agreements with upstream search providers. Downstream providers may supplement the syndicated results and adverts with additional information and features.
DPI	Digital Platforms Inquiry, an inquiry conducted by the ACCC into digital search engines, social media platforms and other digital content aggregation platforms, and their effect on media and advertising services markets.
DPI Final Report	The final report of the ACCC’s Digital Platforms Inquiry, published on 26 July 2019.
DPSI	Digital Platform Services Inquiry 2020-2025 , the ACCC’s 5 year inquiry into the supply of digital platform services.
EC	European Commission
Economies of scale	Cost advantages obtained by a supplier, where average costs decrease with increasing scale.
EEA	European Economic Area, including the United Kingdom (UK). While the UK officially withdrew from the EU on 31 January 2020 and ceased to be a contracting party to the EEA Agreement from this date, references to the EEA and EEA countries for the purpose of this report should be taken to include the UK.
EU	European Union

EU Android choice screen	<p>A screen presented to users of Android mobile devices in the EEA, which provides users with a choice of search engines to set as the default search engine on the device. To date, there have been 3 iterations of the EU Android choice screen, each with different features and application. The primary focus of this report is the second iteration of the choice screen, which was active from March 2020 to August 2021 and applied only to new Android devices and only to search engines.</p> <p>Further information about each iteration of the choice screen is in section 4.1.1 of this Report.</p>
FAS	Russian Federal Antimonopoly Service
First DPSI Interim Report	The first interim report of the DPSI on online private messaging, search and social media services, published on 23 October 2020.
Fourth DPSI Interim Report	The forthcoming fourth interim report of the DPSI on general online retail marketplaces, due to the Treasurer by 31 March 2022.
FRAND terms	Fair, reasonable and non-discriminatory terms.
Gatekeeper	Digital platforms that serve as an important gateway for business users to reach their customers, and which enjoy, or will foreseeably enjoy, an entrenched and durable position in the relevant market. This can grant them the power to act as private rule-makers and to function as bottlenecks between businesses and consumers.
GMS	Google Mobile Services – a collection of Google-owned apps, including Google Search, Google Chrome, YouTube, and the Play Store, and APIs that support functionality across Android devices.
Google survey	Four online surveys of Android users in Australia conducted by AMC Economics and Compass Lexecon in September 2019. The surveys were on Android user behaviour and preferences on topics including search engines, browsers, ability to download apps and change defaults. These surveys are annexed to Google's submission to the Issues Paper, dated 7 May 2021.
iOS	Apple's operating system for mobile devices including the iPhone. The iPad runs iPadOS, which is based on iOS.
IoT	Internet of Things – the use of internet-connected technology in physical devices that have not traditionally featured such technology, such as cars, household appliances and speakers.
Issues Paper	The Issues Paper for the third interim report of the DPSI, released on 11 March 2021.
KFTC	Korean Fair Trade Commission

MacOS	Apple's operating system for desktop devices including MacBooks.
MADA	Mobile Application Distribution Agreements, a free licence available to OEMs and mobile carriers that license the Android OS to pre-install the GMS suite of apps on their smartphone devices.
MIA	Mobile Incentive Agreements, agreements between Google and OEMs, where OEM agrees to certain obligations in exchange for a specified share of revenue to be provided by the other party. For some OEMs, MIAs have replaced RSAs.
Mobile device	Smartphones
Network effect	The effect whereby the more users there are on a platform, the more valuable that platform tends to be for its users. Also see <i>cross-side network effects</i> and <i>same-side network effects</i> .
OEM	Original Equipment Manufacturer, a company that manufactures and supplies a hardware that integrates and uses software services and applications. Examples of OEMs include Apple, Samsung, Sony, Huawei and Xiaomi. Also referred to as a device manufacturer or device maker.
Open source	Software where the source code is publically available for use, modification, or distribution. Compare to <i>closed source</i> .
Operating systems	Operating systems manage computer hardware (e.g., processing, memory, and storage) and all other programs in a computer. In the traditional IT stack, operating systems sit above hardware and below middleware and applications.
Play Store	The app marketplace operated by Google for Android devices.
Pre-installation arrangements	Arrangements between 2 parties for: a search engine app to be pre-installed on a mobile device a browser to be pre-installed on a device.
Pre-installed browser	Where a browser is pre-installed on a device, it is available to the user upon device setup without needing to download or install an additional program or application.
Pre-set search engine	The <i>default search engine</i> determined by the browser or other search access point. Where a browser or other search access point has a pre-set default search engine, the browser will use that search engine unless the consumer changes the default.
Report	The ACCC's Digital Platform Services Inquiry's September 2021 Interim Report.
RSA	Revenue Sharing Agreements, agreements between Google and OEMs, where the OEMs agrees to certain obligations in exchange for a specified share of revenue to be provided by the other party.

Same-side network effects	Where an increase in the number of platform users on one side of the platform affects the value of the service to other users on the same side of the platform.
Search access point	Components or software within a device ecosystem that facilitate access to search services, including but not limited to browsers, search apps, search widgets and voice assistants.
Search service	Software systems designed to search for information on the World Wide Web, generally returning a curated, ranked set of links to content websites.
Second DPSI Interim Report	The second interim report of the DPSI on app marketplaces, published 28 April 2021.
Smartphone	A mobile phone with a touch screen, variety of hardware sensors and multimedia functionality.
SMS	Strategic Market Status. A designation that the CMA will be allowed to make under a proposed regime in the UK for companies that have substantial, entrenched market power in at least one digital activity which provides the company with a strategic position in that market. Firms with SMS will be subject to additional regulation including a legally binding code of conduct, pro-competitive market interventions by the CMA, and enhanced merger rules.
Specialised search service	Search engines that specialise in different types of search. For example, Expedia provides vertical search services for travel.
Syndicated search services	Organic search results provided by upstream search services to downstream search services.
Tying (Untying)	An arrangement whereby, in order to purchase one product, the buyer must also purchase another product that exists in a separate or differentiated market. Untying is where such an arrangement is undone, and the buyer can purchase each product individually.
Upstream search services	Search services that crawl the internet for new or updated websites, maintain an index of websites and use algorithms to determine which results to serve in response to a query.
User journey	ACCC analysis of the process required for consumers to change their default browser and pre-set search engine.
Voice assistant	Software accessed via an application or device that uses voice recognition, speech synthesis and natural language processing to perform tasks or services for an individual based on commands or questions. Examples include Google Assistant, Siri and Alexa.
Widget	A component of a mobile device's home screen or user interface that displays information or provides a specific way for a user to interact with the operating system or an app, without the user needing to open an app or other software first.

Windows

Microsoft's operating system for devices including desktop devices manufactured by Microsoft (such as Microsoft's Surface Books) and third party desktop devices (such as devices manufactured by Lenovo, HP and Dell).

Executive Summary

The ability to search for information and access content online quickly and easily is a must-have for consumers. Most Australian consumers use a search engine on a daily basis, with search engines acting as a gateway to other websites and content on the Internet. In a similar way, browsers are the key channel through which many consumers search for information on the Internet.

Having a browser and search engine service pre-installed on a device provides important benefits to consumers. In particular, they provide quick and easy access to essential functionalities offered by their device, including access to the Internet. However, pre-installation reduces active consumer choice, with many consumers using the pre-installed default services, especially on mobile devices, without consideration of alternative options.

Google Search, the dominant search engine in Australia with a market share of 94%,¹ is the pre-set default search engine on the overwhelming majority of browsers and other search access points (including search widgets, apps and voice assistants) on devices supplied in Australia. This is due to Google's ownership of the Chrome browser and arrangements with Apple, original equipment manufacturers (OEMs) that use the Android operating system, and competing browsers.

Importantly, Google Search is the pre-set default search engine on both Google Chrome and Apple Safari, which are the leading suppliers of browsers in Australia, and have a combined market share of over 80% on desktop devices and almost 90% on mobile devices. There is significant value to Google in being the default search engine. In its proceedings against Google, the United States Department of Justice (DOJ) referred to public estimates that the share of Google Search advertising revenue which Apple receives is between US\$8-12 billion per year globally for Google's default status for search through Safari, and to use Google for Siri and Spotlight in response to general search queries, on Apple devices.² The ACCC has examined these revenue sharing arrangements between Apple and Google and confirms that the 2020 share of Google Search advertising revenue received by Apple was in the upper range of the public estimates.³ The DOJ estimates that these arrangements represented between 15-20% of Apple's net global income in 2020.⁴ These arrangements, and other arrangements between Google and OEMs that use the Android operating system, have been the subject of scrutiny by courts and competition authorities overseas.

Default positions on browsers and other search access points provide the opportunity for search engines to reach consumers. Access to consumers is vital to search engines achieving economies of scale and realising network effects. Google's vertical integration and the commercial arrangements identified above significantly increase barriers to entry, preventing new or emerging rival search engines from reaching consumers that use many of these key search access points.

While there are other avenues for reaching consumers, these require competitors to convince consumers to actively switch away from the default services. In practice, many consumers stick with the default services (known as default bias), especially on mobile devices. Consequently, these arrangements have the effect of extending and entrenching Google's market power in the supply of search engine services in Australia, reducing contestability.

¹ Statcounter, [Search engine market share Australia June 2020 - June 2021](#).

² *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, para 118.

³ Information provided to the ACCC.

⁴ *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, para 118.

Given the critical role search engines perform in the online economy, the ACCC is particularly concerned with the low levels of contestability and competition in the supply of search engine services and the subsequent harms to businesses and consumers.

First, the dominance and control of key search access points by one provider, Google, reduces the likelihood that innovative services are developed and are able to reach consumers and businesses. One such example are search engines that emphasise privacy and minimal data collection. While there are examples of such services operating in Australia (DuckDuckGo and Brave Search), the arrangements covered in this Report conferring default status on Google create very high barriers to expansion, effectively limiting the size of the contestable market.

Second, reduced competition is likely to result in lower quality search services or search services with undesirable features. This may be in the form of greater exposure to sponsored results at the expense of organic results, for instance.

Third, less competition results in less diversity in the search engine business models offered to consumers. For example, Neeva, a new search engine, operates a subscription model and promotes the fact that it has no ads or affiliate links in its search results. This is distinct from Google Search and many other search engines, which are primarily funded by search advertising, and represents a different value proposition that consumers may desire. Google's foreclosure of key search access points through the arrangements discussed in this Report limits the ability of these businesses to grow, and consumers' exposure to new and potentially attractive business models.

Accordingly, the ACCC considers that measures are required to address these harms and to facilitate increased competition in search. As a first step, the ACCC recommends that it is given the power to mandate, develop and implement a mandatory choice screen to improve competition and consumer choice in the supply of search engine services in Australia.

A choice screen provides users with a selection of search engine options rather than a pre-determined default, and can improve the ability of rival search engines to reach consumers. It also presents consumers with greater choice and may improve their awareness of rival services that better suit their requirements or preferences.

The ACCC would be responsible for developing the criteria outlining the application of the choice screen to specified service providers, which should be linked to the provider's market power and/or strategic position. The development of a choice screen and its implementation should be subject to detailed consultation with industry participants and user testing, and there should be careful consideration of its interaction with other measures proposed in this Report. At this stage, the ACCC envisages that the choice screen should initially apply to new and existing Android mobile devices and across all search access points on these Android mobile devices, to address the effects of Google's strategic position in search and mobile operating systems. The ACCC also considers that the choice screen proposal should be free for search engines to participate in the choice screen.

Given the absence of any significant competition in the supply of search services, it is recommended that the ACCC is also given powers to consider other measures beyond mandatory choice screens to improve competition and consumer choice in search. The primary purpose of these measures would be to facilitate competition in search by lowering barriers to entry and expansion, and creating conditions in which rival search engines can emerge and effectively compete. They should be developed and implemented in a way that is proportionate and targeted to addressing consumer harm. The powers must also be flexible and capable of adapting to a dynamic and complex digital environment, and allow Australia to align its regulatory solutions with those being developed internationally.

At present, the ACCC considers that these measures could include restricting a provider, which meets pre-defined criteria, from tying or bundling search services with other goods or services. Subject to further consideration of the potential impacts on the business models of OEMs and browser suppliers, interactions with other measures, and privacy concerns, these measures may also include limiting the ability of the provider to pay for certain default positions and potentially mandating access to specified datasets for rival non-dominant search engines.

The measures proposed in this Report should sit alongside the rules and powers proposed in the Digital Advertising Services Inquiry Final Report (the Ad Tech Report). The framework for these rules and powers will be considered as part of the fifth interim report under the Digital Platform Services Inquiry and in further reports by the ACCC. The fifth interim report will also involve a broader ACCC assessment of the need for digital platform ex-ante regulation to address common competition and consumer concerns we have identified across digital platform markets. The fifth interim report is due to the Treasurer by 30 September 2022 and the ACCC will release a concepts paper in the first quarter of 2022 seeking feedback to inform the report.

The impact of pre-installation and default arrangements on competition

Search engines can be set as the default search service on browsers and other search access points across device ecosystems (a range of interconnecting services and functionalities offered on a range of devices) through one of two ways:

- Search engine providers that are vertically integrated across a device ecosystem have the ability and incentive to pre-install their own search engine and set it as the default. For example, Google Search is the pre-set default search engine of Google Chrome, and Bing (owned by Microsoft) is the pre-set default search engine of Microsoft's browser, Edge.
- Search engines may have commercial arrangements to be the default search engine on a browser or device. For example, Google's arrangements with Apple.

Google's control of the Android operating system and the Google Play Store lessens competition from rival search providers

The Android operating system is open source and provided free of charge to OEMs of mobile devices such as Samsung, Huawei and Xiaomi. The majority of OEMs that use the Android operating system (Android OEMs) also license Google Mobile Services (GMS), which includes widely used apps such as Google Play Store, Google Maps, Chrome and Google Search. If an OEM requires access to one of these apps, such as Google Play Store, it must agree to install all of the apps in the GMS.

The ACCC has previously found that Google has market power in the supply of mobile operating systems and mobile app distribution.⁵ The combined effect of these agreements is that Google is able to effectively leverage its market power in mobile operating systems and mobile app distribution to foreclose important entry points for rival search engines.

⁵ ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, p 4.

The billions of dollars estimated to have been paid by Google to Android OEMs in exchange for, among other requirements, Google Search being set as the default search engine service on certain access points, combined with the pre-installation of Chrome, highlights the value of these search access points to Google.⁶

Google's arrangements with Apple and suppliers of browsers further limit competition from rival search providers

The arrangements between Google and Apple for Google Search to be the default search service on Safari and specified search access points on Apple devices provide Google with ready access to over half of all mobile device users in Australia, and a third of desktop device users.⁷ These arrangements are a significant barrier to entry, effectively foreclosing rival search engines from reaching the substantial proportion of Australian consumers that conduct searches on Apple devices.

Court proceedings have been brought by our overseas counterparts in relation to similar agreements. In particular, the DOJ and 11 State Attorneys-General have filed an antitrust lawsuit against Google in respect of the agreements between Google and Apple, and Google and Android OEMs. The filing alleges that Google has unlawfully maintained monopolies in the markets for search and search advertising through exclusivity agreements, tying and other arrangements with OEMs, and contractual agreements with Apple for Google Search to be the default search engine on Safari and other search access points on Apple devices.⁸ The first trial is currently set for September 2023. The ACCC is closely monitoring this court action, and continues to examine the specific allegations that have been made against Google under the CCA, including in relation to arrangements that grant Google default status.

Similarly, Google's arrangements with other browser suppliers may further foreclose rival search engine providers. These arrangements form a significant source of revenue for independent browsers that are not vertically integrated with search engines. For example, over 90% of Mozilla's revenue in 2019 was derived from royalty payments by search engines for search default placement on Firefox.⁹

The ACCC recognises that these payments allow browsers and OEMs to invest in research and innovation. However, the ACCC is concerned about the effect of these arrangements, which, when combined with the other pre-installation and default arrangements mentioned above, foreclose competition in the supply of search engine services.

Impact of pre-installation and default arrangements on access to users, data and scale

The pre-installation and default arrangements described above mean Google is the default search engine for the vast majority of consumers and searches conducted in Australia. By foreclosing access to these consumers and their searches, these arrangements impact rivals' ability to access click-and-query data and achieve economies of scale.

⁶ See, for example, *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, para 4; D Petrov, 'Search wars: Google may pay Samsung \$3.5 billion in license fees', *phoneArena.com*, 16 August 2017, accessed 13 September 2021; SamMobile, [Google will pay Samsung \\$3.5 billion to remain the default search engine](#), 16 August 2017, accessed 13 September 2021.

⁷ Statcounter, [Operating system market share Australia June 2020 - June 2021](#).

⁸ *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, paras 112-114.

⁹ Mozilla, [Independent Auditors' Report and Consolidated Financial Statements](#) as of 31 December 2019, 16 October 2020, p 4.

Click-and-query data includes data on the queries that users enter into a search engine, along with their actions taken in response to the results. Search engines use this data to improve their search algorithm and therefore, the quality of their offering.

While there are a number of factors that contribute to the quality of a search engine, click-and-query data is a critical input. In limiting rivals' ability to reach consumers at scale, Google has ensured it maintains access to an unrivalled dataset, allowing it to continuously improve the quality of its search results in a way that its competitors cannot, and reducing the extent to which rivals are able to scale and compete against Google.

This has flow on effects for the ability of rival search engines to monetise their services, effectively self-reinforcing Google's dominance in search. Google's position means it can offer greater sums to suppliers of browsers and OEMs to be the default search engine. Rivals are thereby foreclosed from accessing users and the necessary click-and-query data to improve their search engine service, further raising barriers to entry and expansion, and extending and entrenching Google's dominance in search.

The impact of pre-installation and default arrangements on consumers

The pre-installation of browsers, and the availability of search engines as a default on browsers and devices, can be beneficial to consumers by providing them with a seamless way of accessing the Internet. However, pre-installation and default arrangements, particularly when combined with the way that platforms provide these services and present choices to users, can exacerbate default biases that may not always be in consumers' best interests.

For example, platforms can influence consumers by designing user interfaces that appeal to certain psychological or behavioural biases, known as choice architecture. Platforms may also make it difficult for consumers to express their actual preferences or nudge consumers to take certain action that may not be in their best interests (known as dark patterns).

As discussed below, platforms' choice architecture and the use of dark patterns can harm consumer choice and discourage consumers from switching to alternative suppliers.

Consumers are likely to remain with the status quo and may not always know how to change their browser or search engine, or be aware of alternative services

Pre-installation and defaults can have the effect of encouraging consumers to remain with the status quo, known as default bias. This is supported by the results of the survey commissioned by the ACCC of 2,647 Australian consumers (ACCC 2021 consumer survey), which found that on mobile devices, 70% of consumers reported that the main web browser that they used had been pre-installed and 86% retained the pre-set default search engine on their web browser.¹⁰ Similarly, in the last 2 years, only around a fifth (18%) of consumers reported changing the pre-set default search engine on their mobile device and around 23% changed it on their desktop device.¹¹

While some consumers make a considered choice about their search engine or web browser, others do not. This is for a variety of reasons, including the impact of default bias, as well as a lack of knowledge. In addition, since browser and search services are already available on most new devices, some consumers do not turn their mind to which service provider best meets their preferences.

¹⁰ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 13, 67.

¹¹ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 16, 54.

Consumers are able to change their default browser or search engine through the settings menu and/or by downloading alternatives. However, the switching process is not always easy and some consumers lack the technical knowledge required to switch. For example, one in three respondents (35%) to the ACCC 2021 consumer survey reported that they either did not know how to change the default browser on their mobile device or were unsure if they knew how to do so.¹²

Even where consumers have the knowledge to change their browser or search engine, being able to do so requires awareness of alternative suppliers. Consumers that lack knowledge of alternative suppliers cannot meaningfully switch or choose the service that best meets their preferences, regardless of their willingness or desire to do so.

The ACCC 2021 consumer survey found that while almost all respondents reported that they were aware of Google Search (96%) and Chrome (95%), awareness of alternative suppliers with unique features was considerably lower,¹³ with less than a third of respondents being aware of privacy-focused search engine and mobile browser DuckDuckGo (30% and 25% respectively).¹⁴ This is despite the ACCC 2021 consumer survey finding that most consumers (70%) reported that they are concerned about the collection of data and personal information by browsers and search engines.¹⁵

A lack of awareness of alternative suppliers may be further hampered by a lack of digital literacy. The findings of the ACCC 2021 consumer survey suggest that just over a third of consumers know how search engines rank results, and approximately half do not know how search engines or browsers make money.¹⁶ While a higher proportion of consumers self-reported knowing that the address bar in a browser uses a search engine to search (90%),¹⁷ a recent study by Professor Pinar Akman (2021) suggests that this may not be the case in practice, with some consumers not knowing the difference between browsers or search engines.¹⁸

To assist consumers in making meaningful choices about their use of digital services, including browsers and search engine services, the ACCC recommends initiatives aimed at improving digital literacy for consumers.

Potential measure: improved digital literacy for consumers

The ACCC continues to support the DPI Final Report's recommendations for improved digital media literacy in the community and in schools (recommendations 12 and 13). These recommendations should be expanded to include digital literacy of platforms, including information about how platforms operate and use consumer data, information about alternative service providers and the ability to switch to alternative browsers and search engines, and how to use platforms safely (such as how to avoid scams occurring on platforms, and information about dark patterns).

¹² Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 53.

¹³ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 30, 57.

¹⁴ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 30, 57.

¹⁵ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 18.

¹⁶ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 31, 58, 59.

¹⁷ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 17, 31.

¹⁸ P Akman, [A Web of Paradoxes: Empirical Evidence on Online Platform Users and Implications for Competition and Regulation in Digital Markets](#) (2021), pp 19-25.

The choice architecture of device ecosystems can exacerbate default biases and harm consumer choice

The strong tendency of consumers to remain with the default or pre-installed service, and the information asymmetry between consumers and providers, is heightened by the choice architecture of search engines and browsers.

Some of the processes required for consumers to change their default browser and pre-set search service are not intuitive, and require a reasonable amount of knowledge on the part of the user. In addition, the ACCC considers that choice architecture can be employed in a way that discourages consumers from making a meaningful choice about the service they use and switching providers. Examples include:

- Platforms presenting options in a way that questions consumers' choice or has negative connotations to discourage switching. For example, the ACCC observed that an advertisement for Edge was displayed when the query 'install Google Chrome' was searched on Bing. The advertisement stated that Microsoft 'recommends' Edge and that users that use Edge will continue to get 'speed, security and privacy'.
- The use of dark patterns, such as friction and forced action, to adversely affect consumer autonomy. For example, during the process of downloading the Ecosia search engine browser extension¹⁹ on Microsoft Edge, the ACCC observed that Microsoft Edge turned off this extension, disabling the choices affirmatively made by consumers. This occurred after a user twice confirmed their decision to add the extension to their browser, and confirmed that the browser extension could access and change certain settings. Such conduct can discourage consumers from switching to alternative providers and make it difficult for consumers to exercise choice.

This can be detrimental to consumers for several reasons. Consumers may remain with browsers or search engines that do not meet their preferences or needs, leading, in some instances, to consumer detriment, such as weak privacy protections or harmful data collection practices. The inability of consumers to exercise meaningful choice, and processes that deter switching to alternative suppliers, also reduces effective competition, including competition on the basis of quality, such as privacy protections or innovative business models. Dark patterns can create obstacles to switching, which further raises barriers to entry and expansion in the supply of search engine services.

The ACCC notes overseas proposals such as the Competition and Markets Authority's (CMA's) Fairness by Design duty for platforms. The ACCC considers that a similar broad, principles-based obligation requiring platforms to present information that is in consumers' best interests should be considered in Australia.²⁰ While this Report has considered choice architecture and dark patterns within the context of browsers and search services, the ACCC considers that these issues are not limited to these services.

¹⁹ Browser extensions can be downloaded and installed on a desktop device to customise the functionality and features of a browser. For example, the Ecosia browser extension sets a users' default search engine to Ecosia, and customises the browser so that new tabs open to the Ecosia homepage.

²⁰ CMA, [Online platforms and digital advertising market study, Appendix Y: choice architecture and Fairness by Design](#), 1 July 2020, p Y41-42; CMA, [Online platforms and digital advertising market study, Final Report](#), 1 July 2020, pp 27, 358.

Potential measure: platforms should design their user interfaces in the best interests of consumers

Platforms should design user interfaces in a way that facilitates consumer choice and respects individual autonomy. For example, platforms should have an obligation to refrain from using dark patterns or designing user interfaces in a way that exploits consumers' behavioural biases and vulnerabilities. This principles-based obligation should apply to all digital platform services operating in Australia and should be subject to oversight by an external body. This will be subject to consultation with the market and further consideration in the fifth interim report of the Digital Platform Services Inquiry, due September 2022.

The ACCC is concerned that conduct of this nature can significantly impede consumer choice and cause harm but may not be captured by existing Australian law. Some instances of dark patterns and negative choice architecture may raise serious concerns where products are designed in a way that is exploitative, or deceptive, and undermines consumer autonomy. There is also international recognition that choice architecture and dark patterns that have the potential to cause consumer harm should be prohibited, where they amount to unfair conduct.

The ACCC considers that the introduction of a prohibition on unfair trading practices in Australia, as advocated in the DPI Final Report, would help address these concerns and would also result in greater alignment between Australia and overseas jurisdictions.

The ACCC recognises that not all instances of dark patterns or negative choice architecture would, or should, amount to an unfair trading practice. The ACCC considers that a prohibition on unfair trading practices should be carefully developed to capture conduct that is particularly harmful to consumers, and significantly impedes consumer choice and autonomy.

Further support for recommendation 21 of the Digital Platforms Inquiry Final Report: prohibition on certain unfair trading practices

The ACCC reiterates its support for the amendment of the *Competition and Consumer Act 2010* to include a prohibition on certain unfair trading practices. The scope of such a prohibition should be carefully developed such that it is sufficiently defined and targeted, with appropriate legal safeguards and guidance.

Measures to address competition and consumer issues in search

Choice screens

In the DPI Final Report, the ACCC recommended that Google provide a choice screen on Android devices for search services and browsers in Australia, as had been proposed by Google for Android devices in the European Economic Area and the UK (the EU Android choice screen). The Australian Government asked that the ACCC monitor the roll out of that choice screen and provide further advice on whether a similar choice screen should be implemented in Australia.

Google voluntarily implemented the EU Android choice screen in 2019, which was intended to improve consumer choice in respect of search engines and browsers, following a decision

by the European Commission (EC).²¹ Since the *DPI Final Report*, there have been a number of iterations of the EU Android choice screen, with the most recent changes implemented in September 2021. This Report primarily focuses on the version of the choice screen active between March 2020 and August 2021, which applies only to a selection of search engines and only to new Android devices.

The ACCC has observed that to date, the EU Android choice screen has had a limited impact on the supply of search services in applicable European countries, both in terms of the level of market concentration and consumer reach. This may be partly due to the design of the EU Android choice screen and its implementation, as well as the effect of COVID-19 on the supply of new Android devices (with significantly lower number of smartphones being sold during the affected period). The ACCC notes, however, that Google's changes to the choice screen (implemented in September 2021) may have a greater effect and the ACCC will continue to monitor any changes to the market following the roll out of these changes.

Broadly, the ACCC considers that choice screens are able to facilitate greater consumer choice and help reduce barriers to expansion in the supply of search services. This is because choice screens assist with addressing default biases and customer inertia, as well as other issues associated with defaults and pre-installation arrangements explored in this Report.

Advice to Government on choice screens

The ACCC recommends the implementation of a mandatory choice screen, in combination with other measures, to improve competition and consumer choice in the supply of search engine services in Australia. This proposal will be subject to consultation with the market and further consideration in the fifth interim report of the Digital Platform Services Inquiry.

Given the ACCC's experience in analysing the supply of search engine services and other digital platform services in Australia and its role as the national competition and consumer agency, it is recommended that the ACCC should be given the power to mandate, develop and implement a choice screen for search services.

However, the design and implementation of the choice screen should be subject to detailed consultation with industry participants and user testing. It should also be proportionate to the competition and consumer choice issues identified in this Report, while minimising any adverse impacts on efficiency and the business models of industry participants. In particular, the design features of the choice screen, the application of the choice screen to relevant service providers, and its interaction with other proposed measures to apply to the market for search services, should be carefully considered.

At this stage, the ACCC considers that there are number of key elements that should be incorporated into a choice screen, and ACCC recommends that a choice screen should:

- apply to both new and existing Android mobile devices and to all search access points on those devices (to address the consequences of the substantial market power and vertical integration of Google in mobile operating systems and search services, and the resulting strategic position it occupies)
- allow search engines to be featured on the choice screen for free, based on an objective measure provided by an independent third party

²¹ Google, [Presenting search app and browser options to Android users in Europe](#), 18 April 2019, accessed 13 September 2021.

- present an optimal number of search engine options to consumers (to be identified by consumer testing), and
- be accessible to users and presented at an appropriate time that would enable considered choice.

Subject to further consideration and user testing, the ACCC should also have the power to mandate the implementation of a search engine choice screen in relation to other devices (e.g. desktop devices) and operating systems (e.g. non-Android mobile devices) and the implementation of a choice screen in relation to browser selection.

The exact criteria to determine which providers would be subject to a direction from the ACCC to implement a choice screen or one of the other measures identified in this Report would need to be developed. However, the ACCC considers that the criteria should be linked to the provider's market power and/or strategic position.

Powers to introduce further measures to improve competition and address recurring issues in the supply of search engine services

Given that the supply of search services in Australia is extremely concentrated with high barriers to entry and expansion, the ACCC considers that choice screens are, on their own, unlikely to significantly improve competition and consumer choice in search.

In addition, the closely connected nature of digital goods and services has led to the formation of digital ecosystems that allow platforms to leverage their strong positions and bargaining power in one service into another, and facilitate practices that keep consumers within these ecosystems, potentially causing detriment to consumers. As discussed previously, Google is dominant in the supply of search engine services, a service that is embedded within device ecosystems alongside other digital services, and used by many consumers daily.

Further potential measures to address competition and consumer issues in the supply of search engine services

To address competition and consumer issues in the supply of search engine services, it is recommended that the ACCC be given powers to implement other measures beyond choice screens to improve competition and consumer choice in the supply of search engine services. Similar to the choice screen, this proposal will be subject to consultation with the market and more detailed consideration in the fifth interim report of the Digital Platform Services Inquiry.

These measures could potentially limit the ability of a search engine provider, which meets the pre-defined criteria, from:

- tying or bundling their supply of search engine services with their supply of other goods or services, and
- paying for certain default positions, subject to further consideration of the likely impacts of this measure on the business models of OEMs and browser suppliers.

The measures could also involve mandating such a provider to:

- provide access to its click-and-query data, and potentially other datasets, subject to extensive consideration of privacy impacts, and careful design and ongoing monitoring to ensure there are no adverse impacts on consumers, and

- when providing syndicated search results to downstream search engines, do so on fair, reasonable and non-discriminatory terms.

These measures could form part of a broader regulatory framework applicable to digital platform markets, and builds on recommendation 3 of the Ad Tech Report. As noted in that report, the ACCC intends to commence consultation regarding potential proposals for broader regulatory reform, including whether such regulatory rules are necessary, appropriate and proportionate, as well as the form of any such rules, in 2022.

The ACCC recognises the important role that enforcement of existing provisions in the *Competition and Consumer Act 2010* (CCA) provides in deterring firms with substantial market power from damaging the competitive process by preventing or deterring rivals, or potential rivals, from competing on their merits.

In this respect, the ACCC is continuing to examine specific allegations made against Google over the course of the Inquiry, under the competition provisions of the CCA, including in relation to the default arrangements between Google and OEMs.

However, the ACCC does not consider that proceedings under existing legislation will be sufficient alone to address the entrenched market power of Google in search services and the consequences of that market power for business users and consumers. Investigations and court proceedings are lengthy and necessarily retrospective, seeking to address harms after they have occurred.

The ACCC considers that new regulatory solutions are required to effectively address the competition concerns that arise in relation to search services. Therefore, it is recommended that the ACCC be given the power to require the introduction of choice screens or other measures to apply to those providers that meet pre-defined criteria linked to their market power and/or strategic position.

Similar to the conclusions reached by the ACCC in relation to ad tech services, the ACCC considers that the conferral of prescribed and specific rule making powers or tools would enable the ACCC to address more effectively systemic issues arising in these markets. It would also provide greater certainty around acceptable market conduct.

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The ACCC will continue to consider these issues as part of the five-year Digital Platform Services Inquiry.

As previously announced, the ACCC considers it necessary to explore whether specific rules are required to apply to digital platform markets more broadly to address the competition and consumer concerns identified in our previous reports. The ACCC intends to do this in our fifth interim report for the Digital Platform Services Inquiry (2020–2025), which is the mid-term report of the 5 year Digital Platform Services Inquiry.

The fifth interim report will focus on competition and consumer issues raised in the course of the Digital Platform Services Inquiry to date, as well as issues raised in the Digital Advertising Services Inquiry and Digital Platforms Inquiry (2017–2019), to the extent they cover digital platforms and factors within the scope of the Digital Platform Services Inquiry. The report will consider whether there is a need for changes to Australia’s existing competition and consumer regulation to address common issues we have identified in our inquiries and if so, what such a regime could include.

That report will also include consideration of regulatory regimes introduced or proposed to be introduced in a number of overseas jurisdictions to address the competition issues

associated with digital platforms. The ACCC recognises the benefits associated with international alignment to industry stakeholders and to Australian consumers and businesses.

The ACCC plans to release a concepts paper in the first quarter of 2022 to seek feedback and inform the fifth interim report.

The fifth interim report is due to the Treasurer by 30 September 2022.

Introduction

This is the third interim report (Report) under the five-year Digital Platform Services Inquiry (the DPSI). It examines the provision of web browsers and general search engine services to Australian consumers. It provides the ACCC's advice to the Government on Google's roll out of a choice screen for search engines on new Android devices in the European Economic Area²² (EEA), and whether a similar choice screen should be implemented in Australia. Further information, including the Ministerial Direction for the DPSI and information about the forthcoming interim reports, can be found [here](#).

The ACCC has previously examined the supply of search engine services in Australia and concluded that Google has significant market power.²³ This has not changed, with Google continuing to hold a dominant position in the supply of general search engine services in Australia. This Report builds on those findings by looking at the expansion of search engine services beyond websites alone, and their increasing integration with services supplied on devices more broadly, including browsers, apps and voice assistants. There are a number of access points through which consumers can access search engine services, particularly on mobile devices, with many of these access points being subject to pre-installation and default arrangements. Among other things, this Report examines the impacts on consumers and competition that are likely to arise from these arrangements.

Other countries have also recognised Google's dominant position in the supply of search engine services through market studies, enforcement action and judicial decisions. Competition authorities, legislative bodies and parliaments around the world are seeking to address the competition and consumer issues arising from the dominant positions that platforms hold across markets, including those for search engine services. Many jurisdictions have proposed rules, or accepted undertakings from platforms, including Google, that seek to improve competition and consumer choice across a number of digital markets, including by prohibiting conduct that further entrenches these platforms' existing market power.

A key area of focus for this Report is the extent to which these and other measures should be applied within an Australian context. As indicated in other reports of the DPSI and the Digital Advertising Services Inquiry, the ACCC considers that enforcement action alone is insufficient to counteract the harms caused by platforms, including Google. Digital platforms, including search engine services, operate globally, and there is an increasing convergence of regulation addressing the market power and dominant positions of digital platforms internationally. Accordingly, the ACCC has taken into account overseas developments when informing its own views in relation to the appropriate regulatory response to address issues identified in the Australian general search engine services market.

In particular, this Report provides the ACCC's advice to the Government as to whether a choice screen should be implemented in Australia, providing consumers with the ability to select their default search service and web browser. In Europe, Google has rolled out a choice screen for search engines on new devices that use the Android operating system. This Report provides an in depth examination of the implementation of this choice screen and its impact on search engine markets in Europe.

This Report builds on the ACCC's previous reports relating to digital platforms, including the first and second interim reports of the DPSI, the *Digital Services Advertising Inquiry Final Report*, and the ACCC's *Digital Platforms Inquiry Final Report*. These issues will be revisited

²² European Economic Area, including the United Kingdom (UK). While the UK officially withdrew from the EU on 31 January 2020 and ceased to be a contracting party to the EEA Agreement from this date, references to the EEA and EEA countries for the purpose of this report should be taken to include the UK.

²³ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 65; ACCC, [Digital Platform Services Inquiry First Interim Report](#), 23 October 2020, p B2.

in the course of the DPSI and, in particular, the fifth interim report of the DPSI to be provided to the Treasurer by 30 September 2022.

1. Overview of device ecosystems, web browsers and search engine services

Key findings

- Google continues to have substantial market power in the supply of general search engine services and search advertising in Australia, with 94% and 97% market shares respectively.
- There are a number of ways for consumers to access search engine services on mobile and desktop devices, including through browsers (navigating directly to a search engine website or entering a search query directly into the address bar), search apps, search widgets and voice assistants.
- Browsers are a key gateway for consumers to access and use internet search engines. Across both desktop and mobile devices, the supply of browsers in Australia is highly concentrated between Google's browser, Chrome, and Apple's browser, Safari. Safari is pre-installed on all mobile and desktop devices supplied by Apple. Chrome is pre-installed on the majority of Android mobile devices.
- Google Search is the default search engine on the two most used browsers in Australia, Chrome and Safari. Google Search is also the default search engine for the voice assistants on iOS and Android mobile devices. It is also pre-installed as a search app and search widget on most Android mobile devices.
- For both mobile and desktop devices, device ecosystems are concentrated among two suppliers: Apple and Google on mobile devices, and Apple and Microsoft on desktop devices. The range of products and services offered by these ecosystem suppliers, and the devices on which these ecosystems are available, continues to grow.
- In practice, there are currently only three browser engines available (an essential piece of software that a browser requires to run), with usage concentrated between Blink and WebKit. Blink and WebKit are owned by Google and Apple respectively, giving them the ability to influence the supply of browsers in Australia. On iOS, all browsers must use the Apple-owned WebKit.

This chapter provides an overview of the way in which search engines operate, are accessed and are used within device ecosystems. In particular, this chapter examines the role of web browsers (browsers) as a gateway to accessing those services within device ecosystems. When a consumer purchases a mobile or desktop device, that device typically comes with an operating system that supports an ecosystem of closely related and interconnected services (device ecosystem). These services include search engines and browsers; browsers enable users to access websites and search for information using a search engine.

This chapter is structured as follows:

- **Section 1.1** updates the ACCC's previous analysis on the market for general search engine services, and considers trends in this market.
- **Section 1.2** describes the ways that consumers can access and use search engines within the device ecosystem.
- **Section 1.3** considers the key suppliers of device ecosystems in Australia, the search access points on those ecosystems and the default search engine pre-set on those search access points.

- **Section 1.4** describes the role of browsers as a gateway to search engine services on devices, and provides an overview of the key suppliers of browsers in Australia.

In addition to desktop and mobile devices, consumers are able to access search engine services on a growing range of connected devices such as smart speakers, smart watches and smart TVs. However, the ACCC understands that consumers continue to primarily access search engine services through mobile and desktop devices, so this chapter and the Report more broadly focus on consumers' use of search engine services on mobile and desktop devices. References in this Report to mobile devices include smartphones and tablets, while references to desktop devices include both laptop and desktop computers.

1.1. The market for general search engine services

The ACCC has previously considered the market for general search in the *Digital Platforms Inquiry Final Report* (DPI Final Report) and the *First Digital Platform Services Inquiry Interim Report* (First DPSI Interim Report). General search engine services provide answers or results to a particular query by searching across the World Wide Web using sophisticated algorithms that provide a ranked list of hyperlinked results.²⁴ Examples of general search engine services available in Australia include Google Search, Bing, Yahoo! and DuckDuckGo.

In contrast to general search engine services, specialised search engine services provide answers or results for sector specific queries, such as accommodation, flights and e-commerce. Amazon, Expedia and eBay are examples of suppliers of specialised search in Australia. The ACCC continues to consider general search engine services as a distinct market to specialised search engine services, due to limited substitutability between the two.²⁵ While this Report focuses on general search, the ACCC will consider the supply of retail search engine services in the forthcoming *Fourth DPSI Interim Report*²⁶, which focuses on general online retail marketplaces. Other specialised search engine services may be subject to examination over the course of the inquiry.

1.1.1. Google continues to have significant market power in the supply of general search engine services

The *DPI Final Report* and subsequent *First DPSI Interim Report* found that Google has substantial market power in the markets for general search and search advertising.²⁷

Given the recent updated market analysis of general search and search advertising in the *First DPSI Interim Report*, the ACCC has not undertaken detailed market analysis for the purposes of this Report. However, publicly available revenue and market share information and information provided to the ACCC confirms that Google continues to have substantial market power in the supply of general search and search advertising in Australia. As at June 2021, Google's share of general search engine services on mobile and desktop devices in Australia is 94%.²⁸ Google's market share of search advertising in Australia in 2020 was 97%.²⁹

²⁴ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 41.

²⁵ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, pp 41, 64; ACCC, [Digital Platform Services Inquiry First Interim Report](#), 23 October 2020, p B1.

²⁶ ACCC, [Digital Platform Services Inquiry Fourth Interim Report – Issues Paper](#), 22 July 2021.

²⁷ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, pp 58, 64; ACCC, [Digital Platform Services Inquiry First Interim Report](#), 23 October 2020, p B1.

²⁸ Statcounter, [Search engine market share Australia June 2020 - June 2021](#).

²⁹ Information provided to the ACCC. The ACCC notes that this market share figure is the ACCC's best estimate, based on information from a number of sources. Where the ACCC has requested information from firms on advertising revenue, it has done so on the basis of the revenue received from advertisers in Australia. This may include some portion of expenditure that is spent by Australian advertisers targeted at users located outside Australia. Conversely, it does not

The *First DPSI Interim Report* noted significant growth in privacy-focused search engine DuckDuckGo's traffic between June 2019 and June 2020, growing 61% to 62.9 million daily average searches globally.³⁰ This trend has continued to June 2021, with global search traffic rising a further 51% to almost 95 million daily average searches.³¹ Additionally, 'social business' search engine Ecosia (which uses the majority of its profits to plant trees) was added to the list of default search engine options in Google Chrome in early 2020, reflecting its steady growth in recent years.³² These developments do indicate growing awareness of alternative search engines. However, the ACCC notes that estimates of their usage in Australia remain very low, with DuckDuckGo's market share at 0.86% and Ecosia's at 0.21% in June 2021.³³

1.2. Search engines within the device ecosystem

There are a number of search access points through which consumers can access search engines on their devices. The operating system and/or device manufacturer determine the services and functionalities available on a particular device, including the search access points. While the features of a device ecosystem (including available search access points) vary depending on the device, there are several core elements of a device ecosystem that are offered on every device, as set out below.

1.2.1. Overview of device ecosystems

When a consumer purchases a mobile or desktop device, it typically comes with an operating system installed that provides the user with a functional interface and supports programs and applications on the device.³⁴ Device manufacturers pre-install the operating system on the device. In some cases, the device manufacturer own the operating system that it pre-installs on devices. For example, Apple installs its own operating system on its iPhones and MacBooks. In other cases, device manufacturers install third party operating systems on their devices, which are licensed through various arrangements (both monetary and non-monetary). These arrangements and the business models of operating system suppliers are explored further in chapter 3.

Various pre-installed programs and applications in the device ecosystem allow users to access a range of functionalities upon device setup, including the ability to access search engine services using a pre-installed browser. Typically:

- an operating system has at least one web browser that is available to the user upon device setup (pre-installed browser)
- a pre-installed web browser is set as the operating system's default browser, which is the browser that automatically opens when a user clicks a hyperlink within the device ecosystem, such as from an email or message

include expenditure by advertisers located overseas that is targeted at users in Australia. As with all estimates, there is a potential that this may under or overstate the actual market share of each firm or the total size of the market.

³⁰ ACCC, [Digital Platform Services Inquiry First Interim Report](#), 23 October 2020, pp 3, 15.

³¹ DuckDuckGo, [DuckDuckGo Traffic](#), accessed 13 September 2021.

³² See N Lomas, ['Tree planting search engine Ecosia is getting a visibility boost in Chrome'](#), *TechCrunch*, 12 March 2020, accessed 13 September 2021; Ecosia, ['Ecosia is now a default search engine option in Chrome!'](#), *Ecosia Blog*, 12 March 2020, accessed 13 September 2021; S Van Holsteijn, ['Road to a billion trees: here's how fast Ecosia's search engine is growing'](#), *Global Garland*, 19 December 2020, accessed 13 September 2021.

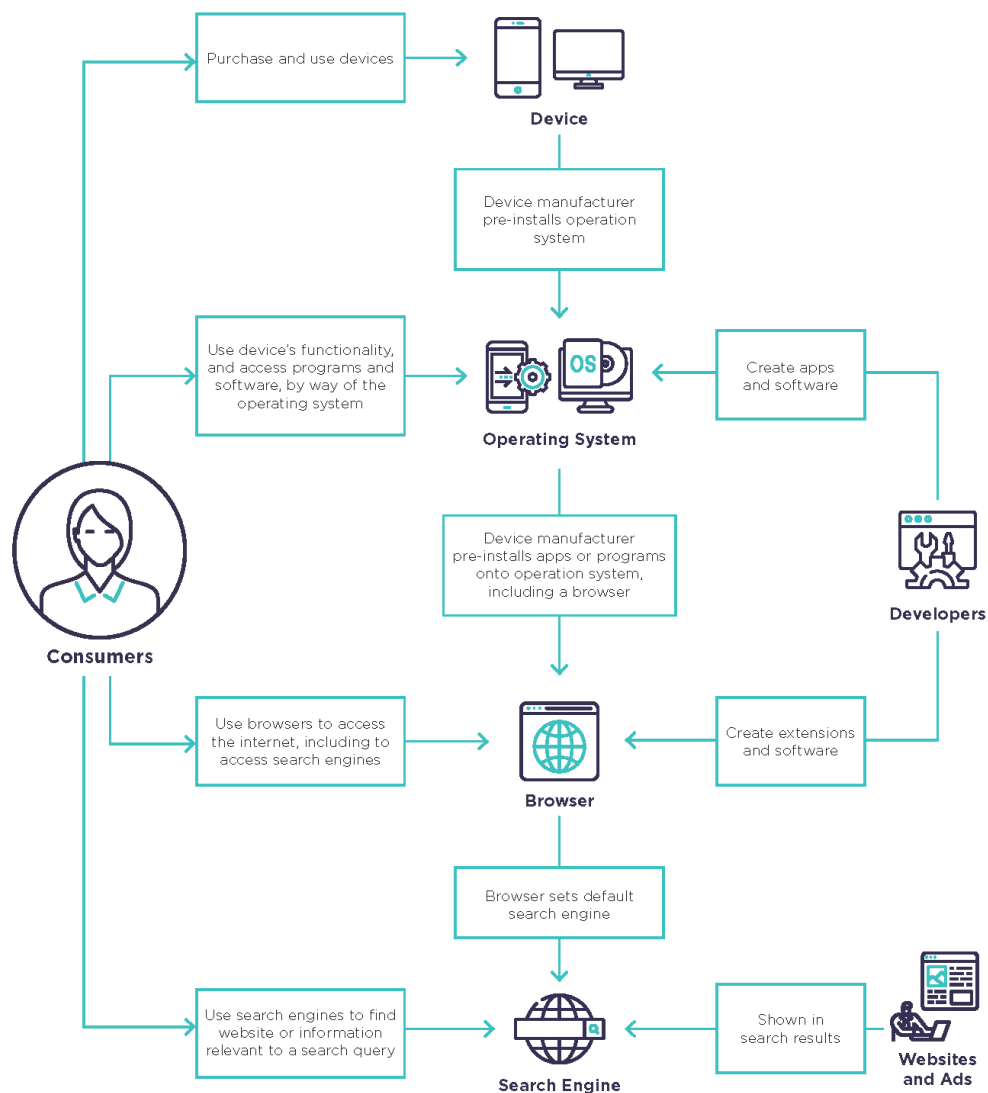
³³ Statcounter, [Search engine market share Australia June 2020 - June 2021](#). The ACCC notes that the nature of DuckDuckGo's privacy protections may limit the ability of Statcounter to accurately measure its usage and subsequently its market share. DuckDuckGo submit that *'Statcounter uses a tracking code to create its market share reports, which DuckDuckGo's mobile browser and browser extensions block to protect user privacy. As a result, Statcounter's reports dramatically understate DuckDuckGo's market share.'* See DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, pp 4, 82.

³⁴ ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, pp 19–20.

- web browsers have a search engine pre-set as the default (pre-set search engine), which is the search engine automatically used when a query is typed into the browser's address bar. It remains the default unless proactively changed by the user
- where a user has not changed a browser's default search engine, opening a new browser tab may also display the website of the pre-set search engine.

A simplified version of the device ecosystem and its components are set out below in figure 1.1.

Figure 1.1: Components of the device ecosystem, including browsers and search engines

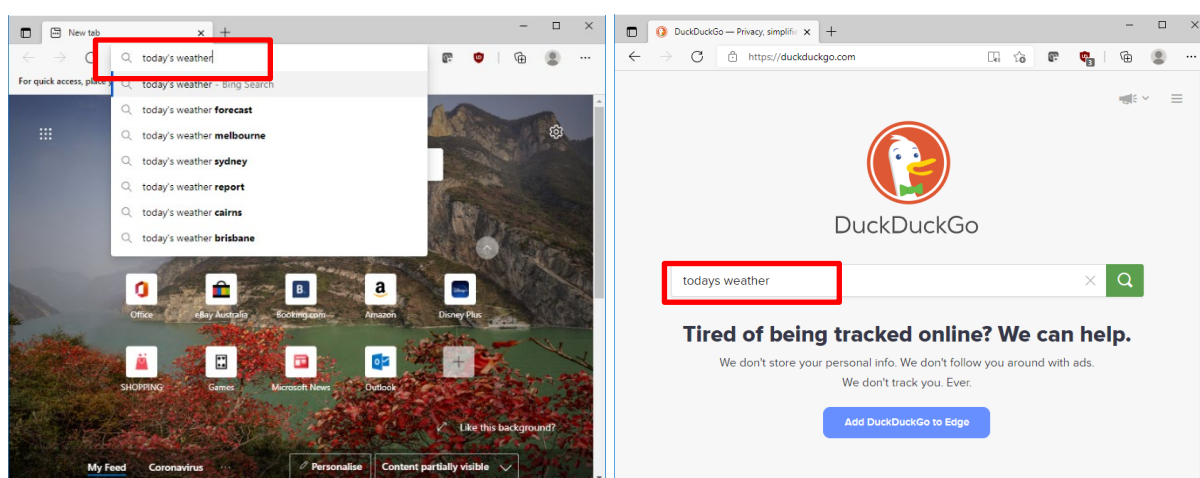


Source: ACCC information.

1.2.2. How consumers access search engines in the device ecosystem

Browsers are a key way that consumers access search engines within the device ecosystem. Consumers can search for information on a browser by typing a query in the browser's address bar, or by navigating to a particular search engine's website and entering a query in the search box on the web page of the search engine (both of which are illustrated in figure 1.2). Where a consumer types a query in the address bar of the browser, the browser's pre-set search engine is used. In May 2021, Roy Morgan research conducted an online survey of 2,647 Australians on consumers' use and understanding of search engine services and browsers, commissioned by the ACCC (ACCC 2021 consumer survey).³⁵ For respondents to this survey, the most popular way to search on both mobile and desktop devices is by typing a query in the address bar of a browser.³⁶

Figure 1.2: Accessing search engines via a browser (including by searching in the address bar and navigating to a search engine website)



Source: Screenshots of address bar search and DuckDuckGo website search in Microsoft Edge captured on Acer Spin 7 laptop running Windows 10 Pro by ACCC on 12 July 2021.

In addition to accessing search engines through a browser address bar or navigating to a website, other search access points include:

- search apps and widgets (a search bar appearing on the device home screen) on mobile devices, which are associated with a particular search engine (for example, the Google Search app and Google Search bar on Android devices)
- browser extensions on desktop devices, which are downloaded by the user and can add additional functionalities to a browser which may include (among other things) changing the default search engine of the browser
- voice assistants on mobile and desktop devices, which allow users to conduct a search from a voice query (as discussed further in box 1.1, the volume of these searches remains low, but has grown over time).

³⁵ The survey was commissioned from Roy Morgan and conducted online in May 2021 with 2,647 respondents. Respondents were Australians over the age of 18 years who owned or were the main user of both a mobile phone and personal computer (laptop or desktop), and were able to access the internet from both of these devices. If a respondent was not the owner but the main user of a device, they had to have control over the device's browsers and search engines. The survey was conducted as a 'self-completion' survey by respondents online, meaning all responses are self-reported. Where the survey refers to 'smartphone' / 'personal computer', this Report may refer to 'mobile device' / 'desktop device'. Further information is available at Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021.

³⁶ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 23.

These search access points, including what devices they are available on and how they are used, are summarised in Table 1.1, which includes the proportion of respondents that reported using each access point as their main way of accessing search engine services in the ACCC 2021 consumer survey.³⁷ Table 1.1 also indicates whether the search access point is generally pre-installed on devices, and whether that access point has a pre-set search engine. However, as discussed further in chapter 2, consumers may not always be able to change a search access point's default search engine.

Table 1.1: Search access points on mobile and desktop devices and findings on usage from ACCC 2021 consumer survey

Search access point	Available on Mobile	Main search access point on mobiles (% of surveyed respondents)	Available on Desktop	Main search access point on desktops (% of surveyed respondents) [#]	Pre-installed on mobile and/or desktop device?	Pre-set search engine on mobile and/or desktop search access point?	
Browser	<i>Type query into address bar</i>	✓	44%	✓	61%	✓	✓
	<i>Visit search engine website and enter query in search box</i>	✓	25% [^]	✓	9%		
	<i>Enter search query on search engine website set as browser homepage</i>	- [^]	- [^]		26%		
Search app	✓	11%	✗	-	✓	✓	
Search widget	✓	13%	✗	-	✓	✓	
Browser extension	✓ [*]	-	✓	3%	-	✓	
Voice assistant	✓	5%	✓	1%	✓	✓	

[#] Respondents were not asked their preferred method of searching the internet on their computer, however this can be **approximated** by using the answer to the question, 'How do you access information on the internet on your computer?' and selecting only those respondents who identified a single method. The percentages in this column refer to those responses.

^{*} Browser extensions are available on some mobile browsers, including Samsung Internet (see Samsung Developers, [Samsung Internet Extensions, Extension Development Guide](#), accessed 13 September 2021). However, extensions are not currently available on Safari or Chrome on mobile devices, which account for 89% of mobile browser usage in Australia (as at June 2021). Accordingly, respondents in the ACCC 2021 consumer survey were not asked about browser extension usage on smartphones. The ACCC notes that Apple has announced it intends for Safari to support browser extensions in late 2021 (see S Shankland, '[Safari's getting mobile browser extensions before Chrome, and that's a big deal](#)', *CNET*, 11 June 2021, accessed 13 September 2021).

[^]The ACCC understands that not all mobile browsers have, or support, a website being set as the browser's home page. For this reason, the ACCC 2021 consumer survey did not make a distinction between accessing a search engine's website on a smartphone by manually navigating to the website and having the website set as the mobile browser homepage.

In its submission to the Issues Paper, Google provided the results of a 2019 survey that asked consumers about their use of web browsers and search engines. Consistent with the ACCC 2021 consumer survey, the most common way that respondents to Google's survey reported performing a search was through the address bar of their browser (35%).³⁸ A

³⁷ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 23.

³⁸ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 34.

further 26% most often used the home screen widget, 22% most often used a search app and 16% navigated to a search engine website.³⁹ We note that this survey was conducted among users of Android devices only, with this particular question answered by 346 respondents.

As noted in table 1.1, the ACCC 2021 consumer survey found that only a very small portion of consumers reported using a voice assistant as their main way of accessing search engine services on all devices. However, although the overall volume of voice search remains small relative to text search, the number of voice searches has been growing over time (discussed further in box 1.1).

Box 1.1: The volume of searches conducted on voice assistants has grown over time

The ACCC observed the growing prevalence of voice assistant technology in both the *DPI Final Report* and *First DPSI Interim Report*.⁴⁰ Globally, current trends indicate that there will be 8.4 billion digital voice assistants being used on devices by 2024.⁴¹ Google's internal analysis confirms this development, stating that voice search is an important emerging access point, with the likelihood of search queries being conducted using a voice assistant increasing.⁴²

Despite this growth, evidence suggests that voice searches are currently a low proportion of total general search queries. The UK's Competition and Markets Authority (CMA) found that voice search only accounted for 0–5% of both Google and Bing's total text-based queries received in December 2019, which they observed was 'very small' when compared to traditional text general search.⁴³ This is consistent with the ACCC 2021 consumer survey results, which showed that only a very small proportion of users consider voice search to be the main way they access search engine services (see Table 1.1).

1.3. Apple, Google and Microsoft are the primary suppliers of device ecosystems

In Australia, the supply of mobile and desktop device ecosystems are each concentrated between 2 suppliers. For mobile devices, this is Apple and Google; for desktop devices, this is Apple and Microsoft. While these 3 ecosystems all have similar search access points, the pre-set or pre-installed services offered vary, as set out in section 1.3.3.

1.3.1. Mobile device ecosystems are concentrated among Apple and Google

Apple (with iOS) and Google (with Android) dominate the Australian market for mobile operating systems, accounting for roughly half of this market each.⁴⁴ As illustrated in

³⁹ Four surveys were conducted by AMC Economics and Compass Lexecon in September 2019. The surveys were conducted among Android users in Australia using Google Surveys, which allow consumers to answer survey questions in exchange for access to content (such as online news, reference, entertainment and consumer sites) rather than charging consumers for that content. See Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, pp 30-31, 34.

⁴⁰ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, pp 511-512; ACCC, [Digital Platform Services Inquiry First Interim Report](#), 23 October 2020, p 86.

⁴¹ C Sun et al, [The Effect of Voice AI on Consumer Purchase and Search Behavior](#), *NYU Stern School of Business* (2019), p 2.

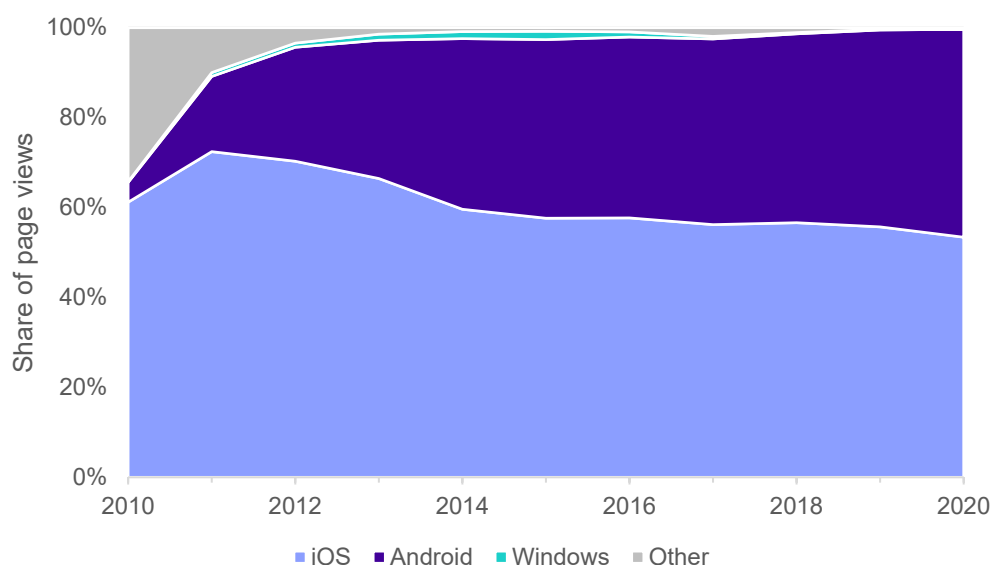
⁴² *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, para 141.

⁴³ CMA, [Online platforms and digital advertising market study, Appendix C: market outcomes](#), 1 July 2020, pp C21-C22.

⁴⁴ See Statcounter, [Mobile Operating system market share Australia June 2020 - June 2021](#); Statcounter, [Mobile operating system market share worldwide June 2020 - June 2021](#); ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, p 4.

figure 1.3, Apple and Google have together accounted for the majority of the Australian market for close to a decade.

Figure 1.3: Mobile operating systems in Australia



Source: Statcounter GlobalStats

Apple and Google also dominate the global market for mobile operating systems, together constituting close to 100% market share.⁴⁵ However, Apple has a relatively higher penetration of mobile operating systems in Australia compared to overseas. While Apple's iOS accounts for roughly half of mobile operating systems in Australia, this share has consistently remained closer to around one quarter globally.⁴⁶

As noted in the *Second DPSI Interim Report*, Apple's iOS is a closed source and non-licensable operating system, which means it is only available on Apple's mobile devices and cannot be installed on third party mobile devices. In addition, non-iOS operating systems cannot be installed on Apple mobile devices.⁴⁷

In contrast, Google's Android is open source and licensable, which means the operating system's source code is freely available and can be accessed and modified for use on any device.⁴⁸ In practice, while the code is available to be accessed, use of Android on third party devices is generally subject to agreements that prevent modifications to the Android operating system and impose certain requirements, as discussed further in chapter 3. Where an Android device manufacturer wishes to pre-install the Google Play Store, they are required to pre-install the full collection of GMS apps.⁴⁹ As such, all mobile devices manufactured by Google and most, if not all, devices manufactured by third parties in Australia that use the Android operating system come with GMS apps pre-installed. These

⁴⁵ Statcounter, [Mobile operating system market share worldwide June 2020 - June 2021](#).

⁴⁶ Statcounter, [Mobile operating system market share worldwide Jan 2020 - Jan 2021](#).

⁴⁷ ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, p 20.

⁴⁸ ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, pp 20–21. However, as noted in the *Second DPSI Interim Report*, Google maintains anti-forking agreements (in the form of Anti-Fragmentation Agreements or Android Compatibility Commitments) across the majority of Android devices which in effect prohibit the distribution of modified versions of Android and versions of Android that do not comply with particular standards imposed by Google. See ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, pp 25–26.

⁴⁹ Google Mobile Services refers to a collection of Google apps, including Google Search, Google Chrome, YouTube, and the Play Store, that support functionality across Android devices. In order to pre-install Google Mobile Services, Google requires device manufacturers to sign a Mobile Application Distribution Agreement (MADA). ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, pp 25–26, 61, 130.

agreements and requirements (discussed in more detail in chapter 3) influence the search access points available, the way in which those search access points may be presented, the web browsers pre-installed and the search engines pre-set as defaults. Accordingly, where this Report refers to pre-installation and default arrangements on Android devices, it refers to devices with GMS.

As shown in figure 1.3, Android is the leading supplier of non-Apple operating systems on smartphones in Australia. Android represents over 95% of licensable mobile operating systems for smartphones and tablets in the United States⁵⁰ and the ACCC estimates that it represents at least 98% of licensable mobile operating systems in Australia.⁵¹ Android is available on a range of devices in Australia including, for example, smartphones manufactured by Samsung, Oppo and Huawei.

Mobile device ecosystems have an important and growing influence over the way in which consumers access the internet, including how consumers access search engine services. As noted in the *Second DPSI Interim Report*, the range of products and services now provided by apps is extensive, including social media, games, entertainment, health and fitness, food delivery and transport.⁵² As the range of functions and tasks that a mobile device can perform has grown, it is unsurprising that consumers have also increasingly used them to access search engine services (see box 1.2).

The central role of mobile device ecosystems in consumers' lives is expected to increase as digital platforms increasingly create and expand the range of products and services that interoperate with each other.⁵³ Connected devices that use Internet of Things (IoT) technology (such as smart speakers, smart watches, fitness trackers and smart appliances)⁵⁴ are generally controlled by or interact with a mobile app. With consumer research finding continued growth in take-up of connected devices in Australia⁵⁵, there is a heightened potential for consumers to be locked into these mobile ecosystems (as discussed in chapter 2).

Box 1.2: Use of search on mobile devices continues to grow

Globally, as smartphones have become more ubiquitous in consumers' lives, the proportion of searches conducted on mobile devices is substantial and continues to grow. Between 2012 and 2016, the percentage of Google search queries carried out worldwide on smart mobile devices grew from between 20–30% to between 50–60%.⁵⁶ Google has reported that since 2015, more general search queries are undertaken on smart mobile devices than on personal computer devices.⁵⁷

Similarly, there appears to be a growing consumer preference for accessing search on mobile rather than desktop devices in Australia. The 2020 Deloitte Digital Survey found that the preferred device overall amongst respondents was a phone, marking a change from 'laptop' in the 2019 survey.⁵⁸ However, there were variations in the responses of sub-groups within the surveyed population. For example, though younger consumers (aged 18 to 44) reportedly preferred to use mobile devices to access search, respondents over

⁵⁰ *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, para 64.

⁵¹ Based on Statcounter Android market share data for June 2021, as a percentage of total market shares excluding iOS. See Statcounter, [Mobile operating system market share worldwide June 2020 - June 2021](#).

⁵² ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, p 17.

⁵³ ACCC, [Digital Platform Services Inquiry First Interim Report](#), 23 October 2020, p 82.

⁵⁴ ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, pp 18-19, 82.

⁵⁵ ACCC, [Digital Platform Services Inquiry First Interim Report](#), 23 October 2020, p 86.

⁵⁶ European Commission, Commission Decision, [Case AT.40099 – Google Android](#), 18 July 2018, para 777.

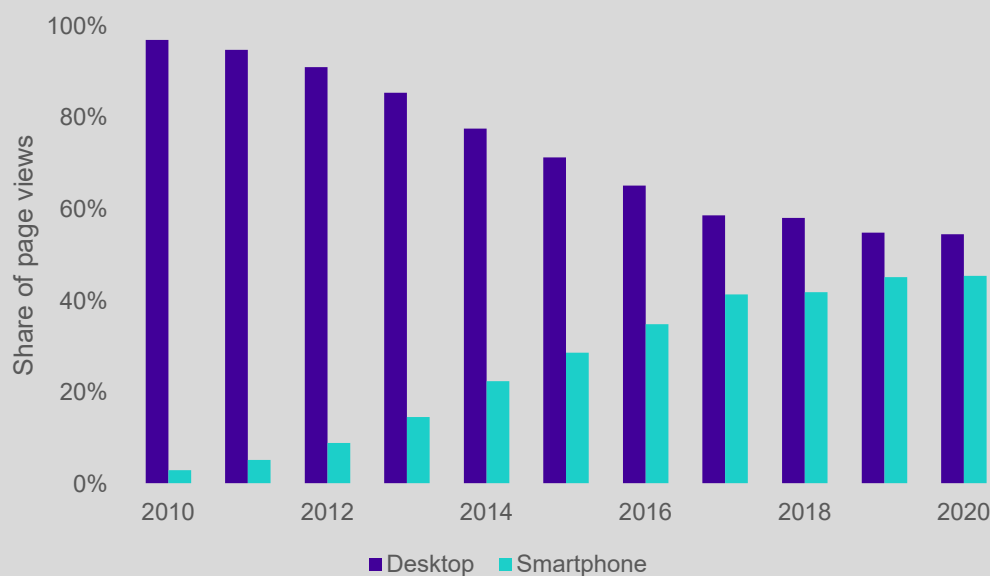
⁵⁷ European Commission, Commission Decision, [Case AT.40099 – Google Android](#), 18 July 2018, para 777.

⁵⁸ Deloitte Australia, [Digital Consumer Trends 2020 – Unlocking lockdown](#), 2020, p 18.

the age of 45 still preferred to use a laptop or computer.⁵⁹ Information provided to the ACCC shows that the majority of all searches conducted via Google by Australian users in 2020 were on mobile devices.⁶⁰

A preference to use phones for search reflects a broader trend confirmed by research undertaken by the Australian Communications and Media Authority (ACMA) that consumers are increasingly favouring their mobile devices for general internet access.⁶¹ The significant growth in use of smartphones in Australia over the last decade is illustrated in figure 1.4, which shows the proportional split of web page visits tracked by Statcounter on smartphones and desktop devices. In 2020, 45% of those page views were on a smartphone.

Figure 1.4: Desktop device and smartphone web page views in Australia



Source: Statcounter GlobalStats

1.3.2. Desktop device ecosystems are concentrated among Apple and Microsoft

Together, Apple and Microsoft account for the majority of the supply of desktop operating systems in Australia (see figure 1.5 below). As at June 2021, Microsoft's Windows made up almost two thirds (63%) of all desktop operating systems in Australia, while Apple's macOS accounts for the remaining third (31%).⁶² The third most used desktop operating system, Linux, accounts for just 1.5%.

Google's desktop operating system Chrome OS is pre-installed (and only available on) Google's first party desktop devices, Chromebooks. Chrome OS accounts for about 1% of desktop operating systems in Australia.⁶³

⁵⁹ Deloitte Australia, [Digital Consumer Trends 2020 – Unlocking lockdown](#), 2020, p 18.

⁶⁰ Information provided to the ACCC.

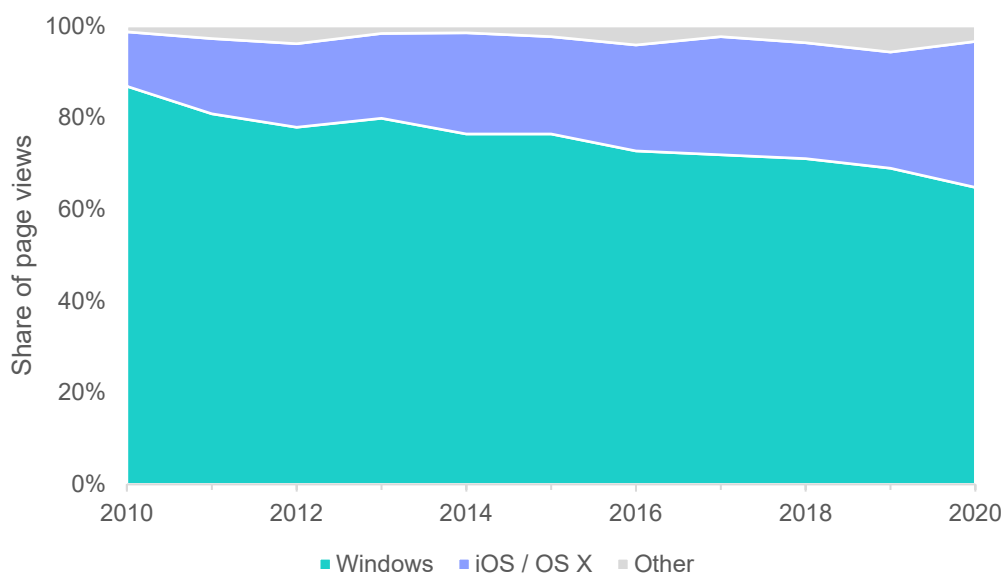
⁶¹ The September 2020 ACMA survey found that 91% of respondents reported their mobile phone as their most frequently used device to access the internet in the last 6 months, a statistically significant increase from 87% the previous year. See ACMA, [Trends in online behaviour and technology usage: ACMA consumer survey 2020](#), September 2020, p 4.

⁶² Statcounter, [Desktop operating system market share Australia June 2020 - June 2021](#).

⁶³ See Google, [Meet Chrome OS](#), Chromebook, accessed 13 September 2021; Statcounter, [Desktop Operating System market share Australia June 2020 - June 2021](#).

Like Apple's iOS on mobile devices, macOS is a closed source and non-licensable operating system, only available on Apple's Mac desktop devices (including the MacBook, iMac, Mac Pro and Mac Mini).⁶⁴ Windows is closed source but licensable, making it available on both first party desktop devices manufactured by Microsoft (such as Microsoft's Surface Books) and third party devices (such as devices manufactured by Lenovo, HP and Dell).⁶⁵

Figure 1.5: Desktop operating systems in Australia



Source: Statcounter GlobalStats

The key components of mobile and desktop device ecosystems are similar. However, as set out in box 1.3, there are important differences in the way that mobile and desktop device ecosystems operate. This has implications for competition in a number of markets across each device type.

Box 1.3: Mobile vs desktop device ecosystems

In relation to mobile device ecosystems, the *Second DPSI Interim Report* noted that 'competition occurs, or can occur, at two levels. At one level there is competition between mobile ecosystems. At another level there is competition within Apple and Google's mobile ecosystems.'⁶⁶

Competition within Apple and Google's mobile ecosystems can include, among other things, competition for app distribution on the respective operating system. In the *Second DPSI Interim Report*, the ACCC found that because the Apple App Store and Google Play Store are critical gateways through which developers are able to supply mobile apps for iOS and Android mobile devices, Apple and Google have market power in mobile app distribution in Australia which is likely significant.⁶⁷ The *Second DPSI Interim Report*

⁶⁴ D Secor, [Open vs. Closed Source Operating System](#), *Techwalla*, accessed 13 September 2021; C Pollette, [10 Differences between Macs and PCs](#), *Howstuffworks*, 10 June 2021, accessed 13 September 2021.

⁶⁵ R Cameron, [The Rise of Surface: Microsoft's Play at First Party Devices](#), *Mobile Mentor*, 17 November 2020, accessed 13 September 2021; Dell, [Windows Operating Systems](#), accessed 13 September 2021; Lenovo, [Operating Systems](#), accessed 13 September 2021; HP, [HP PCs and Printers - Which Windows Operating System Version Do I Have?](#), accessed 13 September 2021.

⁶⁶ ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, p 5.

⁶⁷ ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, pp 4, 43.

identified various practices and policies of Apple and Google that restrict competition to distribute apps within their respective mobile ecosystems.

In contrast to mobile device ecosystems, the distribution of software on desktop device ecosystems is considerably more decentralised. For example, developers may be able to supply desktop software and applications to consumers through their own website or through a third party store (virtual or physical), in addition to or instead of an app store tied to the desktop operating system.

This relatively more ‘open’ nature of desktop device ecosystems is one reason that consumers tend to be less sticky with regard to pre-installation and defaults on desktop devices than mobile devices, as discussed in chapter 2.

1.3.3. Pre-installed search access points and pre-set search engines on Apple, Google and Microsoft devices

The search access points pre-installed on the leading mobile and desktop device operating systems and their pre-set search engines are set out below in Table 1.2 and Table 1.3 respectively.

Google Search is the pre-set search engine for all search access points on iOS, macOS and most Android operating systems (though Bing was the pre-set search engine used by Apple’s voice assistant Siri prior to 2017).⁶⁸ Bing is the pre-set search engine for search access points on Windows devices.

Table 1.2: Pre-installed search access points on Apple and Android mobile devices

Search access point	Pre-installed on iOS	Pre-installed on Android	Pre-set search engine
Browser	Safari	Chrome (on Samsung Android devices, also Samsung Internet)	Google Search
Voice assistant	Siri	Google Assistant	Google Search
Search app		Google	Google Search
Search widget		Google Search Bar	Google Search

Source: Based on ACCC information

⁶⁸ M Panzarino, ‘[Apple Switches from Bing to Google for Siri web search results on iOS and Spotlight on Mac](#)’, *TechCrunch*, 26 September 2017, accessed 13 September 2021.

Table 1.3: Pre-installed search access points on Microsoft and Apple desktop devices

Search access point	Windows		macOS	
	Pre-installed	Pre-set search engine	Pre-installed	Pre-set search engine
Browser	Edge and/or Internet Explorer ⁶⁹	Bing	Safari	Google Search ⁷⁰
Voice assistant	Cortana ⁷¹	Bing	Siri	Google Search

Source: Based on ACCC information

On both desktop and mobile devices, users are able to change the pre-set search engine on their web browser to an alternative default search engine. Default search engine options available in different browsers are set out below in section 1.4, and the various processes to change default search engines are discussed in chapter 2.

For other search access points, users may not be able to change or remove defaults. For example, the default search engine in Apple and Google’s voice assistants cannot be changed, and the Google Search app and widget on Google Pixel mobile devices cannot be deleted. These limitations on changing or removing defaults are set out in more detail in chapter 2.

1.4. Browsers as a gateway to search in the device ecosystem

As noted above, typing a query in a browser’s address bar is the main way that many consumers search for information online. Consumers can also use a browser to search online by navigating to a search engine’s website, and a default search engine website may also appear as a homepage when a new window or tab is opened. These default arrangements have become a primary revenue source for many independent browsers, such as Firefox, as discussed in chapter 3.

1.4.1. Google’s Chrome and Apple’s Safari are the most widely used browsers in Australia

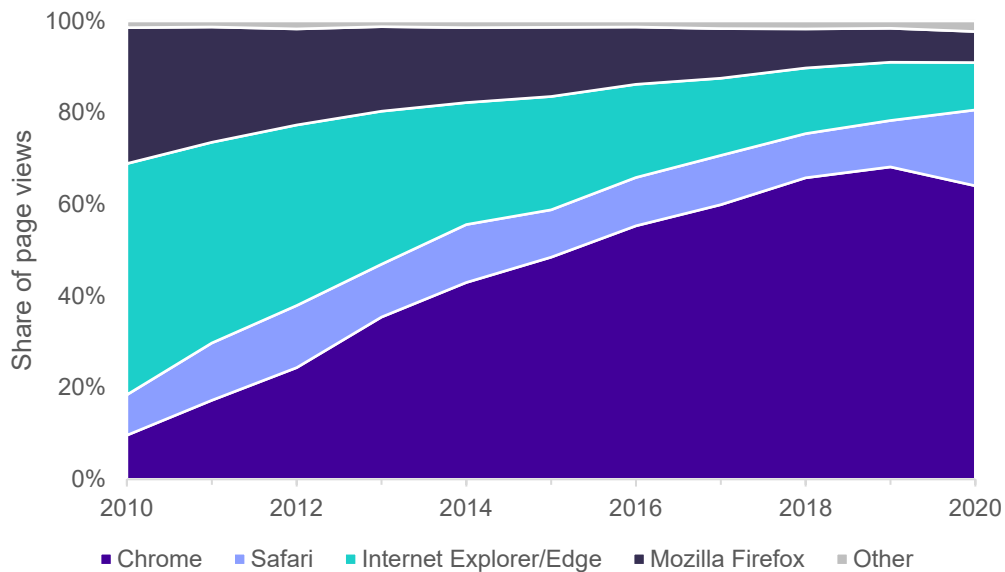
On both mobile and desktop devices, Google and Apple own the leading browsers in Australia, as shown in the figures below.

⁶⁹ The ACCC understands that Edge and Internet Explorer are both pre-installed on desktop devices running Windows 10 (released in 2015) or later, and Edge is pre-set as the default browser. For older versions of Windows, Internet Explorer is the pre-installed default browser. Microsoft has announced that devices running the forthcoming Windows 11 (expected to be available from October 2021) will not support Internet Explorer, and Edge will be the pre-installed default browser. See T Warren, ‘[Windows 11 is deleting Internet Explorer](#)’, *The Verge*, 25 June 2021, accessed 13 September 2021.

⁷⁰ This default arrangement does not apply to Safari users in China.

⁷¹ Cortana may be integrated into the desktop operating system, or run as a standalone software application depending on the version of Windows being used. See P Gralla, ‘[4 quick tips for Cortana in Windows 10](#)’, *Computer World*, 6 September 2021, accessed 13 September 2021.

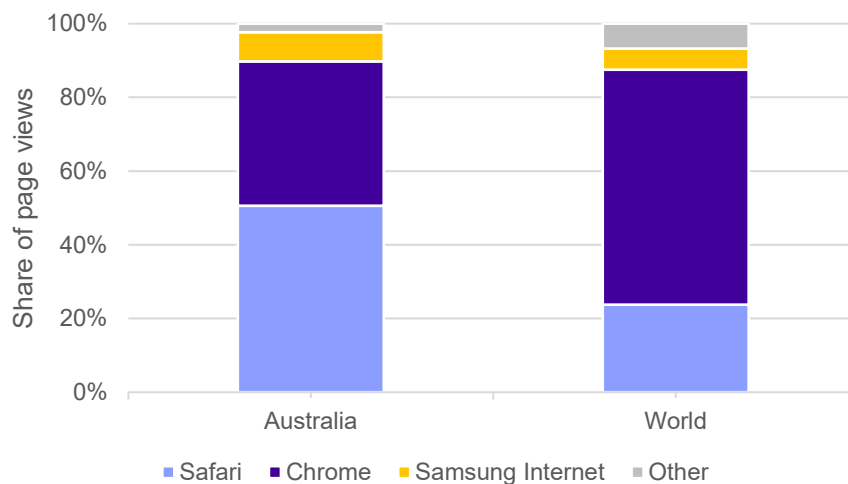
Figure 1.6: Browsers on desktop devices in Australia



Source: Statcounter GlobalStats

In Australia, as at June 2021, Google’s Chrome and Apple’s Safari browser have a combined share of over 81% on desktop and over 89% on mobile.⁷² As shown in figure 1.6, the shares of browsers on desktop devices have changed markedly over the last decade in Australia. In 2010, Chrome and Safari had a combined desktop browser market share of only 18%, and Internet Explorer and Mozilla Firefox accounted for over 3 quarters of desktop browser usage.

Figure 1.7: Browsers on smartphones, June 2021



Source: Statcounter GlobalStats

As noted in section 1.3, iOS has much higher relative usage in Australia than other countries. As Safari is pre-installed on iOS devices, this has likely resulted in a higher use of Safari in Australia than in other countries. Figure 1.7 shows that, in Australia, Safari represents 51% of mobile browser usage, compared to 24% worldwide.

⁷² Statcounter, [Desktop Browser market share Australia June 2020 - June 2021](#).

Similarly, Chrome is pre-installed on mobile devices where device manufacturers license the GMS suite of apps, which represents the majority of Android mobile devices (these licensing agreements are discussed further in chapter 3). Chrome is also pre-installed on desktop devices running the Chrome operating system, though this only accounts for an estimated 1% of desktop device operating systems in Australia.

For mobile devices, Samsung Internet represents the third most used browser after Safari and Chrome, accounting for 8% of usage overall. Samsung Internet is only available on Android mobile devices and is pre-installed alongside Chrome on Samsung mobile devices.

Google and Apple also own 2 of the leading 'browser engines', which are a critical component required for browsers to operate, as discussed in box 1.4.

Box 1.4: The supply of browser engines is highly concentrated between Google's Chromium and Apple's WebKit

A 'browser engine' is a critical piece of software that all browsers require to run. Within a browser, the browser engine interprets the code behind a website and presents it in the graphical format that the user sees and interacts with. In this sense, the browser engine could be considered analogous to a translator (translating code to text and images), or a car engine (the most important component of a browser, without which nothing else within a browser can be seen or operate).⁷³

Accordingly, websites must be compatible with browser engines in order to be properly shown in a browser. As noted by Microsoft in its submission to the Issues Paper, users are likely to switch away from a browser if they find websites do not function properly in it.⁷⁴ As such, website developers have an incentive to develop their websites to be compatible with the most widely used browsers and browser engines. Microsoft pointed to this difficulty as a key reason for ceasing to use their own browser engine, Trident, and switching to Google's Blink. Given that Blink powers Chrome, Microsoft could 'dramatically reduce compatibility issues without developers having to do much (if anything) to ensure that their websites developed and tested for Chrome also worked well in Edge.'⁷⁵

There has been a consolidation among browser engines in the last 2 decades. As a result, there are now just 3 main browser engines in the market: WebKit (owned by Apple), Blink (owned by Google) and Gecko (owned by Mozilla).⁷⁶ The vast majority of browsers use Apple's WebKit (Safari on iOS and macOS, and all other browsers provided on iOS operating systems) or Google's Blink (Chrome, as well as Microsoft Edge, Amazon Silk and Opera⁷⁷).

The small number of browser engines available and the concentration of usage among Blink and WebKit has led some stakeholders to express concerns about the impact that the lack of browser engine diversity may have on how consumers use the internet.⁷⁸ Concerns may also be exacerbated by the concentration of the supply of browsers (not just browser engines) and operating systems between Apple and Google. For example:

⁷³ D Nield, '[Which browser engine powers your web browsing, and why does it matter?](#)', *Gizmodo*, 9 December 2020, accessed 13 September 2021.

⁷⁴ Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 2.

⁷⁵ Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 3.

⁷⁶ Mozilla, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 May 2021, p 8.

⁷⁷ Subcommittee on Antitrust, Commercial and Administrative Law of the Committee of the Judiciary, [Investigation of Competition in Digital Markets: Majority Staff Report and Recommendations](#), 6 October 2020, pp 126-129.

⁷⁸ See for example Mozilla, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 May 2021, p 8.

- Apple requires all browsers on iOS to use its own browser engine, WebKit. This has given rise to concerns that innovation is being stifled, including with respect to browser performance, features and privacy and security measures.⁷⁹ Since the browser engine determines certain functionalities and features of a browser, Apple’s requirement to use WebKit in effect restricts ‘every browser installed on iOS [...] to the functionality and features of Safari’, giving users an ‘illusion of choice’ among browsers on iOS.⁸⁰ Further, Mozilla submits that Apple uses certain WebKit APIs (Application Programming Interfaces, which facilitate particular features within a browser) in Safari which is does not make available to third party WebKit developers.⁸¹
- The costs associated with re-building a browser on a required browser engine may discourage browser suppliers from making their browser available on particular operating systems, or delay their entry. For example, Mozilla notes that it did not initially list Firefox (which uses Mozilla’s Gecko browser engine) in the iOS App Store, due to Apple’s requirement that iOS browsers use WebKit. Mozilla submits that after 2 years, it decided to invest the capital to develop a version of Firefox that used WebKit.⁸² Firefox also remains unavailable in the Microsoft App Store (on Windows desktop devices) due to a requirement that browsers in the Microsoft App Store use Blink. Mozilla submits that developing a desktop version of Firefox that uses Blink ‘is impractical when the value of Firefox is in its unique Gecko browser engine.’⁸³

One proposed solution is to prevent operating systems from banning particular browser engines and/or browsers.⁸⁴ However, since the majority of non-iOS browsers are based on Google’s Blink browser engine, the current chair of the HTTP Working Group⁸⁵ Mark Nottingham submits that any requirement for Apple to allow third party browser engines on iOS is likely to result in even greater usage of Google’s Blink and therefore ‘a further concentration of market power by Google’.⁸⁶

Pre-installation of browsers

The pre-installed browsers on the most used desktop and mobile operating systems are summarised above in tables 1.2 and 1.3. Table 1.4 sets out the pre-set search engines on the most used browsers in Australia, and alternative search engines that users may switch to. For some devices and browsers, users are presented with only a limited list of alternative search engines that they can switch to, whereas for other devices and browsers, consumers can switch to any search engine they desire (‘option to add any search engine’).

⁷⁹ See J Allsopp, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 30 July 2021, pp 1 and 5.

⁸⁰ Anonymous, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 18 August 2021, p 6.

⁸¹ Mozilla, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 May 2021, p 11.

⁸² Mozilla, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 May 2021, p 11.

⁸³ Mozilla, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 May 2021, p 10.

⁸⁴ Anonymous, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 18 August 2021, p 10.

⁸⁵ The [HTTP Working Group](#) maintains and develops the Hypertext Transfer Protocol – the core protocol of the web.

⁸⁶ M Nottingham, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 May 2021, p 5.

Table 1.4: Pre-set search engines on browsers and alternative options offered to users

Browser	Pre-set search engine	Alternative default search options for desktop devices	Alternative search options for mobile devices ⁸⁷	
			iOS	Android
Chrome (Google)	Google Search	Bing, Yahoo, DuckDuckGo, Ecosia; in addition, users have the option to add any search engine	Bing, Yahoo, DuckDuckGo, Ecosia	Bing, Yahoo, DuckDuckGo, Ecosia
Safari (Apple)	Google Search	Yahoo, Bing, DuckDuckGo, Ecosia	Yahoo, Bing, DuckDuckGo, Ecosia	N/A
Firefox (Mozilla)	Google Search	Bing, Amazon, Chambers, DuckDuckGo, eBay, Twitter, Wikipedia	Amazon, Bing, DuckDuckGo, Twitter, Wikipedia	Bing, Amazon, DuckDuckGo, Wikipedia; in addition, users have the option to add any search engine
Edge (Microsoft)	Bing (Microsoft)	Yahoo, Google, DuckDuckGo, in addition, users have the option to add any search engine	Google, DuckDuckGo	Google, DuckDuckGo
Samsung Internet	Google Search	N/A	N/A	Yahoo, Bing, DuckDuckGo, Yandex, Seznam, Qwant, StartPage (and another 9 non-English language search engines)

Source: Based on ACCC information

As shown in table 1.4, on mobile devices, consumers can only choose from a pre-defined list of alternative default search engines, with the exception of Firefox on Android mobile devices which allows users to add any search engine. For both Chrome (pre-installed on Android phones) and Safari (pre-installed on iPhones), the pre-defined list of alternative default search engines is the same: Yahoo!, Bing, DuckDuckGo and Ecosia, in addition to Google Search. If users wish to use a search engine on a mobile device that is not in the defined list of default options, they can do so by navigating to the search engines' website in the browser. However, they will not be able to set the search engine as the default search engine service.

On desktop devices, most browsers allow consumers to set any search engine as the default without being limited by an exhaustive list of options. Safari is the exception, which like on mobile, limits consumers' choice to Yahoo!, Bing, DuckDuckGo or Ecosia in addition to Google Search.⁸⁸ Separately, users may also be able to change the default search engine on a desktop browser by downloading a browser extension. In the ACCC 2021 consumer survey, 6% of respondents reported having done this, and it was the main way of searching the internet for approximately half of those respondents (3%).⁸⁹

⁸⁷ The alternative search options available are based on mobile devices using an English language keyboard.

⁸⁸ Computer Hope, [How to change your browser's default search engine](#), 1 February 2021, accessed 13 September 2021.

⁸⁹ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 23, 26.

2. Impact of pre-installed browsers and search engines pre-set as default on consumers

Key findings

- Consumers benefit from having browsers pre-installed and search engines pre-set as defaults on devices. The availability of these services upon initial device set-up provides quick and easy access to essential device functionalities and reduces search costs (such as the time needed to learn how to change services, or identify alternative suppliers). Evidence from the ACCC 2021 consumer survey suggests consumers have a tendency to remain with the pre-installed browser and pre-set search engine, particularly on mobile devices.
- Consumers are generally able to change their default search engine and/or download alternative browsers. However, the processes for changing browsers and/or search engines are not always easy. While some consumers make an informed decision to remain with their pre-installed browser or pre-set search engine, evidence from the ACCC 2021 consumer survey suggests that some consumers may not know how to change their browser or search engine, or even be aware of alternative suppliers. Accordingly, some consumers may remain with the pre-installed browser or pre-set search engine due to default bias and/or information asymmetries.
- Improved digital literacy would benefit consumers and assist them to make more meaningful choices about the digital services they use. The *DPI Final Report's* recommendations 12 and 13 regarding the need for improved digital media literacy in the community and schools should be expanded to include how platforms operate and use consumer data, information about alternative suppliers and how to change to these services, and how to avoid harm occurring on platforms, such as scams.
- The user interfaces of some platforms are designed in ways that appeal to certain behavioural biases and hinder consumer choice. The ACCC has observed the use of dark patterns by some platforms, which make it more difficult for consumers to change their browser or search engine. Platforms should design their user interfaces in a way that facilitates consumer choice and respects individual autonomy.
- Information asymmetries between platforms and consumers make it difficult for consumers to compare, or switch to, alternative suppliers. This may mean that consumers remain with services that offer weaker privacy protections or less innovative offerings, which may, in some instances, result in consumer harm.
- The use of dark patterns by some platforms may raise serious concerns where these undermine consumer autonomy. This further supports the introduction of a prohibition on unfair trading practices as recommended in the *DPI Final Report* (recommendation 21).

This chapter discusses the impacts of pre-installed browsers and pre-set search engines on consumers, including the benefits they provide to consumers as well as potential detriments. This chapter also examines how the use of choice architecture and dark patterns by platforms influences consumer choice and behaviour.

This chapter is structured as follows:

- **Section 2.1** sets out consumers' expectations about device functionality. This section also provides an overview of the benefits to consumers from having web browsers and search engines pre-installed on devices, and search engines pre-set as defaults.

- **Section 2.2** discusses the impact of defaults and pre-installation arrangements on consumers, including the extent of consumer lock-in and information asymmetries. It outlines the processes involved in consumers changing their default search engine, changing to an alternative browser, and making other choices about the search access points used on their device. It also discusses the need for improved digital literacy to increase the ability of consumers to switch, and to assist consumers in making decisions about the browsers or search engines that best meets their needs.
- **Section 2.3** discusses the choice architecture of browsers and search engine services and potential consumer detriments arising from default and pre-installation arrangements and the user interfaces of browsers and search engine services. It also considers the need for platforms to design their user interfaces in the best interests of consumers, and a prohibition on unfair trading practices.

2.1. Consumers expect to be able to access the internet and other key services when using their devices for the first time

The ACCC recognises that consumers generally expect a base level of functionality in a new device. The *Second DPSI Interim Report* noted that this is particularly the case for mobile devices where consumers expect and prefer certain apps to come pre-installed on their devices.⁹⁰ As submitted by the Developers Alliance, consumers ‘overwhelmingly’ expect ‘foundational capabilities (email, browser, search, maps, media players, etc.) to be available even before they access the app stores for the first time.’⁹¹

2.1.1. Consumers can benefit from having browsers and search engine services pre-installed on their devices

Pre-installation and defaults provide consumers with quick and easy access to device functionalities, particularly upon initial device setup. In its submission to the ACCC, Google states that defaults and pre-installation can create a seamless experience for users and reduce friction.⁹² Apple has also previously submitted to the ACCC that it pre-installs certain apps on Apple devices to ‘maximise customer experience’.⁹³ These benefits also apply to desktop devices. The European Commission (EC) has previously acknowledged the value of pre-installed browsers for desktop consumers.⁹⁴

The benefits of pre-installation and defaults to consumers are likely to be strongest for device functions that consumers consider essential, which includes access to the internet and searching for information. The ACCC 2021 consumer survey⁹⁵ found that 90% of consumers reported that they search for information at least once a day on either a mobile or desktop device.⁹⁶ This suggests that many consumers would perceive browser and search engine services to be essential device functions. As shown in figure 2.1, this perception is likely to be particularly strong for younger users (between the ages of 18 and 34) on mobile devices. The fact that approximately 78% of those surveyed reported that not being able to access and search the internet would affect them in a ‘very negative way’ also supports the

⁹⁰ ACCC, [Digital Platforms Services Inquiry Second Interim Report](#), 28 April 2021, p 101.

⁹¹ Developers Alliance, [Submission to the ACCC Digital Platform Services Inquiry](#), 15 April 2021, p 2.

⁹² Google, [Submission to the ACCC Digital Platforms Services Inquiry](#), 7 May 2021, p 8.

⁹³ Apple, [Further submission to the ACCC Digital Platforms Services Inquiry](#), 10 February 2021, p 11.

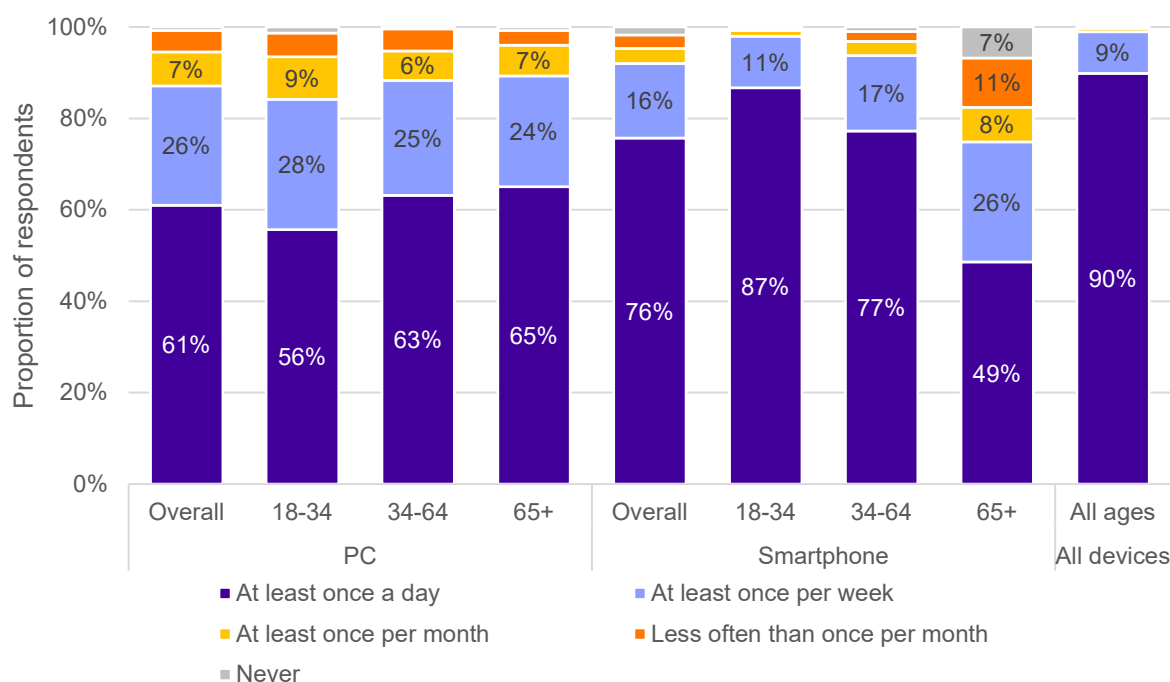
⁹⁴ European Commission, [Antitrust: Commission market tests Microsoft's proposal to ensure consumer choice of web browsers; welcomes further improvements in field of interoperability](#), Press Corner, 7 October 2009, accessed 13 September 2021.

⁹⁵ The ACCC commissioned Roy Morgan Research to conduct an online survey of 2,647 adult Australians who owned, or were the main user of both a mobile device and a desktop device (either a laptop or a desktop computer) and were able to access the internet from both devices. If a respondent was not the owner but the main user of a device, they had to have control over the device's browsers and search engines. Accordingly, this Report refers to such consumers.

⁹⁶ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 22.

conclusion that browser and search engine services are seen by many Australians to be essential device functions.⁹⁷

Figure 2.1: Frequency of searching by respondent’s age and device type



Source: Roy Morgan Research, *Consumer Views and Use of Web Browsers and Search Engines*, September 2021.

One of the key benefits of pre-installed browsers and pre-set search engines is the elimination of search costs (for example, the time needed to identify alternative suppliers or the time needed to learn how to change browsers or search engines). By lowering the costs a consumer would incur from searching, choosing and installing an alternative service⁹⁸ and signalling that a service is a good choice or is recommended by a platform,⁹⁹ pre-installation and default settings may be particularly beneficial for consumers with accessibility issues or low digital literacy skills. As noted in the *DPI Final Report*, consumers with low levels of digital literacy face additional switching costs such as the time taken to learn how to switch.¹⁰⁰ In its submission to the ACCC, the Australian Communications Consumer Action Network (ACCAN) noted the importance of default settings for accessibility and usability, especially for end-users with disability or end-users with low digital literacy skills or confidence.¹⁰¹ Finally, as noted in the *Second DPSI Interim Report*, pre-installation can be particularly helpful for users with limited internet connectivity such as users in remote areas or users with low data internet plans.¹⁰²

⁹⁷ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 26–27.

⁹⁸ C Buhr et al, [The Commission’s decision in the Microsoft Internet Explorer case and recent developments in the area of interoperability](#), *European Commission Competition Policy Newsletter*, 16 December 2009, p 38.

⁹⁹ O Vázquez Duque, [Active Choice vs. Inertia? An Exploratory Analysis of Choice Screens Applied in the European Microsoft Antitrust Case](#), 7 May 2021, p 3.

¹⁰⁰ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 68.

¹⁰¹ Australian Communications Consumer Action Network (ACCAN), [Submission to the Digital Platforms Services Inquiry](#), 15 April 2021, p 1.

¹⁰² ACCC, [Digital Platforms Services Inquiry Second Interim Report](#), 28 April 2021, p 102.

2.2. Effects of default bias and information asymmetries on switching browsers and search engine services

While consumers are generally able to download additional browsers and change a browser's default search engine, as set out below, the ACCC considers that consumers have a tendency to remain with a pre-installed browser and the default search engine of their browser, and this is particularly the case on mobile devices. While some consumers may make an informed decision to remain with a pre-installed browser and/or use a pre-set search engine, other consumers do not, likely due to default bias and information asymmetries.

Information asymmetries between platforms and consumers occur due to the following factors, or a combination of them:

- Consumers may lack the technical knowledge required to change their browser or default search engine, or not be aware of alternative services. Further, because browsers are pre-installed, and search engines are pre-set on browsers and other search access points, some consumers may not turn their mind to the need to change. In addition, the integrated nature of search engines within browsers means that some consumers may not be aware that they are distinct services, which may make it difficult for consumers to make meaningful decisions about each of these services.
- Suppliers of browsers, search engine services and/or operating systems may require lengthy or complex processes to change settings, which discourages consumers from changing their browser or default search engine (if they have the knowledge to do so) or learning how to change (if they do not already know how).

These information asymmetries therefore have the potential to effectively 'lock-in' consumers to pre-installed services and default settings, and make it difficult for consumers to compare the quality or features offered by alternative services.

2.2.1. Consumers tend to stick with the pre-installed browser and pre-set search engine

Having browsers and search engines pre-installed on a device (and pre-set as the default search engine) can have the effect of encouraging consumers to remain with the status quo.¹⁰³ This default bias, discussed further in box 2.1, means that consumers have a tendency to remain with the browser that is pre-installed on their device and the search engine that is pre-set as the default, regardless of alternative options.

¹⁰³ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 68.

Box 2.1: Default bias

Default bias refers to the tendency for consumers to remain with a default option, service or setting.¹⁰⁴ Default effects have been studied widely in the behavioural insights literature and have been found to have strong impacts in a range of policy-relevant scenarios. For example, there has been research to suggest that in some cases, the advantage from being the pre-selected default was higher for otherwise less popular choices. In certain cases, inertia, an implicit endorsement of the default, and loss aversion, may all be relevant to explaining the power of defaults.¹⁰⁵

The ACCC, as noted in the *DPI Final Report*, considers that default biases, alongside the pre-installation and default arrangements for search engine services (described in detail in chapter 3), could affect competition in search markets for 3 reasons:¹⁰⁶

- In general, consumer behaviour means that a product set as the default option is substantially more likely to be chosen.
- Consumers may remain with the default option due to imperfect information, such as lack of knowledge about a new entrant and high information costs to compare the quality of a new entrant against an incumbent.
- Consumers may face costs to switch from the default option, particularly where they have low digital literacy (such as the time to learn how to switch).¹⁰⁷

Recommendation 3 of the *DPI Final Report*, that Google should provide Australian users with the ability to choose their default search engine and default browser from a number of options (a choice screen), was 'intended to reduce the default bias that currently exists and lowers barriers to entry and expansion.'¹⁰⁸ Google's roll out of a choice screen on new Android devices in the EEA and the ACCC's advice to Government regarding the application of a similar choice screen in Australia are discussed in chapter 4.

That pre-installation and default arrangements influence consumer use of digital platform services, including browsers and search engines, is well documented internationally.¹⁰⁹ Similar observations were made by several suppliers of browsers and search engines in submissions to the Issues Paper, including from Microsoft, DuckDuckGo and Ecosia.¹¹⁰

¹⁰⁴ OECD, [Improving Online Disclosures with Behavioural Insights](#), 12 April 2018, p 20.

¹⁰⁵ Samuelson and Zeckhauser (1988) first discussed default bias, and found through a series of controlled experiments that participants had a strong tendency to stick with the default, and at least in some cases, the advantage from being the pre-selected default was higher for otherwise less popular choices. Kahneman, Knetsch and Thaler (1991) discussed several examples where policy and commercial decisions regarding the choice of default had a significant influence on the outcome. Sunstein (2003) explained that that inertia, a sense that the default has been implicitly endorsed and loss aversion may all be relevant to explaining the power of defaults. See W Samuelson and R Zeckhauser, [Status Quo Bias in Decision Making](#) *Journal of Risk and Uncertainty*, 1:1 (1988), pp 7-59; D Kahneman, JL Knetsch, and RH Thaler, [Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias](#), *Journal of Economic Perspectives*, 5:1 (1991), pp 193-206; C Sunstein, [Deciding by Default](#), *University of Pennsylvania Law Review*, Vol. 162:1 (2013), pp 1-24.

¹⁰⁶ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 68.

¹⁰⁷ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 68.

¹⁰⁸ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 111.

¹⁰⁹ See for example Subcommittee on Antitrust, Commercial and Administrative Law of the Committee of the Judiciary, [Investigation of Competition in Digital Markets: Majority Staff Report and Recommendations](#), 6 October 2020, pp 81-83; Stigler Committee on Digital Platforms, [Final Report](#), September 2019, pp 8, 41; J Furman et al, [Report of the Digital Competition Expert Panel, Unlocking digital competition](#), 13 March 2019, p 36; CMA, [Online platforms and digital advertising market study, Appendix H: default positions in search](#), 1 July 2020, pp H19; *US Department of Justice v Google LLC, Complaint filed in the US District Court for the District of Columbia*, 20 October 2020, paras 50-51.

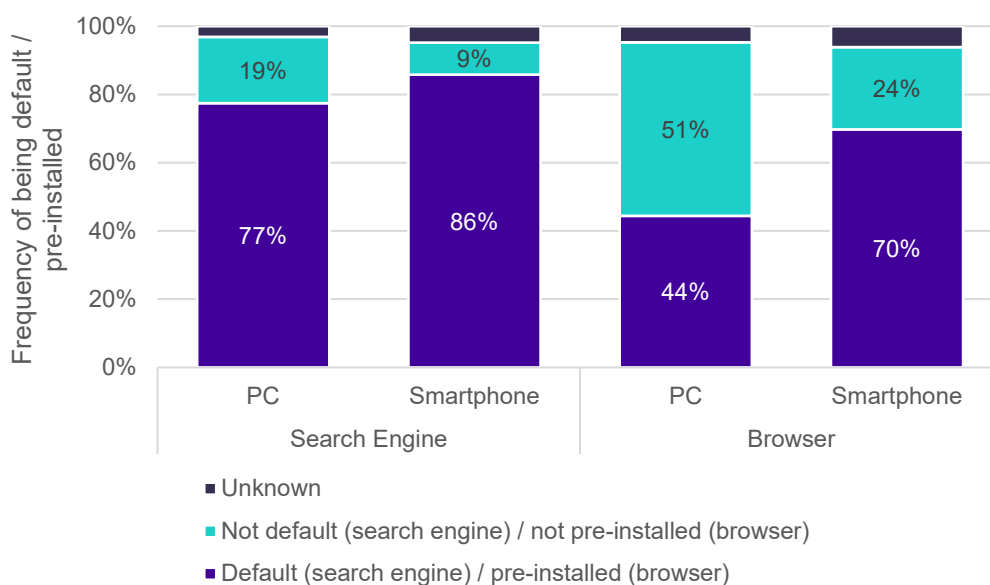
¹¹⁰ Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, pp 5-6 ('Indeed, in Australia, as is the case worldwide, there is a close correlation between pre-installation and defaults and usage'); Ecosia, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 5 ('Pre-installation and default settings have a profound impact on consumers and competition [...] they play an important role in influencing consumer usage...'); DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 113 ('Setting a service as default is the most direct, effective form of self-preferencing. When a dominant company does so, consumers rarely switch to an alternative').

Google also recognises the value of defaults to consumer use; internal documents reviewed by the EC in the Google Android case revealed a senior Google employee expressing the value of ‘preloading’ (that is, pre-installation) being that ‘users just use what comes on the device’ and ‘rarely change defaults’.¹¹¹ Further, the value Google places on being set as the default search engine in a browser and having its apps easily accessible to consumers is evidenced by contractual arrangements it has with a number of third party original equipment manufacturers (OEMs) and suppliers of web browsers.¹¹² These arrangements are discussed in further detail in chapter 3.

In its submission to the Issues Paper, Google notes that a high proportion of searches (91%) on Windows desktop devices are conducted using Google Search, despite Bing being the pre-set search engine on Microsoft’s pre-installed browsers Edge and Internet Explorer. Google submits that this is evidence that users are not locked in by default settings, and ‘can and do override defaults in favour of their preferred service’.¹¹³ However, the ACCC considers that an alternative explanation for the high usage of Google Search on Windows devices is Chrome’s high proportion of browser share on desktop devices in Australia (discussed in chapter 1), in which Google Search is the pre-set search engine, rather than users necessarily changing the default search engine in Edge or Internet Explorer from Bing to Google Search. Potential reasons for Chrome’s high market share on desktop are discussed in chapter 3.

The tendency for consumers to use a browser’s default search engine is supported by the findings of the ACCC 2021 consumer survey. As illustrated in figure 2.2, consumers reported using, as their main search engine, the search engine that was the initial pre-set default in the browser they used for both mobile and desktop devices.¹¹⁴

Figure 2.2: Retention of the pre-installed browser as ‘main browser’ and default search engine as ‘main search engine’ on devices



Source: Roy Morgan Research, *Consumer Views and Use of Web Browsers and Search Engines*, September 2021.

¹¹¹ European Commission, [Commission Decision, Case AT.40099 – Google Android](#), 18 July 2018, para 787.

¹¹² *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, paras 54-57.

¹¹³ Google, [Submission to the ACCC’s Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 10.

¹¹⁴ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 13.

The ACCC 2021 consumer survey also found a strong relationship between pre-installation and browser use on mobile devices. As illustrated in figure 2.2, 70% of consumers reported that the browser they used the most on their mobile device was pre-installed.¹¹⁵

This relationship was weaker for browsers on desktop devices. The ACCC 2021 consumer survey found roughly half of consumers reported that they downloaded the main browser they use on their computer.¹¹⁶ This may be due to the weaker effect of default bias on desktop devices and a greater level of consumer knowledge about how to change browsers on a desktop device. As the CMA noted, mobile defaults are likely to be stronger than desktop defaults, as consumers are less likely to take steps to change or bypass defaults when faced with a smaller screen.¹¹⁷ Older respondents to the ACCC 2021 consumer survey were more likely to primarily use a pre-installed browser on their desktop device (55% of 65–79 year olds and 63% of those over 80 years old).¹¹⁸

2.2.2. Consumers may not always know how to change their browser or search engine, or be aware of alternative services

While default bias is one reason that consumers may remain with a pre-set search engine and use a pre-installed browser despite the ability to switch, consumers may also remain with a pre-installed browser or pre-set search engine because they do not have the required knowledge or technical ability to change. Notwithstanding this, the ACCC recognises that some consumers may remain with a pre-set search engine or pre-installed browser due to the quality of those services. For example, Google noted that the quality of its services, including as a result of its investments and innovation, contributes to its popularity among consumers.¹¹⁹ The ACCC 2021 consumer survey also found that consumers that primarily use Chrome as their main browser reported that they do so because it is their preferred browser on their mobile (57%) or desktop device (68%).¹²⁰

Some consumers do not know how to download an alternative browser, or change the default browser

In the ACCC 2021 consumer survey, over a third of consumers (35%) reported that they either did not know how to change the default browser on their mobile device (24%) or were unsure if they knew how to do so (11%).¹²¹ For desktop devices, one in five consumers (20%) stated that they either did not know how to change the default browser on their computer (14%) or were unsure if they knew how to (6%).¹²² This is illustrated in figure 2.3.

A higher proportion of those from older age groups reported that they did not know how to change the default browser on their mobile device or on their computer (42% and 31% of 65–79 year olds respectively; and 55% and 46% of those aged over 80 years old respectively).¹²³

¹¹⁵ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 13.

¹¹⁶ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 46.

¹¹⁷ CMA, [Online Platforms and Digital Advertising Market Study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), p V7.

¹¹⁸ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 46.

¹¹⁹ Google, [Submission to the ACCC's Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021 pp 2, 3–5.

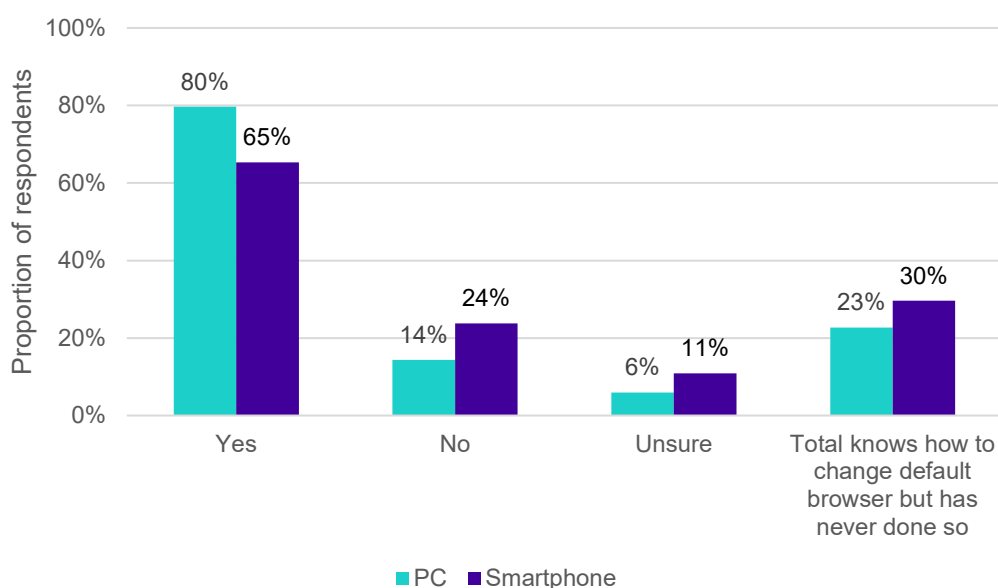
¹²⁰ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 41–42.

¹²¹ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 53.

¹²² Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 53.

¹²³ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 53.

Figure 2.3: Do you know how to change the default browser on your device?



Source: Roy Morgan Research, *Consumer Views and Use of Web Browsers and Search Engines*, September 2021.

Downloading alternative browsers is a key way for consumers to access other browsers and potentially, alternative search engines pre-set as the default on those browsers. For example, Ecosia and DuckDuckGo both offer browsers on mobile devices, which have their own search engines pre-set as the default. In the ACCC 2021 consumer survey, almost one in five consumers (19%) reported that they did not know how to download a new browser on their mobile device, which is generally a prerequisite to changing the default browser.¹²⁴ Consumers reported greater awareness of how to download and install an alternative browser on desktop devices, relative to mobile devices. Only one in ten (13%) of those surveyed reported not knowing how to install a new browser on their desktop device.¹²⁵

Some consumers do not know how to change the default search engine in a browser

The ACCC 2021 consumer survey found that over a third of consumers stated that they either do not know how to change the default search engine used by their mobile browser (24%) or were unsure if they knew how to do this (12%).¹²⁶ This is illustrated in figure 2.4.

As with changing the default browser on a mobile device, older age groups reported higher rates of not knowing how to change the default search engine on their mobile device compared to other respondents (41% of those aged 65–79 years old and 59% of those aged over 80).¹²⁷ Across mobile operating systems, iOS users were most likely to not know how to change the default search engine in their browser.¹²⁸

¹²⁴ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 49.

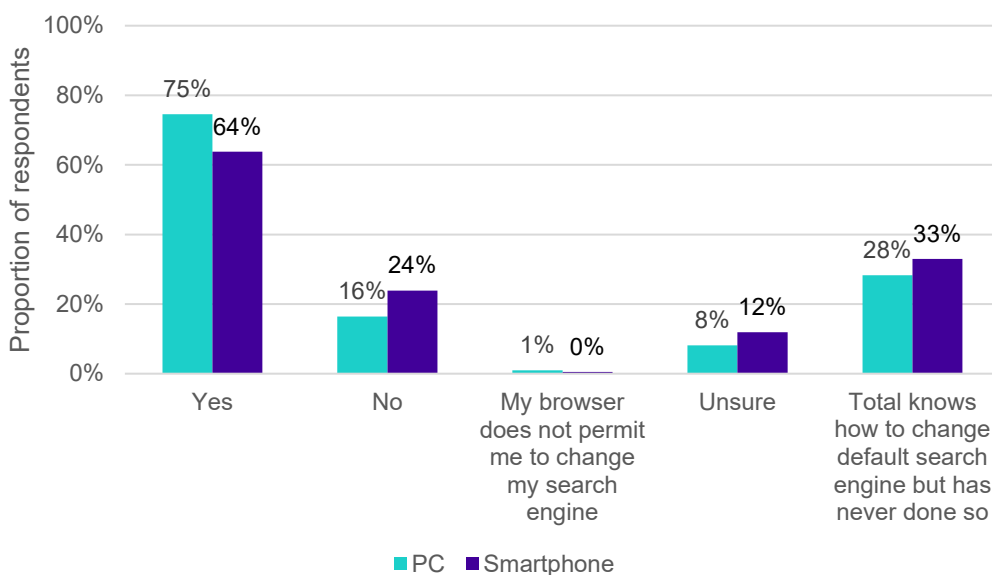
¹²⁵ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 49.

¹²⁶ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 70.

¹²⁷ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 70.

¹²⁸ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 70.

Figure 2.4: Do you know how to change the default search engine on the browsers on your device?



Source: Roy Morgan Research, *Consumer Views and Use of Web Browsers and Search Engines*, September 2021.

Consumers were more confident changing the default search engine (including the pre-set search engine) used by their desktop browser. Of those surveyed, only 16% reported that they did not know how to change the default search engine used by the browser on their desktop device.¹²⁹

Among the consumers that changed their default search engine on their mobile and desktop devices, those from Aboriginal and Torres Strait Islander backgrounds (mobile, 92%; desktop, 82%) and those who only spoke a language other than English at home (mobile, 69%; desktop, 59%) were more likely to require assistance to do so compared to other respondents.¹³⁰

Some consumers may lack awareness of alternative suppliers of browsers or search engines

Even where consumers have the knowledge to switch their browser or search engine, doing so requires awareness of and knowledge about alternative suppliers. Consumers that lack knowledge of alternative suppliers are less well-placed to meaningfully switch, or choose the service that best meets their preferences, regardless of their willingness or desire to do so.

The highly concentrated nature of browsers and search engine services in Australia means that some consumers may lack meaningful awareness and understanding of alternative browsers and search engine services. Consumers may therefore be inclined to use a particular service due to brand awareness, rather than choosing the service based on the features or quality offered.¹³¹

¹²⁹ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 70.

¹³⁰ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 73. Forms of assistance obtained by consumers included an internet search; seeking help from family and/or friends; consulting the in-built help guide on their device; consulting the device manual; and contacting the device manufacturer.

¹³¹ For example, Zingales (2013) notes that where users are accustomed to using a particular search engine they may not seek out potential alternatives, even if the user perceived results to have deteriorated or a lack of innovation to be affecting their experience. See N Zingales, [Product Market Definition in Online Search and Advertising](#), *The Competition Law Review*, 9:1 (2013), p 44.

Google has extremely high brand awareness among consumers, as confirmed in the Google survey¹³² and the ACCC 2021 consumer survey. In its submission to the Issues Paper, Google reported that almost all respondents to a survey of Android users (Google survey) were aware of Google Search and Chrome (96% and 86% of respondents respectively).¹³³ In comparison, the Google survey found that just over half of respondents reported awareness of the next most known search engine and browser (Yahoo! and Firefox, respectively), indicating that a substantial portion of respondents were aware of only one search engine (Google Search) and one browser (Chrome).¹³⁴

Similarly, the ACCC 2021 consumer survey found that consumer awareness of Google Search and Chrome is almost universal; 96% and 95% of consumers reported being aware of Google Search and Chrome respectively.¹³⁵ After Google Search, only 2 other search engines were known by a majority of those surveyed (Yahoo!, 67% and Bing, 57%).¹³⁶ Awareness of alternative browsers appeared to be higher than awareness of alternative search engines, with 4 other browsers in addition to Chrome (Internet Explorer, Firefox, Safari and Edge) known by a majority of those surveyed; awareness of these browsers ranged between 69% and 85%.¹³⁷

However, awareness of alternative suppliers with unique value propositions was generally considerably lower. For example, less than a third reported that they were aware of privacy focused search engine and mobile browser DuckDuckGo (30% and 25% respectively)¹³⁸, despite the ACCC 2021 consumer survey finding that 70% of consumers reported being concerned about the collection of data and personal information by browsers and search engines.¹³⁹ Less than 10% reported that they were aware of environmentally focused search engine and mobile browser Ecosia (7% and 6% respectively), and privacy focused browser Brave (9%).¹⁴⁰

The ACCC expects that high brand awareness of Google by consumers, primarily through Google Search, is at least one explanation for Chrome's popularity on desktop devices, despite not being a pre-installed browser. However, the combined effect of default bias and lack of consumer awareness of alternatives may result in less optimal outcomes for consumers that value other features of browsers or search engines.

A lack of knowledge of switching processes or of alternative suppliers may be a reason why some consumers don't change their browser or search engine. However, the effect of default bias means that even consumers who are aware they can change, know how to do so and have knowledge of alternative suppliers, may never do so. This may be the case even if higher quality alternative browsers and/or search engines exist. Further, the longer a user continues to use a browser's pre-set search engine, the more entrenched its use is likely to become and therefore, the less likely the user will be to switch away.¹⁴¹

Consistent with this, the ACCC 2021 consumer survey found that a proportion of consumers across both device types who report knowing how to change their default browser or default search engine have never done so. This proportion was highest for the default search

¹³² Google, [Submission to the ACCC's Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021 pp 32, 35.

¹³³ Google, [Submission to the ACCC's Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021 pp 32, 35.

¹³⁴ The survey was conducted by Google in September 2019 among Android device users. A sample of 421 respondents answered '[w]hich of the following search engines are you aware of?', while a sample of 468 respondents answered '[w]hich of the following internet browsers are you aware of?' See Google, [Submission to the ACCC's Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021 pp 32, 35.

¹³⁵ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 30, 57.

¹³⁶ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 57.

¹³⁷ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 30.

¹³⁸ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 30, 57.

¹³⁹ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 29.

¹⁴⁰ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 30, 57.

¹⁴¹ N Zingales, [Product Market Definition in Online Search and Advertising](#), *The Competition Law Review*, 9:1 (2013), p 44.

engine on a mobile device. As illustrated in figure 2.4, of those consumers that reported knowing how to change the default search engine on a mobile device (64%), only about half have ever done so (33%).¹⁴² However, some consumers who know how to change the default may make an active decision to remain with their default search engine or browser due to the quality of the service or a preference for other features offered.

2.2.3. Changing browsers and search engine services is not always easy

The ACCC 2021 consumer survey found that among those consumers that changed the default browser or default search engine on their device in the last 2 years, the majority reported that this has been easy or very easy to do.¹⁴³ For example:

- Consumers that downloaded and installed a browser said this had been easy or very easy to do on their mobile device (91%) or desktop device (89%).¹⁴⁴
- Those who had changed the default browser on their device in the last 2 years also reported that this had been easy or very easy to do the last time they had done so on their mobile device (84%) or desktop device (83%).¹⁴⁵
- Most of those who had changed the default search engine on their device reported that this had been easy or very easy to do the last time they had done so on their mobile device (83%) or desktop device (84%).¹⁴⁶

Google noted in its submission to the Issues Paper that in a survey of Android users, 73% of 384 respondents found it easy or very easy to download a rival app – including, but not limited to, browsers – to their mobile device.¹⁴⁷

Notwithstanding this, some consumers reported that they required some form of assistance to change their default browser or search engine, or to download and install a browser. Forms of assistance obtained by consumers included an internet search; seeking help from family and/or friends; consulting the in-built help guide on their device; consulting the device manual; and contacting the device manufacturer. For example:

- Around one in four (25%) of those consumers that downloaded and installed a browser on their mobile device and 8% of those that downloaded and installed a browser on their desktop device reported that they had obtained some form of assistance.¹⁴⁸
- Just under half of those consumers reported that they obtained some form of assistance the last time they changed the default browser on their mobile (45%) or desktop device (41%), or the default search engine on their mobile (48%) or desktop device (41%).¹⁴⁹

The ACCC considers that the processes that consumers must go through in order to change their browser or search engine are not always straightforward, and can contribute to the tendency for consumers to use pre-installed browsers and pre-set search engines.

In May and June 2021, ACCC staff reviewed the processes for:

¹⁴² Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 70-71.

¹⁴³ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 51, 55, 72.

¹⁴⁴ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 51.

¹⁴⁵ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 55.

¹⁴⁶ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 72.

¹⁴⁷ Note that the question actually asked was 'How difficult is it to download an Android app?'. See Google, [Submission to the ACCC Digital Platforms Services Inquiry Third Interim Report](#), 7 May 2021, pp 14, 38.

¹⁴⁸ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 51.

¹⁴⁹ The most common forms of assistance sought by consumers to change the default search engine included an internet search, seeking help from family and friends and using the in-built help device. Consumers that sought to change the default browser similarly obtained assistance via an internet search. Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 55-56, 72-73.

- changing the default search engine in a browser (Chrome, Safari, Firefox, Edge, and Internet Explorer), and
- installing and setting as the default an alternative browser (Edge, Firefox or Chrome).¹⁵⁰

Changing the default search engine in a browser

Table 2.1 sets out the number of steps required to change the default search engine in each browser to an alternative search engine, on both desktop and mobile devices. On the devices tested, changing the default search engine generally required more steps on desktop devices than mobile devices, requiring between 5 to 9 steps for desktop devices compared to 4 to 6 steps for mobile devices.¹⁵¹

Table 2.1: Steps taken to change the default search engine by browser and device

Browser	Steps	Device	Operating System
Mobile device			
Chrome	5	Samsung Galaxy A8	Android (8.0.0)
Edge	6	Samsung Galaxy A8	Android (8.0.0)
Firefox	5	Samsung Galaxy A8	Android (8.0.0)
Safari	4	iPhone 6S	iOS (14)
Desktop device			
Chrome	5-7 ¹⁵²	HP Elitebook 840	Windows (10 Pro)
Edge	7	HP Elitebook 840	Windows (10 Pro)
Internet Explorer	9	HP Elitebook 840	Windows (10 Pro)
Firefox	6	HP Elitebook 840	Windows (10 Pro)
Safari	6	Macbook Air	macOS (10.14.6)

The ACCC also reviewed the process of changing a browser’s default search engine through installing a browser extension. Browser extensions allow users to customise the features and functionality of their browser. Installing a browser extension generally required more steps and a greater level of technical knowledge than changing the default search engine through settings; this is discussed further below.

Changing to an alternative browser

To change to an alternative browser, users are typically required to first search for, download and install an alternative browser before they can then switch their default browser; more than is required to change the default search engine in a browser’s settings. This is reflected

¹⁵⁰ The devices used for this analysis included the following: Samsung Galaxy A8 mobile device running Android 8.0; Apple iPhone 6S mobile device running Apple iOS 14; Apple MacBook Air laptop running Apple macOS Mojave, and HP Elitebook 840 laptop running Microsoft Windows 10 Pro.

¹⁵¹ For the purposes of the ACCC’s analysis, steps include ‘clicks’ but do not include scrolling; typing a query into a search or address bar and pressing enter to submit that query were counted as one step; and an initial requirement to open the device settings or a browser to access the default settings was counted as a step.

¹⁵² Two different paths to access ‘manage search engine’ to change the default search engine in Chrome were analysed; one by first navigating to settings (7 steps) and the other by right clicking in the URL bar (5 steps).

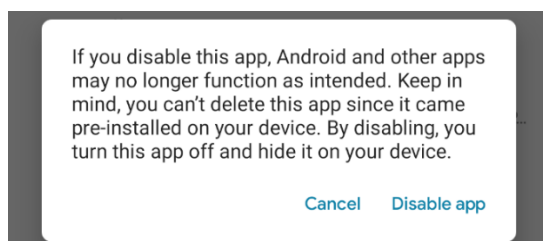
in the number of steps required to change the default browser, relative to changing the default search engine on a web browser. As set out in table 2.2, on all devices tested, the process required a minimum of 10 steps.¹⁵³

Table 2.2: Steps taken to switch to an alternative default browser

Operating System	Browser installed	Steps	Device type
Mobile device			
Android (8.0.0)	Edge	10	Samsung Galaxy A8
iOS (14)	Firefox	11	iPhone 6S
Desktop device			
Windows (10 Pro)	Chrome	13	HP Elitebook 840
macOS (Mojave 10.14.6)	Chrome	10	MacBook Air

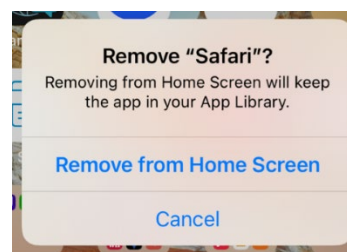
On iOS and Google Pixel mobile devices (Android devices manufactured by Google), the pre-installed browser cannot be permanently deleted. On Google Pixel devices, Chrome may be disabled but not deleted, as shown in figure 2.5. Similarly, on iOS devices, the Safari app can be hidden from the home screen but not deleted, as illustrated in figure 2.6. While the ACCC considers that there may be valid reasons, such as device functionality, for why pre-installed browsers cannot be deleted, the inability to delete certain apps may also contribute to consumer lock-in and hinder consumer choice, as discussed further below.

Figure 2.5: Message displayed on a Google Pixel mobile device when attempting to disable Chrome app in settings



Source: Screenshot taken on a Google Pixel 3A XL mobile device running Android 11 by ACCC on 2 July 2021

Figure 2.6: Message displayed on an iOS device when attempting to delete Safari app from home screen



Source: Screenshot taken on an iOS mobile device running iOS 14.6 by ACCC on 2 July 2021

Changing the default search engine in the broader device ecosystem

Comprehensively changing the default search engine within a device ecosystem requires changing the default across each of the various search access points available on a device. For example, while the ACCC’s analysis found that changing the default search engine in Chrome on an Android mobile device took 5 steps, DuckDuckGo has stated that:

‘... it takes over 15 clicks to change your search engine across an Android device, including downloading a new app, updating the search widget on your home screen

¹⁵³ For the purposes of the ACCC’s analysis, steps include ‘clicks’ but do not include scrolling; typing a query into a search or address bar and pressing enter to submit that query were counted as one step; and an initial requirement to open the device settings or a browser to access the default settings was counted as a step.

to the widget that comes with the app, and then changing the search default in your default browser.¹⁵⁴

Some search access points may not allow for the default search engine to be changed from the pre-set at all. This is the case for the pre-set search engine in Google's and Apple's voice assistants (Google Assistant and Siri), which cannot be changed from Google Search.¹⁵⁵ In the case of Siri, users are able to use an alternative search engine by directing Siri to conduct a search using an explicitly named alternative search engine (for example, saying 'Hey Siri, search Bing for today's weather' rather than 'Hey Siri, search for today's weather'). However, this does not permanently change the default and requires the user to specify the alternate search engine for every query.¹⁵⁶

On Windows, it is not technically possible to change the pre-set search engine (Bing) used by Microsoft's Cortana or the taskbar search box on the Windows operating system. However, users can in effect achieve this outcome by first changing their default browser to Chrome or Firefox and then installing a third-party browser extension.¹⁵⁷ However, as noted above, a large number of steps are involved to do so and consumers may not be aware of, or know how to utilise, this option.

While consumers can generally download additional apps and widgets, rather than changing the pre-set search engine on the app or widget, some devices restrict consumers' ability to remove pre-installed apps and widgets. On Google Pixel mobile devices, the pre-installed Google Search app can only be disabled, rather than permanently deleted (with the same pop-up message in figure 2.5 appearing when the user attempts to do so), and the Google Search widget (which is prominently featured on the home screen) cannot be removed.¹⁵⁸ This means that if a user downloads and installs an alternative widget on a Google Pixel device, it appears in addition to the Google Search widget rather than instead of it.

Significant numbers of consumers have limited understanding of how platforms work

Effective competition requires consumers to make well-informed decisions.¹⁵⁹ Improved digital literacy would assist consumers in making meaningful decisions that best suit their needs and increase the ability for consumers to switch, lowering barriers to entry and expansion in the search engine services market.

As discussed above, findings from the ACCC 2021 consumer survey indicate that a sizeable proportion of consumers do not have the technical knowledge to switch, and certain groups, such as older Australians, those who speak a language other than English at home, and respondents from Aboriginal and Torres Strait Islander backgrounds, are more likely to require assistance to do so. In addition, the findings from the ACCC 2021 consumer survey

¹⁵⁴ DuckDuckGo, [Search Engines Should Be Able to Guide Consumers to Search Preference Menus](#), *Spread Privacy*, 18 May 2021, accessed 13 September 2021.

¹⁵⁵ Note that while the default search engine used by Google Assistant cannot be changed from Google, the ACCC understands that users may be able to set an alternative voice assistant (which uses another search engine) as the operating system's default voice assistant on some Android mobile devices. See J Fedewa, [How to Change the Default Search Engine on Android](#), *How-To Geek*, 1 March 2021, accessed 13 September 2021; A Haslam, [How to Change the Default Search Engine in Safari on iPhone or iPad](#), *How-To Geek*, 9 April 2021, accessed 13 September 2021.

¹⁵⁶ P Shah, [How to Change Siri's Search Engine \(And Other Tricks\)](#), *Guiding Tech*, 20 November 2019, accessed 13 September 2021.

¹⁵⁷ P Gralla, [Windows 10 quick tips: Get the most out of Cortana](#), *Computer World*, 19 August 2020, accessed 13 September 2021.

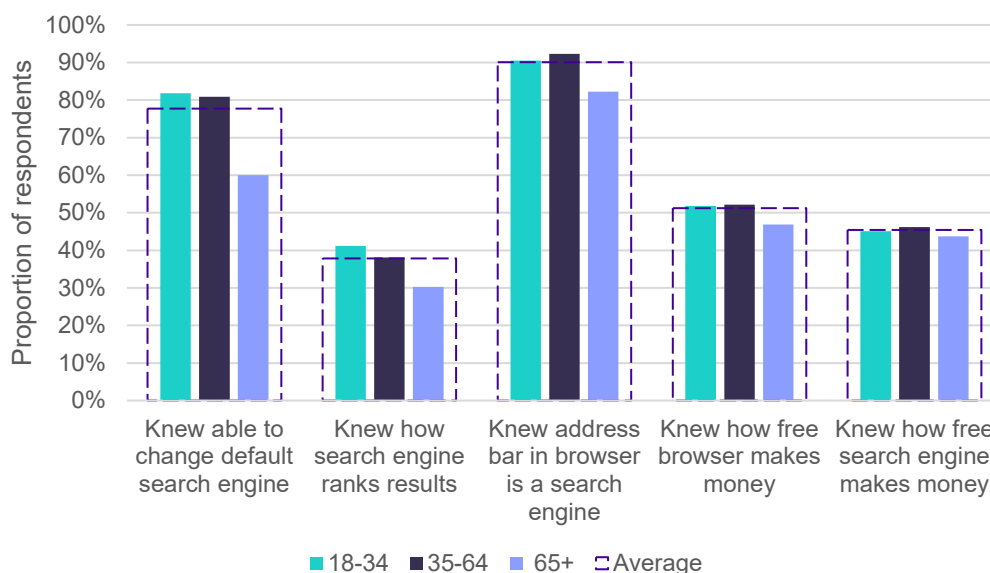
¹⁵⁸ 'Removing the Google Search bar [widget] on stock Android isn't possible on Google's own Pixel devices.' See D McCourt, [How to remove the Google Search bar from any Android homescreen](#), *Next Pit*, 27 May 2021, accessed 13 September 2021.

¹⁵⁹ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 23; Pinar Akman, [A Web of Paradoxes: Empirical Evidence on Online Platform Users and Implications for Competition and Regulation in Digital Markets](#) (2021) p 5.

show that just over a third (38%) of those surveyed correctly identified how a search engine ranks its results, and those from both the youngest and oldest age groups were among those less likely to provide a correct answer.¹⁶⁰ The most common incorrect answers provided include that results are ranked based on the amounts paid by third parties to display results (19%); based on the order deemed most relevant by the search engine's algorithm (18%); and based on information collected about the user (12%).¹⁶¹

Further, the findings indicate that consumers may not understand how platforms operate and use consumer data, with only 46% of consumers correctly identifying that search engines are primarily funded through advertising.¹⁶² This is shown in figure 2.7 below. The most common incorrect answer was that search engines make money by selling consumer data, with over a quarter (28%) of consumers nominating this response.¹⁶³ As above, those in the youngest and oldest age groups (34% of those aged 18–24 years old and 39% of those aged over 80) and those from an Aboriginal and Torres Strait Islander backgrounds (33%) were less likely to have provided the correct answer.¹⁶⁴ The business models of platforms has significant implications for consumers, as it impacts the way consumers 'pay' for the platforms' services (for example, through the exchange of user data or money for the platforms' services).¹⁶⁵

Figure 2.7: Consumers' understanding of how platforms work



Source: Roy Morgan Research, *Consumer Views and Use of Web Browsers and Search Engines*, September 2021.

A recent study by Akman (2021) also indicates that some consumers do not know the difference between browsers and search engines.¹⁶⁶ For example, in response to being asked what they would do in the event that their preferred search engine started charging a

¹⁶⁰ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 59. In response to a search query, search engines provide a list of results in an ordered way. 'How do you think a search engine ranks or decides the order of results it displays to you in response to a search query?' 38% of respondents answered 'based on relevance and the amount paid by third parties to display results'. Respondents aged 18-24 years, 29%; 65–79 years, 32%, 80+ years, 20%.

¹⁶¹ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 59.

¹⁶² Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 58.

¹⁶³ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 58.

¹⁶⁴ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 58.

¹⁶⁵ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 7.

¹⁶⁶ P Akman, [A Web of Paradoxes: Empirical Evidence on Online Platform Users and Implications for Competition and Regulation in Digital Markets](#) (2021) pp 30–32.

monthly fee, the most common response was that they would switch to an alternative search engine. Respondents were then asked what alternative search engine they would use, and one in 10 respondents provided the name of a browser as an alternative to using their preferred search engine.¹⁶⁷

Consumers would benefit from improved digital literacy

Given the above, the ACCC considers that improved digital literacy would help consumers make meaningful choices about their use of digital services, including browsers and search engine services. This should include a better understanding of how platforms operate and the ability to change browsers and search engines.

Examples of digital literacy initiatives in Australia and overseas are outlined in box 2.2 below.

Box 2.2: Australian and overseas digital literacy initiatives

A range of digital literacy initiatives are being undertaken domestically and abroad by public, private and non-profit stakeholders, which vary in terms of their target audience, topics of focus and method of delivery.

In Australia, the eSafety Commissioner provides a wide range of online resources, programs and training sessions for parents, educators, children and young people, seniors and diverse groups which aim to assist all Australians to have safer experiences online.¹⁶⁸ These include Young and eSafe¹⁶⁹, a space containing videos and content designed to help young people explore and develop online safety skills, and Be Connected, a Federal Government initiative delivered by the eSafety Commissioner¹⁷⁰ which aims to increase the confidence, skills and safety of older Australians using digital technology.¹⁷¹ Other notable programs include GoDigi, a partnership between Australia Post and not-for-profit Infoxchange which teaches Australians basic digital skills, with a focus on small businesses, older Australians and culturally and linguistically diverse, remote or rural and Indigenous communities.¹⁷²

Notable overseas initiatives include Stadt-Land-DatenFluss, an app developed by the German government and the German Adult Education Association which uses a gamified approach to explain the value of data, how platforms use it, and concepts such as artificial intelligence.¹⁷³ DataDetoxKit, an initiative of NGO Tactical Tech, helps people make informed choices by educating them on data control, privacy, and default settings.¹⁷⁴ In India, the National Digital Literacy Mission, a joint initiative by the Indian Government and corporate partners, aims to teach at least one person from every household in India basic skills such as using the internet, email, social media and digital government services.¹⁷⁵

¹⁶⁷ P Akman, [A Web of Paradoxes: Empirical Evidence on Online Platform Users and Implications for Competition and Regulation in Digital Markets](#) (2021) p 32.

¹⁶⁸ eSafety Commissioner, [Our programs](#), accessed 13 September 2021.

¹⁶⁹ eSafety Commissioner, [Young and eSafe](#), accessed 13 September 2021.

¹⁷⁰ BeConnected Network, ['Be Connected program launched for older Australians'](#), accessed 13 September 2021.

¹⁷¹ Department of Social Services, 'Be Connected – Improving digital literacy for older Australians', accessed 13 September 2021.

¹⁷² Go Digi, [About](#), accessed 13 September 2021; Go Digi, [Learning Guide List](#), accessed 13 September 2021.

¹⁷³ The Federal Government (Germany), [Stadt-Land-DatenFluss: The app to boost digital literacy](#), accessed 13 September 2021.

¹⁷⁴ The Federal Government (Germany), [Stadt-Land-DatenFluss: The app to boost digital literacy](#), accessed 13 September 2021.

¹⁷⁴ DataDetoxKit, [About us](#), accessed 13 September 2021; DataDetoxKit, [Home](#), accessed 13 September 2021.

¹⁷⁵ NASSCOM Foundation, [National Digital Literacy Mission](#), accessed 13 September 2021.

Targeted education and awareness campaigns have also been developed in the US, Europe and Canada.¹⁷⁶ For example, US Federal Trade Commission (FTC)'s 'Pass it on initiative'¹⁷⁷ is aimed at protecting elderly consumers against scams and fraud, while the EC's *Better Internet for Kids* portal has resources for children and young adults.¹⁷⁸ Competition Bureau Canada also published the second edition of its publication on how to avoid scams in 8 different languages, increasing its accessibility for diverse communities.¹⁷⁹

While many initiatives aim to increase technical skills and educate consumers about online safety and security, few initiatives are focused on educating consumers about the choices available to them, or how platforms operate. In addition, there is no one program or initiative that appears to address all of the key issues identified in this Report. A specific and targeted digital literacy initiative for Australians should be considered. Such programs should promote and improve the ability of Australians to:

- understand how platforms operate and use consumer data
- assess and use the platform or services that best meets their needs and preferences, including the range of alternative options available and the ability to switch to these services, and
- use platforms safely and securely, including by educating consumers about scams occurring on platforms, and potential harms resulting from negative choice architecture and dark patterns.

These measures would allow consumers to make more well-informed choices about the platforms they use, and to meaningfully switch to platforms that offer a better service, or better suit their preferences.¹⁸⁰

Potential measure: improved digital literacy for consumers

The ACCC continues to support the *DPI Final Report's* recommendations regarding the need for improved digital media literacy in the community and in schools (recommendations 12 and 13). These recommendations should be expanded to include digital literacy of platforms, including information about how platforms operate and use consumer data; information about alternative service providers and the ability to switch to alternative browsers and search engines; and how to use platforms safely (such as how to avoid scams occurring on platforms, and information about dark patterns).

2.3. Platforms' choice architecture and use of dark patterns may hinder consumer choice and harm consumers

While the ACCC recognises that consumers can benefit from having browsers and search engine services pre-installed on devices, the way that platforms provide these services and present 'choices' may not always be in consumers' best interests, and may exacerbate default biases and information asymmetries. In contrast to user interfaces designed in a way

¹⁷⁶ OECD, [Challenges to Consumer Policy in the Digital Age](#), 2019, p 36.

¹⁷⁷ Federal Trade Commission, [Pass it on](#), accessed 13 September 2021.

¹⁷⁸ European Commission, [Better internet for kids](#), accessed 13 September 2021.

¹⁷⁹ Competition Bureau Canada, [The Little Black Book of Scams \(2ed\)](#), 1 March 2018.

¹⁸⁰ P Akman, [A Web of Paradoxes: Empirical Evidence on Online Platform Users and Implications for Competition and Regulation in Digital Markets](#) (2021), pp 37-38. Prof. Akman found that the majority of consumers do not know how Facebook and Google are provided to consumers at no cost, and that nearly one in 4 consumers do not know how Facebook and Google are funded.

that facilitates consumer choice, such as through clear presentation of information and simple processes, platforms can use choice architecture and dark patterns to discourage consumers from switching and in some cases, impact consumers' ability to exercise their autonomy.

Box 2.3: Choice architecture and dark patterns

The ACCC refers to 'choice architecture' as the design of user interfaces that influence consumer choices by appealing to certain psychological or behavioural biases.¹⁸¹ Examples of behavioural biases that are likely to affect consumers include default or status quo bias (see box 2.1) and consumers' tendency to focus on the short-term or immediate implications of their decisions, compared to the future (short-sightedness or myopia).¹⁸²

The ACCC notes that while there is no single definition of 'dark patterns', it has been described as 'user interfaces whose designers knowingly confuse users, make it difficult for users to express their actual preferences, or manipulate users into taking certain actions'¹⁸³. Examples of dark patterns include:

- **Nagging**, or the use of interruptions such as continuous pop-up notifications that are not related to action that the consumer wishes to take.¹⁸⁴
- **Obstruction** or the use of **friction**, where a process is made more difficult than needed with the intention of discouraging certain actions to be taken.¹⁸⁵
- **Misdirection** which involves the use of visuals, language and emotion to steer users towards a particular choice.¹⁸⁶
- **Sneaking** or attempting to hide, disguise or delay providing information that is relevant to users. Examples include **bait and switch**, where a user sets out to complete a certain action but a different and undesired action happens instead¹⁸⁷ or when products are added to a consumers' basket (e.g. 'sneak into basket').
- **Scarcity or urgency cues**, which utilise consumers' aversion to loss to entice them to make a purchase while it's still available or available at a discount.¹⁸⁸
- **Forced action**, where users are required to do a particular action to access or continue to access a particular service or functionality.¹⁸⁹

In this Report, the ACCC refers to dark patterns as elements of user interfaces which have been designed to make it difficult for users to express their actual preferences, or which nudge users to take certain action that may not be in their best interests.¹⁹⁰

¹⁸¹ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 429.

¹⁸² ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, pp 424-425; CMA, [Online Platforms and Digital Advertising Market Study, Appendix Y: choice architecture and Fairness by Design](#), 1 July 2020, pp Y2-Y3.

¹⁸³ J Luguri and L Strahilevitz, [Shining a Light on Dark Patterns](#), *Journal of Legal Analysis*, 13:1 (2021), p 44.

¹⁸⁴ CPRC, [Unfair Trading Practices in Digital Markets](#), December 2020, p 10.

¹⁸⁵ CPRC, [Unfair Trading Practices in Digital Markets](#), December 2020, p 10.

¹⁸⁶ OECD, [Roundtable on Dark Commercial Patterns Online, Summary of discussion](#), 19 February 2021, p 13.

¹⁸⁷ C Gray et al, [The Dark \(Patterns\) Side of UX Design](#), *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, Montreal, 21-26 April 2018, p 4.

¹⁸⁸ OECD, [Roundtable on Dark Commercial Patterns Online, Summary of discussion](#), 19 February 2021, p 13.

¹⁸⁹ C Gray et al, [The Dark \(Patterns\) Side of UX Design](#), *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, Montreal, 21-26 April 2018, p 8.

¹⁹⁰ Norwegian Consumer Council, [Deceived by Design](#), 27 June 2018, p 7; Stigler Committee on Digital Platforms, [Final Report](#), September 2019, p 12; CPRC, [Unfair Trading Practices in Digital Markets](#), December 2020, p 10.

2.3.1. Choice architecture and use of dark patterns by browsers and search engines can increase the difficulty of switching

Even if consumers know how to change their pre-installed browser or pre-set search engine and are aware of alternative services, the choice architecture and dark patterns of these services can increase the difficulty of switching.

The ACCC's analysis of the process required for consumers to change their default browser and pre-set search engine (user journeys) observed that platforms use dark patterns (such as friction and forced action) and certain types of choice architecture (such as the prominence, framing and wording of possible options) to influence use of browsers and search engine services. The observed conduct, and the potential detriments arising from it, are discussed below.

Dark patterns

Academics have noted that dark patterns can result in more severe detriments to consumers, compared to other marketing techniques which may also involve persuasion.¹⁹¹ For example, dark patterns may lead to losses to individual welfare (such as financial loss or breaches of privacy), collective welfare (such as reduced competition or loss of trust in online businesses) and may impact individual autonomy.¹⁹² The ACCC observed examples of dark patterns, such as the use of friction and forced action, during its review of the user journeys to change search engines and browsers, as discussed below.

Installing the Ecosia browser extension on Edge

During the process of downloading the Ecosia browser extension on Edge on a desktop device, friction was encountered at multiple stages, including through pop-up warnings and requiring users to enable settings before being able to use the browser extension.¹⁹³

The process for downloading and installing this extension on Edge is set out below:

- Consumers typically download browser extensions from the Microsoft Edge Store. After a user downloads the extension, Edge asks users to confirm whether they would like to add the extension to their browser, or cancel. At this point, Edge states that the Ecosia browser extension can 'read and change your data on all Ecosia.org sites' and 'change the page you see when you open a new tab' (for example, figure 2.11 below).
- After selecting 'Add extension', Edge presents another message, stating that it has turned off the Ecosia browser extension 'to help protect your browser settings' (see figure 2.12). The pop-up does not provide an option to enable the browser extension, but includes a hyperlink on how to turn on the extension. This hyperlink takes users to a Microsoft Edge Support page, which provides instructions to enable the extension.
- To enable the extension, users have to go to the 'Settings' of the Edge browser, and select 'Extensions'. This then takes users to the 'Installed extensions page', where users can enable the browser extension.
- After this, the Ecosia browser extension is finally enabled and installed. However, when a new tab is opened for the first time, Edge displays another message, asking users 'Is this

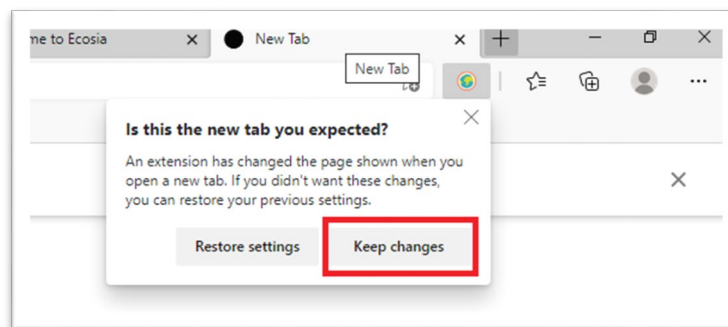
¹⁹¹ OECD, [Roundtable on Dark Commercial Patterns Online, Summary of discussion](#), 19 February 2021, p 3.

¹⁹² A Mathur, J Mayer, and M Kshirsagar, [What Makes a Dark Pattern... Dark?: Design Attributes, Normative Considerations, and Measurement Methods](#), *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, Online virtual conference, 8-13 May 2021, pp 13-19.

¹⁹³ Browser extensions can be downloaded and installed on a desktop device to customise the functionality and features of a browser. For example, the Ecosia browser extension sets a users' default search engine to Ecosia, and customises the browser so that new tabs open to the Ecosia homepage.

the new tab you expected?’ and presenting users with an option to ‘Restore settings’, which would result in Edge once again being the default browser (see figure 2.8).

Figure 2.8: Pop-up asking users to keep changes or restore settings



Source: Screenshot taken on an HP Elitebook 840 laptop running Windows 10 Pro by ACCC on 20 May 2021

The ACCC has concerns about whether such pop-ups and warnings always help users. While the ACCC recognises that pop-ups can be useful in warning consumers about potential issues or prompting consumers to update software, Ecosia, Mozilla and DuckDuckGo have submitted to the ACCC that pop-ups also add complexity to the switching process and discourage consumers from changing to another browser or search engine.¹⁹⁴ In its submission to the ACCC, Mozilla noted that messages presented by platforms such as Google and Microsoft during the switching process ‘can be confusing and lead consumers away from their preferred browser’.¹⁹⁵ According to DuckDuckGo, the number of clicks required for users to change their default search engine from Google to another provider on Android mobile devices, ‘combined with the reality that most consumers do not change their defaults, means that only highly motivated users will be able to make the switch’.¹⁹⁶

The ACCC considers that repeated interruptions to the switching process through pop-up warnings, and requiring users to take certain actions before being able to continue the process, not only inconveniences users, but increases the difficulty of switching. Such dark patterns would likely discourage consumers who are in the process of switching by adding extra friction to the process.

Prominence of options

While users can change the pre-installed browser or pre-set search engine on their device, this process may not always be straightforward or easy. Design features that reduce the prominence of options or settings that allow users to switch, and draw on consumers’ behavioural biases, such as their limited time and attention, may further exacerbate this difficulty. Academic literature suggests that consumers tend to gravitate towards more prominent items and may miss less prominent items.¹⁹⁷

The ACCC found examples of browsers, including Edge, requiring users to select an option near the bottom, or at the bottom, of a list to change the pre-set search engine on their browser. For example, to change the pre-set search engine on Edge on a desktop device (Windows 10 Pro), users have to navigate multiple screens to access the required setting.

¹⁹⁴ Mozilla, [Submission to the ACCC's Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 12; Ecosia, [Submission to the ACCC's Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 5; DuckDuckGo, [Submission to the ACCC's Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 125.

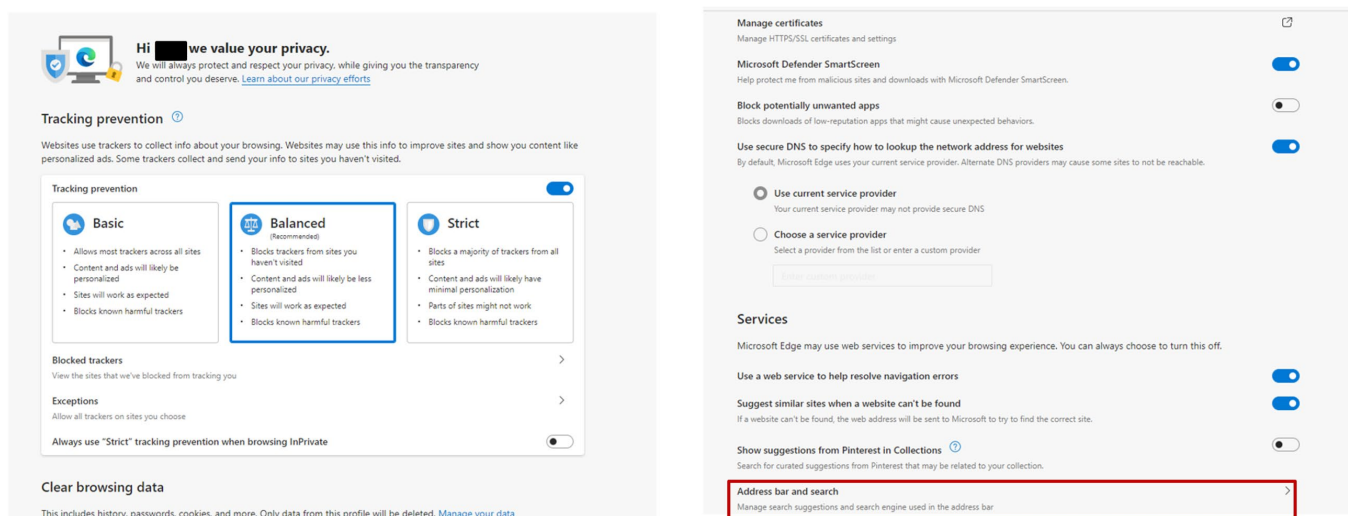
¹⁹⁵ Mozilla, [Submission to the ACCC's Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 12.

¹⁹⁶ DuckDuckGo, [Submission to the ACCC's Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 125.

¹⁹⁷ CMA, [Online Platforms and Digital Advertising Market Study, Appendix Y: choice architecture and Fairness by Design](#), 1 July 2020, p Y29; OECD, [Improving online disclosures with behavioural insights](#), April 2018, p 24.

Users need to click the menu icon on the home screen, then select ‘Settings’, then ‘Privacy, search and services’. As shown in figure 2.9 below, users are then required to scroll down and select ‘Address bar and search’.

Figure 2.9: Changing the pre-set search engine on Microsoft Edge



First screen

Second screen (upon scrolling)

Source: Screenshots taken on an HP Elitebook 840 laptop running Windows 10 Pro by ACCC on 7 May 2021

The ACCC considers that the process to change browsers or search engines is not intuitive and requires consumers to make the effort to find certain options, and/or have the knowledge to switch. This can hinder consumers from switching to alternative services and contribute to consumer lock-in.

Framing and wording of options

The presentation of options through their framing and wording can influence consumers’ decision-making.¹⁹⁸ Framing refers to the use of specific language to infer positive or negative connotations, which can influence consumers who interpret the information based on its context, and not just the facts presented.¹⁹⁹ Consumers may be vulnerable to platforms’ presentation of options due to characteristics that place individuals at risk of detriment, personal circumstances, the nature of a particular situation, or because of the need to make complex choices.²⁰⁰

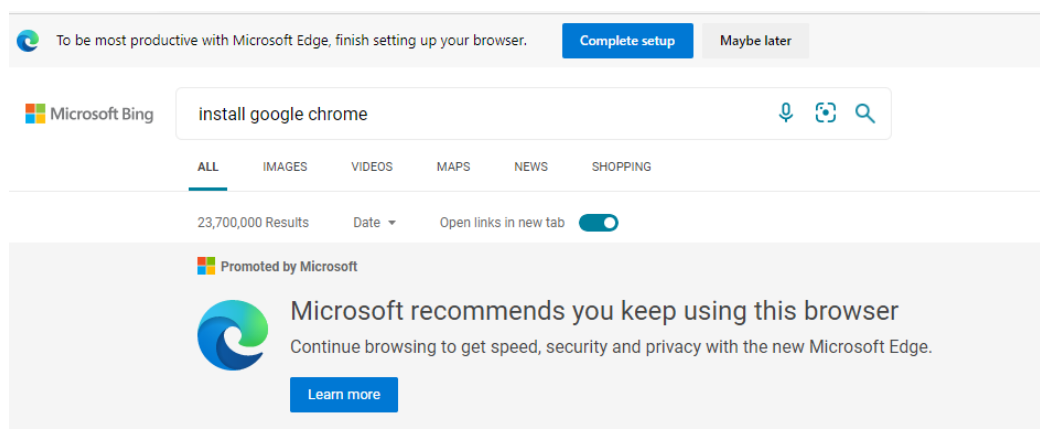
The ACCC observed examples of platforms using framing when presenting options to influence consumer choices. For example, when the query ‘install Google Chrome’ was searched on Bing, a prominent banner advertisement for Edge was displayed above the search results. As shown in figure 2.10 below, this message stated that Microsoft ‘recommends’ Edge and that users who continue to use Edge would get ‘speed, security and privacy’, which may lead consumers to infer that these features would not be available on an alternative browser.

¹⁹⁸ For example, see A Tversky and D Kahneman, [The Framing of Decisions and the Psychology of Choice](#), *Science*, Volume 211 (1981). See also, OECD, [Improving online disclosures with behavioural insights](#), April 2018, p 24, for how this translates on digital devices.

¹⁹⁹ CMA, [Online Platforms and Digital Advertising Market Study, Appendix Y: choice architecture and Fairness by Design](#), 1 July 2020, pp Y25–26.

²⁰⁰ OECD, [Challenges to consumer policy in the digital age](#), September 2019, pp 32–35; European Commission, [Understanding consumer vulnerability in the EU’s key markets](#), February 2016, p 2.

Figure 2.10: Banner advertisement shown when searching ‘install Google Chrome’ on Microsoft Edge

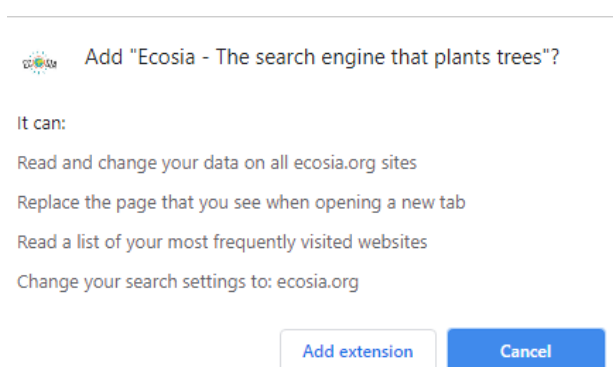


Source: Screenshot taken on an HP Elitebook 840 laptop running Windows 10 Pro by ACCC on 24 May 2021

Pop-up warnings can have particularly negative connotations and impact consumers’ willingness to switch to other services. Warnings and pop-ups may be particularly harmful where they highlight issues to do with a new provider that might concern users, without also noting that the current provider may raise the same issues.

During the process of downloading the Ecosia browser extension to Chrome, Google presented a pop-up message to users. As shown in figure 2.11 below, the message stated that the browser extension can ‘read and change your data...’ and ‘read a list of your most frequently visited websites’. Google also provided 2 options to users: ‘Add extension’ or ‘Cancel’, with the ‘Cancel’ option displayed more prominently. Ecosia noted in its response to the Issues Paper that pop-up warnings during the switching process may discourage consumers from switching.²⁰¹

Figure 2.11: Prompt when downloading the Ecosia browser extension on Google Chrome²⁰²



Source: Screenshot taken on an HP Elitebook 840 laptop running Windows 10 Pro by ACCC on 20 May 2021

The ACCC considers that platforms’ choice architecture may exacerbate behavioural biases, such as consumers’ limited attention, and consumers’ sensitivity to the framing and wording of options to discourage users from switching their search engine or browser.²⁰³

²⁰¹ Ecosia, [Submission to the ACCC’s Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 5.

²⁰² A similar message was presented to users during the process of installing the Ecosia browser extension on Edge.

²⁰³ CMA, [Online Platforms and Digital Advertising Market Study, Appendix Y: choice architecture and Fairness by Design](#), 1 July 2020, p Y29.

2.3.2. Lack of meaningful choice and information asymmetries between consumers and platforms

Information asymmetries between consumers and platforms make it difficult for consumers to compare the service offerings of different browsers and search engines. This may be due to any combination of factors, including consumer awareness and/or conduct by suppliers.

As a result, consumers may not be able to make meaningful choices about their browser or search engine, and may remain with services that do not meet their preferences. For example, certain services that offer stronger privacy protections, or have a unique value proposition (such as Ecosia's focus on environmental sustainability or OceanHero's focus on addressing ocean pollution) are not often offered as pre-set defaults or pre-installed on devices. Consumers that value these features must actively search for, and download or change their settings to use, these services.

Where consumers do search for and seek to use alternative search engines, platforms' user interfaces and the use of dark patterns may make it more difficult for consumers to exercise their decision to switch providers. As discussed above, the process for changing browsers or search engines is not always straightforward, and can be made more difficult when users encounter dark patterns such as friction and forced action during the process.²⁰⁴ For consumers with lower levels of digital literacy, the process may be particularly difficult or unintuitive, making it more cumbersome for them to exercise any meaningful choice.

Consequently, consumers may remain with browsers or search engines that may not meet their preferences or needs, which may, in some instances, result in consumer harm. For example, consumers might remain with service providers that have weak privacy protections or harmful data collection practices, contrary to the consumer's preferences. In its submission to the Issues Paper, ACCAN submitted that consumer harms, such as data collection for the purposes of advertising, can arise from the design of default arrangements.²⁰⁵ The Centre for Responsible Technology also raised concerns about the impact of Google's business model on consumers and Google's ability to leverage its default positions in browsers and search engine services to benefit itself. It submitted that 'Google's business model of surveilling users, capturing their data and monetising it makes it a problematic default option for browsers and search engines...While Google's business model is not the focus of this inquiry, it is notable that Chrome and Search provides key gateways to Google's surveillance model'.²⁰⁶

Similarly, Dr Katherine Kemp states that 'weak privacy protections cause objective detriment to consumers ... [which is] not a matter of personal preference. Objectively speaking, degraded data privacy imposes future costs on consumers.'²⁰⁷ These harms include 'data breach, identity theft, hacking and fraud; exposure of sensitive information the consumer would not wish to disclose through unanticipated collection and tracking, and/or re-identification of de-identified information; and exposure to manipulation-based marketing,

²⁰⁴ Other reports have noted that platforms can dissuade users who attempt to move away from the pre-installed browser or pre-set search engine, due to the complexity of switching or hassle factors, which make it difficult for consumers to exercise their choices. See also Subcommittee on Antitrust, Commercial and Administrative Law of the Committee of the Judiciary, [Investigation of Competition in Digital Markets: Majority Staff Report and Recommendations](#), 6 October 2020, pp 81–82; CMA, [Online platforms and digital advertising market study, Appendix H: default positions in search](#), 1 July 2020, p H29.

²⁰⁵ ACCAN, [Submission to the ACCC's Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 2.

²⁰⁶ Centre for Responsible Technology, [Submission to the ACCC's Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 4.

²⁰⁷ K Kemp, [Concealed data practices and competition law: why privacy matters](#), *European Competition Journal*, 16:2-3 (2020), pp 28–29.

profiling, segmenting or scoring which can lead to discrimination, exclusion or disadvantage more generally for the consumer.²⁰⁸

The ACCC notes the ongoing review of the Privacy Act by the Attorney-General's Department, which is considering a range of issues including the need for strengthened privacy protections and consent requirements including default privacy settings.²⁰⁹ As noted in the *DPI Final Report*, the current privacy framework does not adequately address the harm arising from information asymmetries and choice architecture that discourage, or make it harder, for consumers to switch to alternative services.²¹⁰

The ACCC also considers that the inability of consumers to make informed choices, and thereby switch to alternative suppliers, can restrict competition on the basis of quality, such as privacy protections or innovative business models.²¹¹ This may increase barriers to entry and expansion in the supply of general search engine services, which is further discussed in chapter 3.

Platforms should do more to ensure that their user interfaces are designed fairly for consumers

The ACCC considers that all platforms should design user interfaces with the interests of consumers in mind, and refrain from using negative choice architecture or dark patterns that exploit consumers' behavioural biases or make it difficult for consumers to exercise their choices. While this Report has considered choice architecture and dark patterns within the context of browsers and search engine services, these issues are not limited to only these services. For example, the OECD noted research that indicates that dark patterns are increasingly widespread online, with a 2019 sweep conducted by the International Consumer Protection Enforcement Network observing that 429 of 1,760 retail websites and apps contained potential dark patterns.²¹² In addition, the OECD noted that all consumers could be potentially vulnerable to dark patterns in certain contexts, as they can be designed to target particular behavioural biases, and due to the ability of firms to collect and use consumer data to further target consumers.²¹³

While the ACCC notes Google's submission that default settings do not undermine effective user choice, and that changing defaults can be 'straightforward'²¹⁴, the ACCC has observed choice architecture and dark patterns that can make switching more difficult for users. This includes the use of framing and wording when installing the Ecosia browser extension on Chrome, as discussed above.

The ACCC notes overseas proposals such as CMA's Fairness by Design. The ACCC considers that a broad, principles-based obligation requiring platforms to present information and choices in a way that is accessible, balanced, and empowers consumers to exercise their settings and controls, should be considered in Australia.²¹⁵

²⁰⁸ K Kemp, [Concealed data practices and competition law: why privacy matters](#), *European Competition Journal*, 16:2-3 (2020), p 29. Also see DJ Solove and D Keats Citron, [Privacy Harms](#), *GW Law Faculty Publications & Other Works*, (2021), pp 18–42.

²⁰⁹ Attorney-General's Department, [Review of the Privacy Act 1988 \(Cth\) – Issues Paper](#), October 2020, accessed 27 September 2021, pp 4, 42-44.

²¹⁰ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, pp 434, 455.

²¹¹ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 23.

²¹² OECD, [Roundtable on Dark Commercial Patterns Online, Summary of discussion](#), 19 February 2021, p 5.

²¹³ OECD, [Roundtable on Dark Commercial Patterns Online, Summary of discussion](#), 19 February 2021, pp 5–6. See also BEUC, [EU Consumer Protection 2.0 Structural asymmetries in digital consumer markets](#), March 2021, p 18 which explores the concept of vulnerability arising from the design of user interfaces.

²¹⁴ Google, [Submission to the ACCC Digital Platforms Services Inquiry Third Interim Report](#), 7 May 2021, p 9.

²¹⁵ CMA, [Online Platforms and Digital Advertising Market Study, Appendix Y: choice architecture and Fairness by Design](#), 1 July 2020, p Y41-42; CMA, [Online platforms and digital advertising final report](#), 1 July 2020, p 27, 358.

The ACCC considers that platforms should adopt best practices when designing their user interfaces, and at a minimum, should not inhibit consumers from engaging with their settings or controls, or interfere with consumers' autonomy by disabling choices that have been affirmatively made by users. This could also require platforms to commit to reporting on material changes to the design of their user interfaces and the results of user testing. This would assist in ensuring that platforms provide consumers with an experience that is fair and respects their autonomy, and allow regulators to pro-actively monitor potential consumer harms. The ACCC considers that obligations like this should be subject to oversight by an external body.

Potential measure: platforms should design their user interfaces in the best interests of consumers

Platforms should design user interfaces in a way that facilitates consumer choice and respects individual autonomy. For example, platforms should have an obligation to refrain from using dark patterns or designing user interfaces in a way that exploits consumers' behavioural biases and vulnerabilities. This principles-based obligation should apply to all digital platform services operating in Australia and should be subject to oversight by an external body. This will be subject to consultation with the market and further consideration in the fifth interim report of the Digital Platform Services Inquiry, due September 2022.

2.3.3. Dark patterns may raise serious concerns where they undermine consumer autonomy

Dark patterns and negative choice architecture may raise serious concerns where products or services are designed in a way that is exploitative or deceptive, or may undermine consumer autonomy.

Mathur et al (2021) consider that dark patterns may impact individual autonomy, where it influences users to make choices they would not otherwise have selected, or where a dark pattern denies user choice, obscures available choices or makes it difficult for consumers to exercise their choice.²¹⁶ Dark patterns may also contribute to a decrease in individual welfare, where it increases the 'cognitive burden' on consumers.²¹⁷ For example, the use of nagging, or making it difficult to unsubscribe, may cause consumers to 'expend unnecessary time, energy and attention'.²¹⁸

The ACCC analysed the user journeys to change the default search engine on Chrome, Edge, Firefox, Internet Explorer and Safari, and via downloading browser extensions on Edge and Chrome on a desktop device. The ACCC's analysis found changing the default search engine on Firefox and Safari to be a straightforward process.²¹⁹

²¹⁶ A Mathur, J Mayer, and M Kshirsagar, [What Makes a Dark Pattern... Dark?: Design Attributes, Normative Considerations, and Measurement Methods](#), *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, Online virtual conference, 8–13 May 2021, pp 18–19.

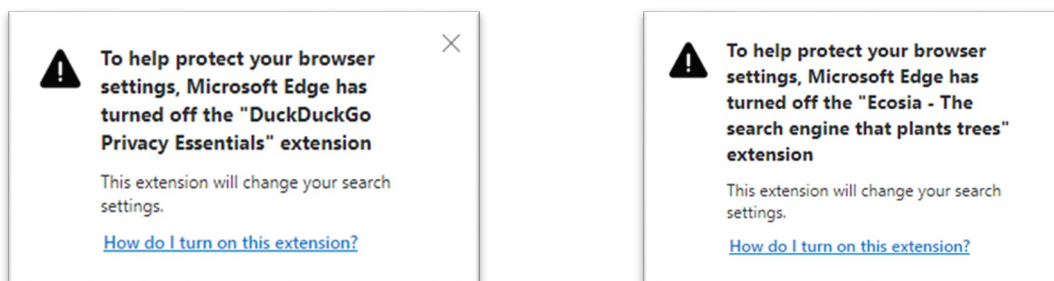
²¹⁷ A Mathur, J Mayer, and M Kshirsagar, [What Makes a Dark Pattern... Dark?: Design Attributes, Normative Considerations, and Measurement Methods](#), *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, Online virtual conference, 8–13 May 2021, p 14.

²¹⁸ A Mathur, J Mayer, and M Kshirsagar, [What Makes a Dark Pattern... Dark?: Design Attributes, Normative Considerations, and Measurement Methods](#), *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, Online virtual conference, 8–13 May 2021, p 14.

²¹⁹ For example, changing the default search engine on Firefox on a desktop device involved 6 steps. After opening the Firefox browser, users were required to access the settings of the Firefox browser and click on 'Options'. Users were then required to click 'Search' and then choose a default search engine from the list of providers. Similarly, changing the default search engine on Safari on a desktop device involved 6 steps. This involved opening Safari, then accessing the 'Preferences' page on Safari's menu bar, then navigating to the 'Search' tab. Users could then choose their default search engine from a drop down list.

In contrast, the ACCC observed examples of negative choice architecture by Chrome (as discussed above) and by Edge. In particular, the ACCC observed that Edge disabled the choices affirmatively made by consumers by turning off the 'DuckDuckGo Privacy Essentials' and 'Ecosia – The search engine that plants trees' browser extensions after they were downloaded to a desktop device. Figure 2.12 below shows the message presented to users.

Figure 2.12: Pop-ups showing that Microsoft Edge disabled the DuckDuckGo browser extension and the Ecosia browser extension



Source: Screenshots taken on an HP Elitebook 840 laptop running Windows 10 Pro by ACCC on 20 May 2021

The ACCC observed that Microsoft disabled the DuckDuckGo and Ecosia browser extensions after users already selected 'Add extension' twice, and confirmed that the browser extension could access and change certain settings (as discussed above).²²⁰ In addition, to ultimately enable the browser extensions, users were required to take several additional steps, including going to Microsoft's website, and navigating their settings to allow the extensions. Gunawan et al (2021) suggest that the level of effort needed from users may indicate the seriousness of the dark pattern.²²¹

Microsoft's website states that it 'automatically turns off extensions that might change your preferred settings' in order 'to prevent extensions from changing the preferences you set up when you installed Microsoft Edge'.²²² While the ACCC recognises that there may be legitimate reasons, such as security, for software applications to be disabled by a browser, this conduct appears to restrict consumers' freedom of choice and may leave consumers worse off.

There should be a prohibition on certain unfair trading practices

The ACCC is concerned that some use of negative choice architecture and dark patterns can significantly impede choice and can be especially harmful to consumers. However, such conduct may not currently be captured by existing Australian law. The ACCC considers that serious instances of dark patterns and negative choice architecture, including some of the conduct identified in this Report, further support a prohibition on unfair trade practices, as recommended in the *DPI Final Report* (recommendation 21).²²³

²²⁰ For example, the DuckDuckGo extension can 'read and change all your data on the websites you visit' and 'change your search settings to: duckduckgo.com'. For Ecosia, the browser extension can 'read and change your data on all Ecosia.org sites', 'change the page you see when you open a new tab', 'list your most frequently visited websites' and 'change your search settings to ecosia.org'.

²²¹ J Gunawan et al, [Towards an Understanding of Dark Pattern Privacy Harms](#), *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, Online virtual conference, 8-13 May 2021, p 3.

²²² Microsoft, [Why does Microsoft Edge turn off extensions I've installed?](#), *Microsoft Support*, accessed 13 September 2021.

²²³ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 401.

CPRC, CHOICE and Consumer Action Law Centre (CALC) support the introduction of an unfair practices prohibition in Australia.²²⁴ CPRC considers that practices which ‘materially undermine consumer autonomy – either by impacting or restricting consumer’ freedom of choice without good reason’²²⁵ should be prohibited, including ‘nudge and dark pattern techniques that subtly manipulate consumers’ decisions in ways that leave, or are likely to leave, them materially worse off’.²²⁶ CALC has also noted that ‘Business models that target consumer vulnerabilities or behavioural biases, distorting the consumer’s free choice’ should be prohibited.²²⁷ The Productivity Commission has previously noted that the consumer policy framework should aim to prevent practices ‘that are unfair or contrary to good faith’.²²⁸

There is also recognition internationally that choice architecture and dark patterns that have the potential to cause consumer harm should be prohibited where they amount to unfair conduct.²²⁹ For example, in September 2020, the FTC reached a settlement and submitted proposed settlement orders that would impose a US\$10 million fine to ABCmouse, a subscription service offering online education programs for children.²³⁰ The FTC alleged that the company engaged in illegal marketing and billing practices, including using dark patterns to make it difficult to cancel subscription fees.²³¹ In January 2021, the Norwegian Consumer Council filed a complaint to the Norwegian Consumer Protection Authority alleging that Amazon’s use of dark patterns makes it difficult to unsubscribe from Amazon Prime and constitutes an unfair commercial practice.²³²

The Netherlands Authority for Consumers & Markets (ACM), Norwegian Consumer Council and CNIL have also released guidance on dark patterns.²³³ According to the ACM, ‘practices that take advantage of consumers’ instinctive behaviour to nudge them toward particular

²²⁴ CPRC, [Unfair Trading Practices In Digital Markets – Evidence and Regulatory Gaps](#), December 2020, pp 2, 9; CHOICE, [Unfair but not illegal: When should the consumer law step in?](#), May 2021, accessed 13 September 2021; Consumer Action Law Centre, [Submission to Treasury’s consideration of the ACCC’s Digital Platforms Inquiry Final Report](#), 2 September 2019.

²²⁵ CPRC, [Unfair Trading Practices In Digital Markets – Evidence and Regulatory Gaps](#), December 2020, p 9.

²²⁶ CPRC, [Unfair Trading Practices In Digital Markets – Evidence and Regulatory Gaps](#), December 2020, p 10.

²²⁷ Consumer Action Law Centre, [Submission to Treasury’s consideration of the ACCC’s Digital Platforms Inquiry Final Report](#), 2 September 2019, p 4.

²²⁸ Productivity Commission, [Review of Australia’s Consumer Policy Framework, Volume 2 Chapters and Appendixes](#), No.45, 30 April 2008, p 13.

²²⁹ In the US, legislation has been introduced to address dark patterns. In March 2021, the California Attorney General announced new regulations under the California Consumer Privacy Act that prohibit the use of dark patterns that obscure or make it difficult for consumers to opt-out from the sale of their personal information. A bipartisan bill to prohibit platforms from using dark patterns to obtain personal data from users was also introduced in the US Senate in April 2019 (the Deceptive Experiences To Online Users Reduction Act (DETOUR Act) by Senators Mark Warner and Deb Fisher. As at the time of writing, the DETOUR Act was referred to the Committee on Commerce, Science and Transportation. Representative Lisa Blunt Rochester introduced the DETOUR Act, a House version of the bill of the same name introduced by Senators Warner and Fisher on 16 December 2020. The bill was referred to the House Committee on Energy and Commerce. See [Senators Introduce Bipartisan Legislation to Ban Manipulative ‘Dark Patterns’](#), 29 April 2019, accessed 13 September 2021; Congress, [DETOUR Act](#), accessed 13 September 2020; EPIC, [California Bans “Dark Patterns” That Subvert CCPA’s Opt-out Rights](#), 16 March 2021, accessed 13 September 2021; A Hancock, [Additional Regulations Approved for the California Consumer Privacy Act](#), *Electronic Frontier Foundation*, 17 March 2021, accessed 13 September 2021; Congress, [H.R.8975 DETOUR Act](#), accessed 13 September 2021; S Morrison, [Dark patterns, the tricks websites use to make you say yes, explained](#), *Vox*, 1 April 2021, accessed 13 September 2021.

²³⁰ FTC, [Children’s Online Learning Program ABCmouse to Pay \\$10 Million to Settle FTC Charges of Illegal Marketing and Billing Practices](#), 2 September 2020, accessed 13 September 2021.

²³¹ See also FTC’s complaint that alleged that Progressive Leasing mislead consumers about its pricing, including through the use of dark patterns. See FTC, [Rent-To-Own Payment Plan Company Progressive Leasing Will Pay \\$175 Million to Settle FTC Charges It Deceived Consumers About Pricing](#), 20 April 2020, accessed 13 September 2021; FTC, [Statement of Commissioner Rohit Chopra](#), 2 September 2020; FTC, [Children’s Online Learning Program ABCmouse to Pay \\$10 Million to Settle FTC Charges of Illegal Marketing and Billing Practices](#), 2 September 2020, accessed 13 September 2021.

²³² Norwegian Consumer Council, [You can log out, but you can never leave](#), 14 January 2021; Norwegian Consumer Council, [Amazon manipulates customers to stay subscribed](#), 14 January 2021, accessed 13 September 2021.

²³³ For example, see Norwegian Consumer Council, [Deceived by Design](#), 27 June 2018; Norwegian Consumer Council, [You can log out, but you can never leave](#), 14 January 2021; CNIL, [Shaping Choices in the Digital World](#), 16 April 2019; ACM, [Guidelines on the protection of the online consumer](#), 2020.

choices that are not in their interest are misleading²³⁴ and may amount to an unfair commercial practice.

Some dark pattern conduct may be covered by existing prohibitions in the ACL, including prohibitions on misleading or deceptive conduct, false or misleading representations, unfair contract terms, and, in the case of extremely harmful or manipulative dark pattern practices, unconscionable conduct. However, many dark pattern and nudge practices, even those that cause considerable consumer harm, would fall outside existing prohibitions.

The ACCC recognises that not all instances of dark patterns or negative choice architecture would, or should, amount to an unfair trading practice. The ACCC considers that a prohibition on unfair trading practices should be carefully developed to capture conduct that is particularly harmful to consumers and significantly impedes consumer choice and autonomy.

For the reasons outlined above, the ACCC reiterates its support of a prohibition on unfair trading practices. Such a prohibition would result in greater alignment between relevant legislation in Australia and overseas.

Further support for recommendation 21 of the Digital Platforms Inquiry Final Report: prohibition on certain unfair trading practices

The ACCC reiterates its support for the amendment of the *Competition and Consumer Act 2010* to include a prohibition on certain unfair trading practices. The scope of such a prohibition should be carefully developed such that it is sufficiently defined and targeted, with appropriate legal safeguards and guidance.

²³⁴ ACM, [Guidelines on the protection of the online consumer](#), 2020, p 47.

3. Competition effects of pre-installation and default arrangements for search engine services

Key findings

- Consumers access search engine services through a number of search access points, most commonly through their browsers. Various arrangements exist through which browsers and other search access points are pre-installed on devices, and search engines are pre-set as the default search service for these access points.
- These arrangements occur either through:
 - Vertical integration, where, for example, providers of browsers and search services set their own search service as the default on their browser (e.g. Google Chrome and Google Search, and Microsoft Edge and Bing), and OEMs pre-install their own browsers on their devices (e.g. Apple Safari on Apple devices, and Samsung Internet on Samsung devices).
 - Contractual arrangements (e.g. between Google and Apple, for Google Search to be the default search service on Safari and Apple devices).
- As discussed in chapter 1, Google and Microsoft supply operating systems, as well as search engine services and browsers. This provides Google (for mobile devices run on Android) and Microsoft (for devices run on Windows) the ability to bundle operating systems and other services to obtain favourable pre-installation and default positions for their respective browsers and search engines.
- Google's pre-installation and default arrangements with Apple, OEMs that use Android and the GMS apps (Android OEMs), and browser suppliers, give Google access to a substantial majority of search users in Australia. Google's agreements with Android OEMs mean that Chrome, the Google Search app and other key search access points are pre-installed on most Android devices supplied in Australia. Other arrangements that Google has with Apple, Samsung, and other suppliers of browsers (such as Mozilla), as well as Google's vertical integration with Chrome, mean that Google is the default search engine on the vast majority of search access points in Australia. Taking into account Microsoft Bing's vertical integration with Edge, there is very little opportunity for other search engines to access pre-installation and default arrangements in any meaningful scale.
- Given the power of defaults, the various arrangements have provided Google with access to scale and the ability to realise network effects, which are crucial to competition in search. In particular, Google's dominant position ensures it has more click-and-query data than rivals, allowing it to continually improve the relevance of its search results, which attracts users and further extends and entrenches its dominance. This dominance also leads to higher revenue, providing Google with the ability to make larger payments to OEMs and browser providers than any rival search engine.
- The ACCC considers that Google's pre-installation and default arrangements have likely contributed to its current dominance in search by foreclosing competitors from accessing users and realising economies of scale and network effects. This has likely reduced competition in the market for general search engine services, with likely implications for quality and innovation in search engine services. There may also have been price impacts for search advertising. The ACCC is further considering the specific allegations that have been made against Google over the course of the inquiry under the competition provisions of the CCA, including in relation to the default arrangements between Google and OEMs.

- The competitive constraint placed on Google by search providers reliant on syndicated search engine services is likely to be limited. In practice, Microsoft is the only supplier of downstream search engine services and search engine providers reliant on Microsoft would likely be constrained by the same limitations that Bing faces in terms of scale and network effects. The ACCC has not seen evidence of restrictions on downstream suppliers' ability to determine many aspects of their competitive offering at this time.

This chapter provides the ACCC's assessment of the competitive effects of pre-installation and default arrangements between suppliers of search engine services, suppliers of browser services and OEMs in Australia, as well as considering the effect of search syndication agreements. The chapter is structured as follows:

- **Section 3.1** provides an overview of pre-installation and default arrangements between search providers and browsers, and between search providers and OEMs. In particular, section 3.1 explains the role of vertical integration in ensuring access to consumers for search engines, and discusses the various arrangements that search providers have with OEMs and suppliers of browser services.
- **Section 3.2** discusses the likely competitive impact of the various pre-installation and default arrangements on the market for general search engine services in Australia. In particular, it looks at how consumers access search engine services, and the impact of the various pre-installation and default arrangements on the ability of search engine services to access consumers. It also looks at the ability of search engines that do not have those arrangements in place to achieve sufficient scale and network effects, and what this means for competition in the market for general search engine services in Australia.
- **Section 3.3** considers the effect of agreements for the supply of syndicated search engine services on competition in search. In particular, it looks at the incentive for upstream suppliers of search engine services that crawl and index the web to enter into syndication agreements with downstream search providers. It also considers whether syndication agreements are likely to raise competition concerns in the market for general search engine services.

3.1. Overview of pre-installation and default arrangements

This section provides an overview of the various arrangements through which search engines and browsers are pre-installed on mobile and desktop devices, and how search engines obtain default positions on browsers and for voice assistants. The main two methods through which pre-installation and default positions are achieved are:

- vertical integration between the various services provided within device ecosystems
- agreements between parties that operate different services within device ecosystems.

Before discussing the types of arrangements that exist, section 3.1.1 provides a brief overview of the business models that operate across the various device ecosystems. This provides context to the incentives and monetisation strategies at play that result in the various pre-installation and default arrangements.

3.1.1. Business models across device ecosystems

As discussed in chapter 1, device ecosystems are comprised of the operating system, software and applications that run on a device.²³⁵ In Australia, the primary suppliers of device ecosystems are Google and Apple for mobile devices, and Microsoft and Apple for desktop devices. Each supplier exhibits varying degrees of vertical integration across device manufacturing, operating system, browser and search engine services, and each of these ecosystem business models derive some revenue from search engines. However, the monetisation strategies of these companies vary, depending on the scope of the services offered within their ecosystems and their relationships with search engines and other services in the device ecosystems, as discussed below in box 3.1.

Box 3.1: Google, Apple and Microsoft's business models

Google, Apple and Microsoft are the primary suppliers of device ecosystems in Australia. However, each have unique business models and revenue streams.

Google

Google produces, among other things, its own mobile devices (Pixel) and desktop devices (Chromebook), both of which have relatively low market shares in Australia and overseas. Google also owns the Android operating system (for mobile devices), as well as the Chrome browser, the Google Search engine, the Play Store (an app store), and many other digital services. Search advertising is Google's key source of revenue.²³⁶ Financial statements provided to ASIC indicate that in 2020, 85% of Google's revenue came from advertising, comprising both search and display advertising.²³⁷ The Chrome browser is provided without any monetary charge and it is an important channel through which to gain users of Google Search, as the default search engine on Chrome.

The free licensing of the Android operating system is an important avenue for Google to increase users of Google Search and other Google products. As discussed further below, device manufacturers that license the Android operating system typically also license the GMS suite of apps, which includes popular Google apps, such as Google Search, Chrome, YouTube, Google Maps and the Google Play Store. Google is also a significant supplier of digital advertising services, as discussed in the ACCC's *Digital Advertising Services Inquiry Final Report*.²³⁸

Apple

Apple manufactures its own desktop, mobile and tablet devices, which use Apple's proprietary operating systems (macOS and iOS). In contrast to Google's Android operating system, Apple's iOS and macOS operating systems are both 'closed source' meaning its contents and code are not published nor freely licensed.²³⁹ Apple's revenue is primarily earned through sales of Apple's hardware products (e.g. devices such as iPhones, Macs, iPads and other wearables and accessories) and services (comprising commissions from the App Store and advertising revenue, including revenue earned from search advertising via default agreements with Google, which are discussed further below). According to a public report filed by Apple for the fiscal year 2020, around 80% of Apple's global revenue in that year came from the sale of hardware, with the remaining

²³⁵ See ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, p 150: A mobile ecosystem is defined as '[m]obile operating systems and the mobile devices and software products that make use of mobile operating systems'.

²³⁶ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 61.

²³⁷ Based on Google Australia Pty Ltd financial statements and reports for the year ending 31 December 2020 lodged with ASIC, p 22.

²³⁸ ACCC, [Digital Advertising Services Inquiry Final Report](#), September 2021.

²³⁹ ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, p 20.

20% coming from the sale of services.²⁴⁰ Apple also owns the Safari browser, which is exclusively pre-installed on its devices and cannot be downloaded or used on non-Apple devices. Google Search is currently the default search engine on Apple's Safari browser as well as being the search engine used for relevant queries on Apple's voice assistant, Siri.

Microsoft

Microsoft operates a vertically integrated ecosystem through its Microsoft devices (the Surface laptops and tablets), the Windows operating system (which is licensed to third party OEMs and is the leading operating system for desktop devices in Australia), the Edge browser, and the Bing search engine. Prior to 2014, Microsoft's revenue primarily relied on licensing fees charged for use of the Windows operating system and the Microsoft Office suite.²⁴¹ Microsoft is now moving to a business model which emphasises product integration, a 'freemium' software package and a focus on its cloud computing business.²⁴²

Microsoft also earns search advertising revenue through its search engine, Bing, though this only represented 5% of its total global revenue in the year ending 30 June 2021.²⁴³ Microsoft pre-sets Bing as the default search engine on its browser, Edge. Edge is pre-installed on most devices that use the Windows operating system. Bing also provides syndicated search engine services to downstream search engines in exchange for a share of their search advertising revenues. This is explored further in section 3.3.

Search engines typically operate as multi-sided markets, providing search engine services to consumers on one side of the market and search advertising services to advertisers on the other side. In multi-sided markets, demand on one side of the market tends to depend on demand on the other side of the market. In the case of search engines, advertisers will, all else being equal, be attracted to a search engine with more users (discussed more in section 3.2). This represents a cross-side network effect between the two sides of the market, which has implications for pricing on both sides.

In particular, to attract users, search engines tend to offer search engine services at zero monetary price to consumers. Instead, search advertising tends to be the main source of revenue for suppliers of search engine services in Australia as well as globally.²⁴⁴ In general, a search engine will be able to earn greater revenue if it can attract more consumers to use search engine services on one side, and more advertisers to use search advertising services on the other side. Given cross-side network effects, ensuring access to consumers is especially important to ensuring monetisation of search engine services.

As discussed in chapter 1, a key way for search engines to access consumers, and therefore monetise its search engine services, is through arrangements with browser suppliers and OEMs to be pre-installed and/or set as a default on the browser and other search access points on a device. The following sections discuss these arrangements further.

²⁴⁰ Apple Inc., [Form 10-K lodged with the United States Securities and Exchange Commission](#), for the fiscal year ended September 26, 2020, p 21.

²⁴¹ S Ross, '[Apple vs Microsoft Business Model: What's the difference?](#)', *Investopedia*, 10 August 2021, accessed 13 September 2021.

²⁴² S Ross, '[Apple vs Microsoft Business Model: What's the difference?](#)', *Investopedia*, 10 August 2021, accessed 13 September 2021.

²⁴³ Microsoft Corporation, [Form 10-K lodged with the United States Securities and Exchange Commission](#), for the fiscal year ended 30 June 2021, p 95.

²⁴⁴ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 58.

3.1.2. Vertical integration across device ecosystems

Vertical integration is one of the key ways in which pre-installation and default arrangements are achieved and, as noted in box 3.1, vertical integration varies across businesses. Relevant to competitive outcomes in the general search engine market in Australia, there is vertical integration:

- **Between device manufacturers and suppliers of browser services.** For example, Apple manufactures mobile and desktop devices (iPhones, iPads and Macs) and owns the iOS operating system, the macOS operating system, the Safari browser and the Siri voice assistant (among other services). This means Apple can pre-install Safari and Siri on all of its devices. Samsung is another example of a mobile device manufacturer that also owns a browser (Samsung Internet), which it pre-installs on its devices (alongside Chrome, which is installed under contractual agreements, as discussed below).
- **Between suppliers of browser services and search engine services.** In particular, Google owns Chrome and Google Search, providing it with the ability to set Google Search as the default search engine on Chrome. Similarly, Microsoft owns the Edge browser and the Bing search engine, which it sets as the default on Edge. On mobile devices, some smaller search engines, such as DuckDuckGo and Ecosia, are also vertically integrated, meaning that consumers can download and install a combined search engine/browser on their mobile device (but not on desktop devices).

3.1.3. Agreements with device manufacturers

As discussed in chapter 2, consumers tend to stick with the pre-installed browser and pre-set search engine services, with this being more pronounced for mobile devices. This section discusses the various pre-installation agreements between providers of search engine services and OEMs.

Mobile devices: agreements between Google and Android OEMs, and Google and Apple

There are two main distinctions between the types of agreements that Google has with mobile OEMs. First, Google has a suite of agreements with OEMs that use the Android operating system, which cover use of the Android operating system, installation of Google apps on Android devices, and revenue sharing arrangements (Android OEMs). Secondly, Google has agreements with Apple for Google Search to be the pre-set search engine across a number of search access points on Apple's devices.

Agreements between Google and Android OEMs

As discussed in chapter 1, mobile device OEMs require an operating system to provide a functioning device and therefore, need to choose or develop an operating system to run on their device. The majority of non-Apple mobile device OEMs choose Android, one of the two main operating systems available for mobile devices, since the other main operating system, Apple iOS, cannot be installed on non-Apple devices.²⁴⁵ The Android operating system is an attractive choice for mobile device OEMs as it is provided for free, and OEMs can install a range of Google's apps, including its app store (Google Play), which attracts end users.²⁴⁶

An OEM has two options when choosing to use Android on its devices:

- using the free open-source Android code without a contract with Google, or

²⁴⁵ ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, p 20.

²⁴⁶ F Etro and C Caffarra, "[On the Economics of the Android Case](#)" (2017) 13(2-3) European Competition Journal 13, p 286.

- using the Android code along with the GMS suite of apps such as Google's Play Store, Google Maps, Chrome and Google Search, under a licence from Google, called a Mobile Application Distribution Agreement (MADA).²⁴⁷

As noted by the United States Department of Justice (DOJ), signing a preinstallation agreement is the only way for an Android device manufacturer to preinstall any Google app, including Google Play.²⁴⁸ As such, very few OEMs use the free open-source Android code without a contract with Google as it is generally not commercially feasible for an OEM to supply a device without a pre-installed suite of apps, most notably a pre-installed app store, as discussed further below.

Broadly, there are 3 categories of agreements between Google and OEMs for access to the GMS:

- **Anti-Fragmentation Agreements (AFAs)/Android Compatibility Commitments (ACCs)** are a pre-condition to receiving a licence to distribute devices with Google apps and APIs (Application Programming Interfaces, or the set of technical specifications that enable software applications to communicate with each other, operating systems and hardware). AFAs and ACCs set strict limits on the OEMs' ability to sell Android devices that do not comply with Google's technical and design standards and prohibit OEMs from manufacturing Android 'forks'²⁴⁹ of their own, distributing devices with Android forks or using their brands to market forks on behalf of third parties. Google began shifting its anti-forking restrictions from AFAs to ACCs in 2017.²⁵⁰ Google has a number of AFA or AFC contracts with global OEMs whose devices are supplied in Australia.²⁵¹
- **Mobile Application Distribution Agreements (MADAs):** provide OEMs with a free licence to pre-install the GMS suite of apps on their mobile devices. An OEM must first enter into an AFA/ACC before it can enter a MADA. Among other apps, the GMS apps include Google Search, Chrome, Gmail, Google Maps, YouTube and the Google Play Store.²⁵² As discussed further below, a MADA typically requires that if one Google app is pre-installed, then the full suite of Google apps nominated by Google must be pre-installed.
- **Revenue Sharing Agreements (RSAs)/Mobile Incentive Agreements (MIAs):** require OEMs to agree to the pre-installation and placement of Google apps, including Chrome and Google Search, in exchange for a share of the revenue earned by Google apps. In order to qualify for revenue sharing, the OEM must meet certain setup, configuration, minimum usage and placement requirements. In particular, these agreements include requirements about where certain apps will be placed on the device and certain restrictions on the OEM's ability to remove any of the GMS apps from the device. These agreements also set Google Search as the default search engine across a number of key search access points. Further, under some of these agreements, Google pays OEMs revenue to forego pre-installing rival search engine services on their Android devices.²⁵³

Figure 3.1 shows the relationships between these agreements.

²⁴⁷ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, pp 12–13.

²⁴⁸ *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, para 76.

²⁴⁹ Modified versions of the published source code are called 'Android forks'

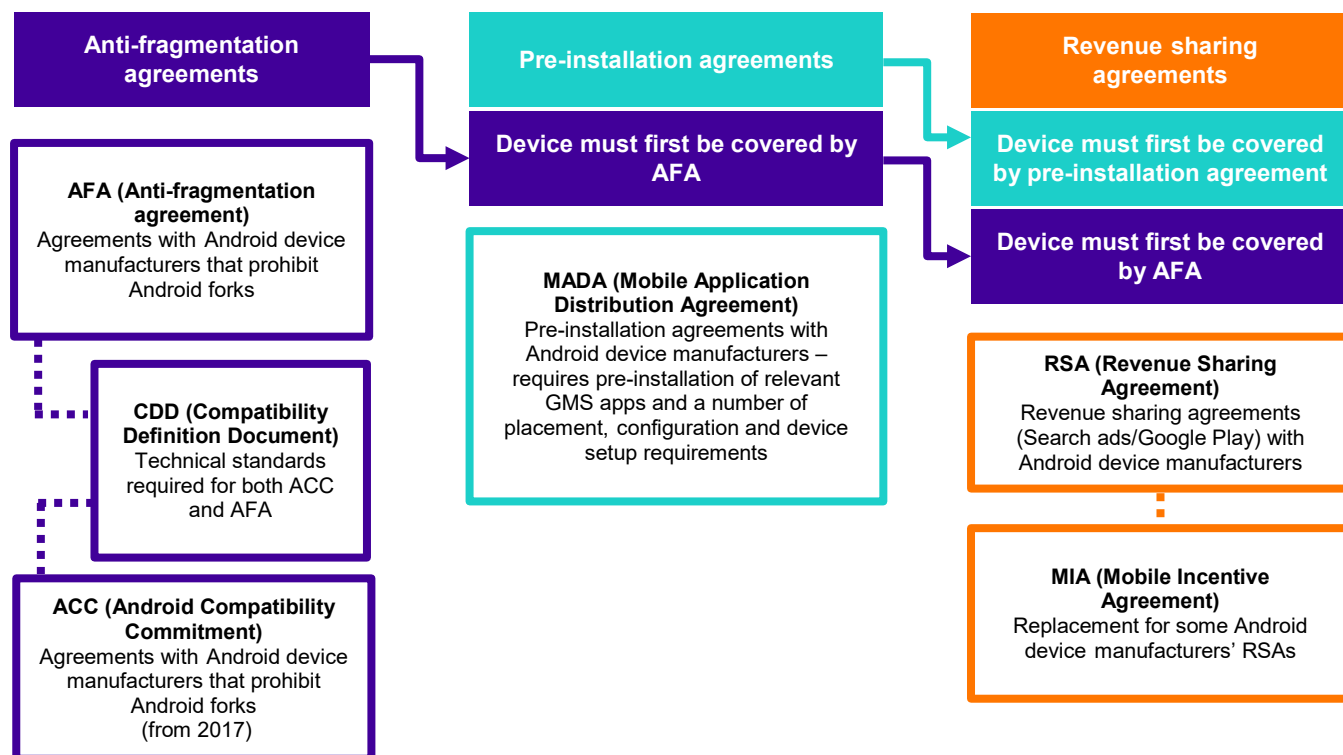
²⁵⁰ ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, p 25.

²⁵¹ Information provided to the ACCC.

²⁵² *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, para 73.

²⁵³ European Commission, Commission Decision, [Case AT.40099 – Google Android](#), 18 July 2018, para 192.

Figure 3.1: Categories of agreements between Google and OEMs



In 2018, the EC made a finding in relation to the illegal restrictions on Android device manufacturers and mobile network operators to cement Google’s dominant position in general search (see box 3.2). These agreements are no longer in place in Europe. However, these agreements continue in other jurisdictions, including in Australia and in the United States, where they are currently the subject of proceedings as discussed further in box 3.7.

Box 3.2: European Commission Android decision (2018)

In July 2018, the EC found that, between 2011 and 2014, Google imposed illegal restrictions on Android device manufacturers and mobile network operators to cement its dominant position in general internet search. The EC fined Google €4.34 billion for breaching EU antitrust rules in respect of abuse of a dominant position.²⁵⁴

The decision concerned 3 specific types of contractual restrictions that it found Google had imposed between 2011 and 2014 on device manufacturers and mobile network operators, being:

- Requiring Android device manufacturers to pre-install the Google Search app and Google Chrome browser as a condition of licensing the Google Play Store.
- Making payments to certain large device manufacturers and mobile network operators on condition that they exclusively pre-installed Google Search on their devices.
- Preventing manufacturers wishing to pre-install Google apps from selling devices running on alternative versions of Android that were not approved by Google (known as Android forks).

²⁵⁴ European Commission, [Antitrust: Commission fines Google €4.34 billion for illegal practices regarding Android mobile devices to strengthen dominance of Google’s search engine](#), 18 July 2018, accessed 13 September 2021.

Google filed an appeal against the decision of the EC to the General Court of the European Union on 9 October 2018.²⁵⁵

This decision relates to Google's operations in Europe. The practices at the centre of the EC's allegations are still taking place in Australia and in other jurisdictions, as outlined above.

Effect of Google's agreements with Android OEMs on search engine services

The overwhelming majority of OEMs that license the Android operating system also license the GMS suite of apps.²⁵⁶ The ACCC considers that this occurs because Google's apps can only be pre-installed as a bundle, and because of the 'must have' nature of a number of these apps (and particularly, the Play Store). This leads to Google Search being the pre-set default across all search access points for the majority of Android devices, giving it an advantage compared to its rivals in terms of access to users. This is discussed further below.

One of the key apps in the GMS is Google's Play Store. App stores provide an important function by allowing consumers to easily access and load a large variety of apps onto their mobile devices. While it is technically possible for a consumer to load apps onto an Android mobile device without the Google Play Store (through a non-Google app store or through a process known as 'sideloading'²⁵⁷), this requires the user to have considerable expertise. Further, Google has publicly warned that trying to sideload Google apps onto a non-authorised Android device poses a significant security risk.²⁵⁸ Even if users are able to successfully install applications through a competing app store or by sideloading, many apps rely on APIs, such as location services and push notifications. Without access to these APIs, which is generally granted via MADAs, these apps may have limited functionality.²⁵⁹

For these reasons, it is not generally commercially feasible for an OEM to supply a device without a pre-installed app store.²⁶⁰ As noted in the ACCC's *Second DPSI Interim Report*, the majority of OEMs see the Play Store as a 'must have' service and Google has market power in mobile app distribution in Australia.²⁶¹ Google is able to leverage its position in mobile app distribution by requiring OEMs seeking to install the Play Store to also install the other services included in the GMS (including Chrome and Google Search).²⁶² Hence, there is an incentive for OEMs to enter into MADAs (as well as an AFA/ACC,) with Google in order to gain access to the Play Store and commit to preload a full suite of Google apps.²⁶³

The OEM must also accept Google's other pre-installation and default requirements and promise not to use a modified version of Android on any devices they sell.²⁶⁴ Relatedly, the ACCC's *Second DPSI Interim Report* found that the popularity of Google's first-party apps

²⁵⁵ Official Journal of the European Union, Action brought on 9 October 2018 — Google and Alphabet/Commission (Case T-604/18), [C 445 English addition](#), 10 December 2018, pp 21-22.

²⁵⁶ *State of Utah et al. v Google LLC*, [Complaint filed in the US District Court for the Northern District of California](#), 7 July 2021, para 125.

²⁵⁷ 'Sideloading' refers to the practice of downloading and installing an application onto an Android device which is sourced from a third party rather than an official retailer, like Google Play.

²⁵⁸ BBC News, [Google warns Huawei owners against 'sideloading' its apps](#), 24 February 2020, accessed 13 September 2021.

²⁵⁹ *State of Utah et al. v Google LLC*, [Complaint filed in the US District Court for the Northern District of California](#), 7 July 2021, para 116.

²⁶⁰ FM Scott Morton and DC Dinielli, [Roadmap for a Monopolization Case Against Google Regarding the Search Market](#), *Omidyar Network*, June 2020, p 27.

²⁶¹ ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, p 4.

²⁶² FM Scott Morton and DC Dinielli, [Roadmap for a Monopolization Case Against Google Regarding the Search Market](#), *Omidyar Network*, June 2020, p 27.

²⁶³ *State of Utah et al. v Google LLC*, [Complaint filed in the US District Court for the Northern District of California](#), 7 July 2021, paras 112-114.

²⁶⁴ B Edelman and D Geradin, [Android and Competition Law: Exploring and Assessing Google's Practices in Mobile](#), 12:2-3 (2016) *European Competition Journal*, p 167.

and the desire of many consumers to have a device that makes these available ‘out of the box’, results in most OEMs using Google’s version of the Android operating system, and accepting the MADA.²⁶⁵

In this way, the MADAs assist in implementing Google’s strategy of making the GMS an all-or-nothing choice for mobile OEMs, increasing the likelihood of OEMs choosing Google’s suite of apps and therefore expanding Google’s reach and access to consumers for its search and other services.²⁶⁶

Further, there may be an incentive for OEMs to enter into MADAs with Google because they are a pre-requisite to any revenue sharing arrangements with Google.

Google submits that its agreements do not preclude OEMs from pre-installing other search or browser apps alongside Google’s apps and provides the example of Samsung’s browser (Samsung Internet) being placed more prominently than Chrome on the default home screen of a Samsung mobile device.²⁶⁷ While the MADAs do not prevent OEMs from pre-installing rival search or browser apps, they do require certain GMS apps to be in a prominent position on the home screen.²⁶⁸ In particular, the MADAs require preloading of the Google Search Widget, Google Play and an icon clearly labelled ‘Google’ that provides access to pre-installed Google apps. Under these MADAs, OEMs are not restricted or limited in terms of pre-installing or determining the placement of any other non-Google apps on their devices.²⁶⁹ However, many OEMs that have MADAs also have RSAs (or MIAs), which commonly contain incentives for OEMs that meet particular pre-installation and placement requirements, as discussed below.²⁷⁰

The ACCC considers these requirements significantly increase the likelihood that end users will turn to these search access points to conduct a search on an Android device. In addition, as discussed in chapter 2, the ACCC has observed that some apps are unable to be deleted by the user. The DOJ filing (discussed further in box 3.7) notes that the MADAs require OEMs to ‘preinstall Chrome, the Google Search app and other apps in a way that makes them undeletable by the user.’²⁷¹

Finally, RSAs allow Android OEMs to monetise their access to consumers. For some OEMs, this represents a significant source of revenue, which can be used to invest in further improving their devices or lowering device prices for consumers.²⁷² The ACCC understands that RSAs differ from OEM to OEM but that broadly, RSAs are structured as follows:

- In order to qualify for a share of advertising revenue, a device must meet certain set-up requirements, meet certain configuration requirements and comply with minimum usage and placement requirements.
- For qualifying devices, OEMs are then entitled to receive a share of advertising revenue for a specified set of search access points. Revenue sharing amounts under the RSA are individually negotiated and vary from agreement to agreement.²⁷³

²⁶⁵ ACCC, [Digital Platform Services Inquiry Second Interim Report](#), 28 April 2021, p 26.

²⁶⁶ B Edelman and D Geradin, [Android And Competition Law: Exploring And Assessing Google's Practices In Mobile](#), 12:2-3 (2016) *European Competition Journal*, p 171.

²⁶⁷ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 13.

²⁶⁸ Information provided to the ACCC.

²⁶⁹ Information provided to the ACCC.

²⁷⁰ *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, para 81.

²⁷¹ *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, para 76.

²⁷² Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, pp 2–3.

²⁷³ Information provided to the ACCC.

Google has a number of AFA/ACC, MADA and RSA/MIA contracts with global original equipment manufacturers (OEMs) whose devices are supplied in Australia.²⁷⁴ Public estimates suggest that Google has paid billions of dollars from its search advertising revenue to Android OEMs globally under these RSAs/MIAs.²⁷⁵ Android devices account for around 43% of mobile devices in Australia, of which Samsung is the largest, accounting for approximately 54% of Android mobile devices (or 23% of all mobile devices) in Australia.²⁷⁶

The minimum usage and placement requirements for each OEM vary for each search access point, but most commonly require that search queries that are entered through a given access point are, by default, channelled through Google.com (or their international equivalents).²⁷⁷ The RSAs seen by the ACCC contain incentives for the relevant OEM to set key Google apps, such as Google Play, Google Search, and Google Assistant, as default apps on their Android device. In some cases, to access financial incentives offered under the RSA, the OEM is required not to pre-install, or set as a default, alternatives to a limited number of Google apps.²⁷⁸

Most RSAs have specific initial configuration requirements for voice assistant services. RSAs commonly include financial incentives for OEMs that comply with certain initial requirements, including that devices do not promote alternative voice assistants.²⁷⁹ Media reports indicate that the EC is investigating certain exclusivity and tying practices by Google related to its voice assistants.²⁸⁰

These various exclusivity requirements prevent alternative search engine services from being able to gain ready access to a large share of consumers. Even where there are exceptions to the exclusivity requirements regarding certain search access points, the revenue sharing arrangements are such that OEMs are heavily incentivised to pre-install, and set as default, many of these search access points to Google Search in order to maximise their revenue.

The ACCC acknowledges that there are benefits from having key apps installed on mobile devices, as discussed in chapter 2. The ACCC also acknowledges the benefits to OEMs from greater revenue, which may benefit consumers in the form of cheaper or higher quality devices. However, the ACCC is concerned about the competitive effects of these and other arrangements on the general search engine services market, and potentially other related markets, in Australia. The combined effect of these agreements may increase barriers to entry in each of the downstream services that rely on access to consumers as an entry point. These concerns, as they relate to general search engine services, are discussed in more detail in section 3.2. Such concerns have also been raised in other jurisdictions, namely in the European Union (see box 3.2).

²⁷⁴ Information provided to the ACCC.

²⁷⁵ *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, para 4; D Petrov, [Search wars: Google may pay Samsung \\$3.5 billion in license fees](#), *phoneArena.com*, accessed 13 September 2021; Adnan F, [Google will pay Samsung \\$3.5 billion to remain the default search engine](#), *SamMobile*, accessed 13 September 2021.

²⁷⁶ Statcounter, [Mobile operating system market share Australia June 2020 - June 2021, June 2021](#); Statcounter, [Mobile vendor market share Australia June 2020 - June 2021, June 2021](#).

²⁷⁷ *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, paras 144-146.

²⁷⁸ Information provided to the ACCC.

²⁷⁹ Information provided to the ACCC.

²⁸⁰ F Yun Chee and N Balu, [Google's voice assistant in new EU antitrust investigation](#), *MLex reports*, *Reuters*, 9 September 2021, accessed 13 September 2021.

Revenue sharing arrangements between Google and Apple

The ACCC has also considered the revenue sharing arrangements in place between Google and Apple for Google Search to be the default search engine on Apple's browser, Safari²⁸¹, and other search access points on Apple mobile and desktop devices, including for the use of Google Search by Apple's voice assistant, Siri.

Since 2005, Google has maintained contracts with Apple to be the pre-set search engine on the Apple Safari browser, subject to users having the ability to switch the default search provider via the Settings menu.²⁸² In addition, Apple uses Google's syndicated results feed for internet searches on Apple's Siri and Spotlight (Apple's system-wide search feature).²⁸³ Under these contracts, Apple receives a share of search advertising revenue generated by the use of Google Search on Apple devices. In its proceedings against Google, the DOJ referred to public estimates that the share of Google Search advertising revenue which Apple receives is between US\$8-12 billion per year globally for Google's default status for search through Safari, and to use Google for Siri and Spotlight in response to general search queries, on Apple devices.²⁸⁴ The ACCC has examined these revenue sharing arrangements between Apple and Google and confirms that the 2020 share of Google Search advertising revenue received by Apple was in the upper range of the public estimates. The DOJ estimates that these arrangements represented between 15-20% of Apple's net global income in 2020.²⁸⁵ These arrangements represent the significant value of these distribution channels to Google.

As discussed in chapter 1, just over half of all mobile devices in Australia are Apple devices, and 31% of desktop devices run on Apple's macOS. Given the significant amounts paid by Google to Apple to be the default search engine on its various search access points, it is unlikely that a rival search engine, much less a new entrant, would be able to match Google's payments given Google's dominance in search. These arrangements effectively foreclose rival search engines from accessing a substantial proportion of Australian consumers that use search engine services.

Desktop devices: agreements between Microsoft and OEMs

Similar to the agreements discussed above, a number of desktop OEMs have agreements with Microsoft to have Edge pre-installed on their desktop devices.²⁸⁶ As Bing is the default search engine on Edge, this also leads to Bing being the pre-set search engine on these desktop devices. Microsoft also has an agreement covering Amazon tablets.²⁸⁷ These arrangements allow relevant OEMs to benefit from revenue sharing of Bing's search ad revenue earned on the device in exchange for the pre-installation of Edge and other Microsoft software.

Similar to Google's agreements with OEMs, Microsoft's arrangements ensure that Bing is set as the default search engine on a number of search access points, including on the pre-installed browser (Edge) and voice assistant service. One key difference from the Google contracts is that Microsoft's contracts are separate to, and do not involve, installation and

²⁸¹ This default arrangement does not apply to Safari users in China.

²⁸² Information provided to the ACCC.

²⁸³ Information provided to the ACCC.

²⁸⁴ US Department of Justice v Google LLC, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, para 118.

²⁸⁵ US Department of Justice v Google LLC, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, para 118.

²⁸⁶ CMA, [Online platforms and digital advertising market study, Appendix H: Default positions in search](#), 1 July 2020, p H12.

²⁸⁷ CMA, [Online platforms and digital advertising market study, Appendix H: Default positions in search](#), 1 July 2020, p H19.

use of the Windows operating system.²⁸⁸ Installation and use of the Windows operating system is covered under separate licensing arrangements which involve payments by Windows OEMs to use the operating system and associated software (for example, Word, Excel and other Microsoft software).²⁸⁹

The numerous agreements between OEMs and suppliers of search engine services, Google and Microsoft, highlight the significant value of pre-installation agreements and default arrangements as a means to access consumers and gain scale. The effects of these arrangements, alongside Google's arrangements with browsers (discussed below), are discussed in more detail in section 3.2.

3.1.4. Agreements between suppliers of browsers and Google for Google Search

This section discusses in more detail the various contractual agreements between suppliers of browsers and Google for Google Search to be set as the default search engine on a browser, in exchange for a share of Google's search advertising revenue. This analysis is based on a review of several contracts that the ACCC has assessed as part of this Report.

Browsers and search engine services are closely intertwined, as discussed in chapter 2, and browsers are an important entry point for users to access search engine services, as discussed in chapter 1. Browsers are able to monetise access to consumers through a number of avenues including by sharing in search ad revenues and/or search royalties.

In particular, search engines may offer browsers a revenue sharing agreement for the search engine service to be pre-set as the default on that browser or to appear as an option to be set as a default search engine by a consumer. This is valuable to search engines as a key access point for reaching users. Such agreements are also valuable to browsers as a revenue source. Indeed, Mozilla in its submission to the ACCC stated, 'search integrations are the primary revenue source for many independent browsers, including Firefox.'²⁹⁰ This revenue may be used to fund the browser services or other services in the device ecosystem.

There are contracts between Google and certain browser suppliers that provide for Google Search to be the pre-set search engine.²⁹¹ For example, Google is the pre-set search engine on the Safari browser, in addition to using Google's syndicated results feed for internet searches on Apple's Siri and Spotlight. Google is also the pre-set search engine on the Samsung Internet browser.²⁹² The ACCC understands that Google also has agreements with other browsers for Google to be the default search engine, including Mozilla's Firefox. Royalty payments for default search positions ordinarily contribute over 90% of Mozilla's Firefox annual global revenue, with Mozilla's financial statements indicating around 90% of these payments come from one search engine.²⁹³ As set out in table 1.4 above, Google Search is the default search engine on Firefox, with a number of other search engines that pay Mozilla to be alternative default search options. Given Google's default status on Firefox, and public reports of Google's payment to Mozilla exceeding US\$400 million a year, Google's payment to Mozilla likely makes up the majority of their revenue.²⁹⁴

²⁸⁸ Information provided to the ACCC.

²⁸⁹ Microsoft, [Product Licensing](#), accessed 13 September 2021.

²⁹⁰ Mozilla, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 May 2021, p 7.

²⁹¹ Information provided to the ACCC.

²⁹² Information provided to the ACCC.

²⁹³ Mozilla, [Independent Auditors' Report and Consolidated Financial Statements](#) as of 31 December 2019, 16 October 2020, p 4, 27.

²⁹⁴ A Maxham, [Google Is Paying Mozilla \\$450M Per Year To Be The Default Search Engine On Firefox](#), Android Headlines, 14 August 2020, accessed 13 September 2021.

Google, in its submission to the ACCC, submits that Apple has chosen Google as the pre-set search engine because of the quality of Google Search.²⁹⁵ Google also submits that the default arrangements between Google and Apple provide revenue to Apple that it can invest in innovation and to lower prices.²⁹⁶ In particular, in the absence of the arrangement, Google submits that Apple users would pay more for their devices.²⁹⁷

As discussed in chapter 1, the leading browsers by usage in Australia (with the exception of Edge) have Google Search set as the default search engine. These agreements heighten barriers to entry and expansion in the supply of search engine services by limiting rival search engines' access to the large user bases of the leading browsers in Australia.

Browsers may enter default arrangements with rival search engines, but there are few examples of browsers switching away from, and remaining with, rivals of Google Search. Box 3.3 below provides an example of a browser switching its default search engine provider due to a perceived decrease in usage.

Box 3.3: Case study – Mozilla Firefox

In late November 2014, Mozilla announced it was switching its default search engine on the Firefox browser from Google Search to Yahoo! globally for a period of 5 years.²⁹⁸ Although Yahoo! and Mozilla never disclosed the financial terms of the search agreement, Recode reported that it was worth US\$375 million annually, considerably more than Mozilla's previous deal with Google.²⁹⁹ Yahoo!'s annual payment was reportedly approximately US\$100 million more than Google paid in their last deal, which ran from late 2012 to late 2014.³⁰⁰

Mozilla terminated its agreement with Yahoo! after 3 years.³⁰¹ Mozilla alleged that Yahoo!'s poor search quality failed to retain users and search volumes over time, which reduced the potential revenue for Mozilla over the 5 year period. Mozilla further argued that Yahoo! never delivered on its promise to invest in and improve its search engine. The ACCC notes that Google stated in its submission to this inquiry that a large share of these users switched back to Google Search during this time.³⁰² Mozilla subsequently reinstated Google as the default search provider in the US, Canada, Hong Kong and Taiwan. In late 2020, media outlets reported that the Google/Mozilla arrangement was extended until 2023.³⁰³

²⁹⁵ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 19.

²⁹⁶ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 19.

²⁹⁷ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 20.

²⁹⁸ Mozilla, [Yahoo and Mozilla form strategic partnership](#), 19 November 2014, accessed 13 September 2021.

²⁹⁹ G Keizer, [Mozilla reports \\$338M revenue spike from settlement over Yahoo contract](#), *Computerworld*, 9 December 2020, accessed 13 September 2021.

³⁰⁰ G Keizer, [Verizon must pay even if Mozilla walks from Yahoo search deal](#), *Computerworld*, 26 July 2016, accessed 13 September 2021.

³⁰¹ Mozilla cited Verizon Communications Inc.'s acquisition of Yahoo Inc's core business for US\$4.48 billion in July 2017 to trigger a clause in its agreement with Yahoo! and nullify the remaining years of the strategic agreement. See G Keizer, [Mozilla reports \\$338M revenue spike from settlement over Yahoo contract](#), *Computerworld*, 9 December 2020, accessed 13 September 2021.

³⁰² Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 10.

³⁰³ K Lyons, [Mozilla and Google renew Firefox search agreement](#), *The Verge*, 15 August 2020, accessed 13 September 2021.

3.2. Impact of pre-installation and default arrangements

This section discusses the likely impact of the pre-installation and default arrangements discussed in section 3.1 on the market for general search engine services in Australia. These arrangements may also have implications in other related markets, such as those relating to browser services and app stores, for example, but these are not the focus of this Report.

3.2.1. Access to users of search engine services

Section 3.1 described the various pre-installation and default arrangements for browsers and search engine services on mobile and desktop devices. Importantly, it is the cumulative impact of these arrangements that is relevant to understanding whether or not they may reduce competition in the market for general search engine services in Australia. These arrangements relate to key channels through which search engines reach consumers. The ultimate impact of these arrangements will depend on how consumers access search engine services in practice, and what share of the various access points is subject to these arrangements.

As was discussed in chapter 1, there are several ways in which consumers can access search engine services. These vary somewhat depending on the device being used, but for both desktop and mobile devices, the most common way that consumers access search engine services is by typing a query into the browser's address bar: around 54% of respondents to the ACCC 2021 consumer survey access search this way on mobile devices, and 66% on desktop devices.³⁰⁴ This was also the most common method of accessing search for respondents to a Google survey of Android users (35.3%).³⁰⁵ Given that browser address bars are a key way in which consumers access search, the following section examines pre-installation agreements between browsers and OEMs.

Consumers tend to retain the pre-installed browser on mobile devices but less so on desktop devices

This section considers the cumulative effect of the browser pre-installation arrangements described in section 3.1. In particular, based on market shares in Australia as at June 2021:

- Apple's vertical integration as a supplier of macOS and iOS devices and the Safari browser resulted in Safari being exclusively pre-installed on around 31% of desktop devices (i.e. Mac computers)³⁰⁶ and 56% of mobile devices (i.e. iOS phones) in Australia.³⁰⁷ Overall, Safari was exclusively pre-installed on 44% of all devices in Australia (including mobile, tablets and desktop devices)³⁰⁸ and its market share was around 34%.³⁰⁹
- Agreements between Microsoft and desktop OEMs resulted in Edge and Internet Explorer (IE) being pre-installed on around 63% of desktop devices (i.e. Windows computers).³¹⁰ Overall, Edge and IE were pre-installed on 34% of all devices in Australia

³⁰⁴ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 23. This method of search was the preferred method for 44% of respondents on mobile devices (p 26). For respondents that only used one method to search on the desktop device, this was used by 61% (p 28).

³⁰⁵ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 34.

³⁰⁶ Statcounter, [Desktop operating system market share Australia June 2020 - June 2021](#).

³⁰⁷ Statcounter, [Mobile operating system market share Australia June 2020 - June 2021](#).

³⁰⁸ Statcounter, [Operating system market share Australia June 2020 - June 2021](#).

³⁰⁹ Statcounter, [Browser market share Australia June 2020 - June 2021](#).

³¹⁰ Given data availability, this is calculated assuming that all computers using the Windows operating system in Australia have Edge pre-installed. See Statcounter, [Desktop operating system market share Australia June 2020 - June 2021](#).

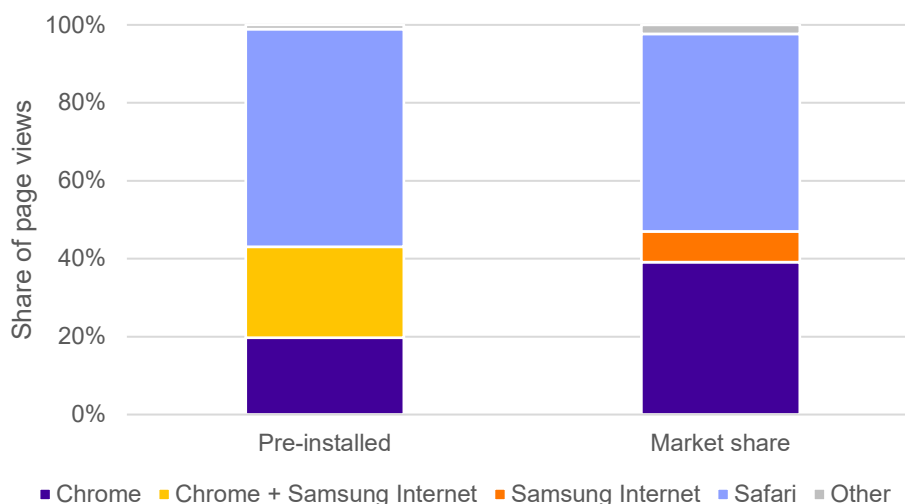
(including mobile, tablet and desktop devices)³¹¹ and Edge’s market share was just over 5%.³¹²

- Agreements between Google and Android OEMs resulted in Chrome being pre-installed on around 43% of mobile devices.³¹³ Overall, Chrome was pre-installed on 19% of all devices in Australia (including mobile, tablet and desktop devices)³¹⁴ and its market share was around 52%.³¹⁵

The correlation between pre-installation and resulting market share varies between mobile devices and desktop devices. As can be seen from figure 3.2, there is a strong correlation between the browsers that are pre-installed on mobile devices and the resulting market shares. In particular, in June 2021, Safari was pre-installed on 56% of mobile devices, and had a 51% market share of browsers on mobile devices.³¹⁶

Similarly, Chrome was pre-installed on 43% of mobile devices and had a 39% market share of browsers on mobile devices.³¹⁷ Devices manufactured by Samsung have both Chrome and Samsung Internet pre-installed, and these devices make up 23% of mobile devices supplied in Australia. Samsung Internet had a market share of 8%.³¹⁸

Figure 3.2: Pre-installation and market shares of browsers on mobile devices in Australia, June 2021



Source: ACCC analysis using Statcounter GlobalStats

Notes: For the purpose of this analysis the ACCC has assumed that all Android OEMs use GMS.

In contrast, pre-installation and market share figures do not appear to be highly correlated on desktop devices (see figure 3.3). Despite Edge and IE being pre-installed on 63% of desktop

³¹¹ Statcounter, [Operating system market share Australia June 2020 - June 2021](#).

³¹² Statcounter, [Browser market share Australia June 2020 - June 2021](#).

³¹³ This has been calculated on the assumption that all Android OEMs use GMS and using data from: Statcounter, [Mobile vendor market share Australia June 2020 - June 2021](#), June 2021; Statcounter, [Mobile operating system market share Australia June 2020 - June 2021](#).

³¹⁴ Statcounter, [Operating system market share Australia June 2020 - June 2021](#).

³¹⁵ Statcounter, [Browser market share Australia June 2020 - June 2021](#).

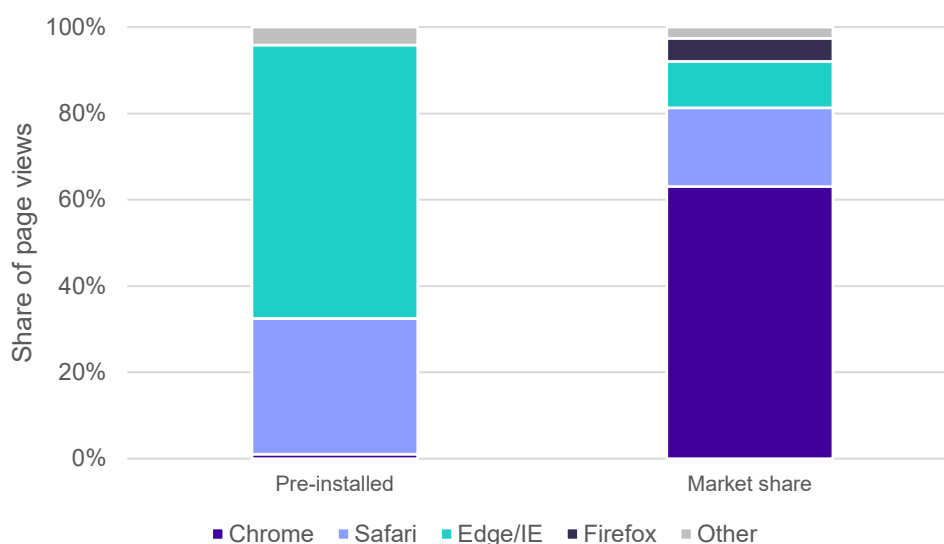
³¹⁶ Statcounter, [Mobile operating system market share Australia June 2020 - June 2021](#); Statcounter, [Mobile browser market share Australia June 2020 - June 2021](#).

³¹⁷ For the purpose of this analysis the ACCC has assumed that all Android OEMs use GMS. Analysis has been based on data from: Statcounter, [Mobile operating system market share Australia June 2020 - June 2021](#); Statcounter, [Mobile browser market share Australia June 2020 - June 2021](#).

³¹⁸ Statcounter, [Mobile vendor market share Australia June 2020 - June 2021](#); Statcounter, [Mobile browser market share Australia June 2020 - June 2021](#).

devices in June 2021, they only had an 11% combined market share for desktop devices.³¹⁹ Safari tracks more closely: it was pre-installed on 31% of desktop devices and had a market share of 18%.³²⁰ In contrast, Chrome was the most used browser on desktop devices (63%) despite being pre-installed on a very small share of desktop devices that run Chrome OS (1%).³²¹

Figure 3.3: Pre-installation and market shares of browsers on desktop devices in Australia, June 2021



Sources: ACCC analysis using Statcounter GlobalStats

Notes: For the purpose of this analysis, the ACCC has assumed that all desktop devices using Windows pre-installed Microsoft Edge and IE.

The ACCC 2021 consumer survey found that around 64% of consumers reported having downloaded at least one browser on their current computer.³²² In contrast, only around 38% of consumers reported having downloaded at least one browser to their mobile device.³²³ This trend is consistent with the findings shown in figures 3.2 and 3.3, in that both suggest that consumers are more likely to use a pre-installed browser on a mobile device as compared to a desktop device.

This suggests that pre-installation arrangements on mobile devices may be more ‘sticky’ than for desktop devices. This may be due to behavioural factors, as discussed in chapter 2. Alternatively, it may reflect higher consumer satisfaction with the browsers that are pre-installed on mobile devices as compared to desktop devices. That is, it may support the proposition that consumers do download alternative browsers if they are not satisfied with the default browser. However, it could also suggest that it is easier for browser providers with multiple consumer touch points to prompt users to switch. Google, for example, often prompts consumers to download Chrome on desktop devices when they visit other popular

³¹⁹ Based on the assumption that desktop devices using the Windows operating system pre-install Edge and Internet Explorer, and using data from Statcounter, [Desktop operating system market share Australia June 2020 - June 2021](#); Statcounter, [Desktop browser market share Australia June 2020 - June 2021](#).

³²⁰ Statcounter, [Desktop operating system market share Australia June 2020 - June 2021](#); Statcounter, [Desktop browser market share Australia June 2020 - June 2021](#).

³²¹ Based on the assumption that desktop devices using the Chrome operating system use GMS, and using data from Statcounter, [Desktop operating system market share Australia June 2020 - June 2021](#); Statcounter, [Desktop browser market share Australia June 2020 - June 2021](#).

³²² Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 49.

³²³ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 49.

Google websites, such as YouTube, by suggesting that user experience is improved on Chrome. Microsoft submits that:

‘... on Windows PCs, Google leverages its propriety and very popular web properties and services, such as Google Search, YouTube, Gmail, and Maps, to promote Google Chrome. When a Windows PC user visits one of these sites – which most do at some point – Google prompts them to download Google Chrome. If the user chooses to do so, the browser comes with Google Search set as the default.’³²⁴

It may also reflect differences in the devices themselves that drive differences in whether consumers are more likely to remain with default services. This could include factors such as screen size and the way in which consumers use the different types of devices (for example, mobile devices are more likely to be used ‘on the go’).

Even if some users download and use alternative browsers, there does appear to be some benefit in terms of consumer retention for browsers that are pre-installed. As can be seen from the above figure, these arrangements collectively reduce the ability of browsers other than Edge, Safari or Chrome to automatically reach a substantial share of consumers by being pre-installed on the relevant devices. As noted in section 3.2, Android OEMs require access to the Play Store for their users to readily access apps. The Play Store is bundled with other Google products such as Chrome and Android OEMs are provided incentives to pre-install Chrome in preferential locations on their devices and on an exclusive basis. These arrangements are therefore likely to limit the ability of independent browsers to enter into pre-installation agreements on Android devices.

Consumers largely stick with the default search engine on their browser

As noted previously, Google’s vertical integration as a provider of browser and search engine services provides Google Search with the default position on Chrome. Additionally, Google has agreements to have its GMS pre-installed on all of the main Android mobile devices in Australia. This includes pre-installation of Chrome, the Google Search app and Google’s search widget, all of which represent key access points for consumers to access search, as discussed in chapter 1.

In addition, Google has an agreement with Apple to be the pre-set search engine on Safari and for traffic to be directed to Google Search from Apple’s voice assistant, Siri. Google also has agreements with Samsung and Mozilla to be the pre-set search engine on their respective browsers. As shown in figures 3.2 and 3.3, these arrangements collectively account for much of the browser market, with a majority of the remainder being controlled by Microsoft through its vertical integration of Edge and Bing.

To understand how these arrangements affect the use of search engine services, the ACCC 2021 consumer survey provides useful insights about how consumers access search engine services:

- The browser address bar is the preferred way of accessing search engine services by consumers (preferred by 44% on mobile, and the main method for 61% of consumers on their desktop device, for those who only selected one method for accessing search).³²⁵ Unless the user has changed the default search engine in a browser, the default arrangements apply. In practice, few consumers reported that they regularly change the default search engine used by their browser of choice: in the last 2 years, around 18% of

³²⁴ Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 5.

³²⁵ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 24, 26.

consumers reported changing it on their mobile device and around 23% changed it on their desktop device.³²⁶

- Consumers also reported that they access search via search apps on their mobile device (used by 18% of respondents, and the preferred method for 11%) and the search widget (used by 21%, and the preferred method for 13%).³²⁷ Consumers may use the pre-installed search app or widget or they can install other search apps and can change the search widget. Around 34% of consumers reported that they had downloaded a search app to their mobile device in the last 2 years.³²⁸
- 36% of consumers reported that they access search via the home page of their preferred browser on their desktop device (for those using just one method to access search on a desktop device, this was used by 26% of respondents).³²⁹ The home page of a browser will typically be set as the web page of the default search engine as per the contractual or vertical arrangements in force but this can be changed by the consumer.
- While up to 18% of consumers reported that they use voice assistants on their mobile devices, it is the main method of searching for a very small share of consumers (5% of consumers prefer using the voice assistant on their mobile device and it is the only method of search for 1% of consumers on their desktop device).³³⁰ Voice assistants may be subject to default agreements and sometimes cannot be changed, as discussed in chapter 2.
- Two remaining methods side-step the default arrangements: consumers can navigate to the search engine's website (25% of consumers reported that this was their preferred method on their mobile device and 9% of consumers reported that this was the main method used on their desktop device, for those that only used one method to access search). Consumers can also download a browser extension, which is only available on desktop devices; some 3-6% of consumers reported that they use this method to access search engine services.³³¹

Figure 3.4 shows the usage of consumer access points for search that are relevant to the pre-installation and default search arrangements, and those that are not. The figure shows only about a quarter of consumers are accessing search in ways that are not covered by these arrangements on mobile devices and only 12% on desktop devices (absent users taking action to change the default search arrangements or to download competing search access points). Results from a survey undertaken by Google suggest that even fewer Android users might access search in ways where the default arrangements do not apply; the Google survey found only 16% of respondents navigated to a search engine's website to access search.³³² Hence, for most users, the default search arrangements matter, especially given the tendency for consumers to stick with the default search engine, as discussed in chapter 2.

³²⁶ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 54.

³²⁷ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 23–24.

³²⁸ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 74.

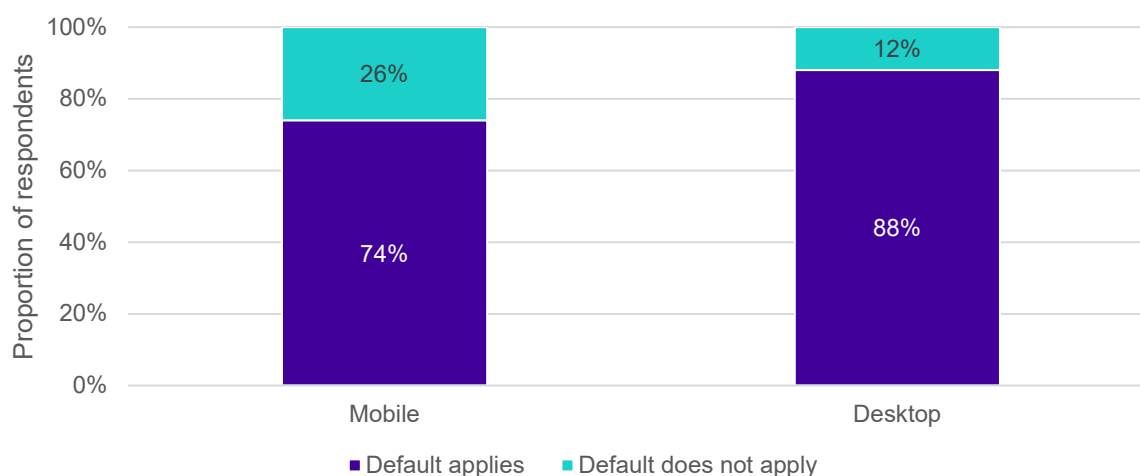
³²⁹ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 23, 26.

³³⁰ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 23, 24, 26.

³³¹ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 24, 26.

³³² Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 34.

Figure 3.4: Usage of search access points where search default arrangements apply



Source: Based on data from Figures 9 and 11: Roy Morgan Research, Consumer Views and Use of Web Browsers and Search Engines, September 2021.

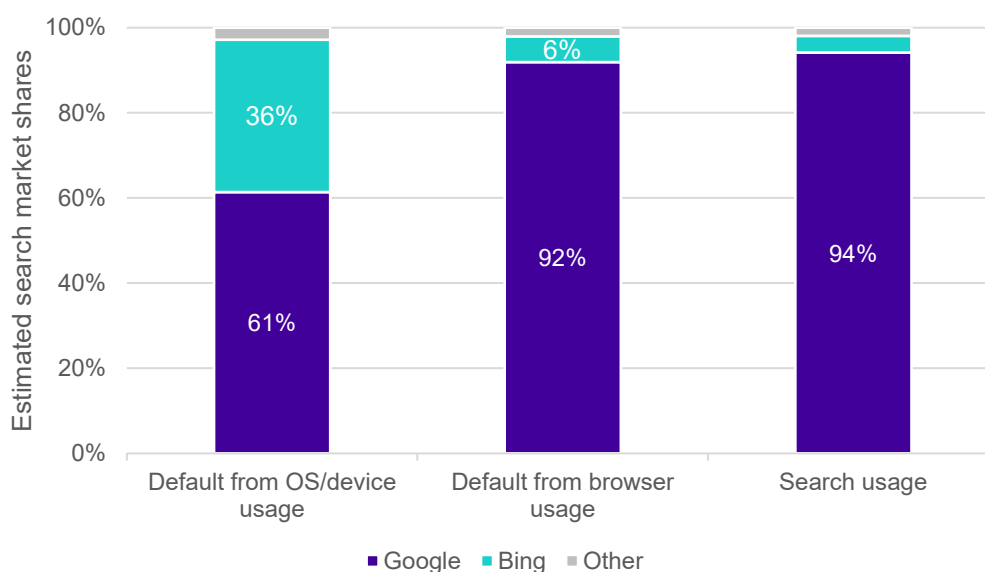
Notes: Search access points where the default applies on mobile devices include the address bar of the web browser, the search widget, search apps and the voice assistant. Search access points where the default applies on desktops include the address bar of the web browser, the home page of the browser, and the voice assistant. Defaults do not apply where a consumer has navigated to a search engine's website or downloaded a browser extension (on desktops only). Respondents that responded that they didn't know, or didn't or rarely used the Internet on their mobile device, were not included in the figure.

Having considered the variety of pre-installation and default agreements between Google, and OEMs and browsers listed above, combined with Google's vertical integration, it appears Google's rivals are foreclosed from accessing the majority of key entry points by which search engines access consumers. In particular, as at June 2021, and before a user has changed their device settings, Google Search was the default search engine on around 61% of all mobile and desktop devices in Australia (see the first column in figure 3.5 below). Bing was then the default search engine on around 36% of all mobile and desktop devices, largely due to its vertical integration with Edge on a large share of desktop devices (see figure 3.3). This left only around 3% contestable to other search engines as at June 2021.³³³ On mobile devices, Google Search had an even greater share of the default positions on browsers, accounting for almost 99% of default positions.³³⁴

³³³ Based on the assumption that devices using the Windows operating system pre-install Edge and Internet Explorer, and using data from Statcounter GlobalStats including: Statcounter, [Mobile vendor market share Australia June 2020 - June 2021](#); Statcounter, [Mobile operating system market share Australia June 2020 - June 2021](#); Statcounter, [Desktop operating system market share Australia June 2020 - June 2021](#); Statcounter, [Mobile browser market share Australia June 2020 - June 2021](#); Statcounter, [Desktop browser market share Australia June 2020 - June 2021](#); Statcounter, [Desktop vs mobile market share Australia June 2020 - June 2021](#).

³³⁴ Based on the assumption that mobile devices using the Android operating systems use GMS and mobile devices using the iOS operating system have Google Search pre-installed for key search access points on these devices, and using data from Statcounter, [Mobile operating system market share Australia June 2020 - June 2021](#).

Figure 3.5: Default search arrangements and market shares in Australia, June 2021



Sources: ACCC analysis using Statcounter GlobalStats

Notes: Based on mobile and desktop devices (i.e. not including tablet devices). For the purpose of this analysis the ACCC has assumed that all Android OEMs use GMS and all desktop devices using Windows have pre-installed Microsoft Edge and IE.

In practice, because of the high market shares of the browsers that Google Search has arrangements with, Google Search ends up as the pre-set default on around 92% of mobile and desktop devices (see the second column in figure 3.5).³³⁵ Apple’s high market share as a manufacturer of iOS mobile devices and macOS desktop devices means that arrangements to be the pre-set search engine on Apple devices are particularly valuable. The value of this is clear from the share of search advertising revenue Apple receives from Google for default status for search through Safari, and to use Google for Siri and Spotlight in response to general search queries, on Apple devices: an estimated US\$8-12 billion per year globally, as noted in section 3.1.³³⁶ Google also has default arrangements with Samsung (including Samsung Internet), other OEMs and independent browsers, as discussed above.

Google’s arrangements with Apple and other browser suppliers collectively mean that Google Search was the default search engine for approximately 40% of the browser market in Australia as at June 2021. Once Chrome is included, this increased to around 92% of the browser market. Of the remaining market, Bing was the default on around 5% of the browser market.³³⁷ These figures highlight that there is very little ability for rival search engines to access users through default arrangements with browsers. In reality, the market shares of providers of general search engine services in Australia are very similar to what could be expected if consumers tended to stick with the default search engine of their browser of choice, as demonstrated in the similarity between the second and third columns in figure 3.5.

³³⁵ Based on the assumption that mobile and desktop devices using the Android or Chrome operating systems use GMS, and using data from Statcounter GlobalStats including: Statcounter, [Mobile vendor market share Australia June 2020 - June 2021](#); Statcounter, [Mobile operating system market share Australia June 2020 - June 2021](#); Statcounter, [Desktop operating system market share Australia June 2020 - June 2021](#); Statcounter, [Mobile browser market share Australia June 2020 - June 2021](#); Statcounter, [Desktop browser market share Australia June 2020 - June 2021](#); Statcounter, [Desktop vs mobile market share Australia June 2020 - June 2021](#).

³³⁶ *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, p 37.

³³⁷ Based on data from Statcounter, [Browser market share Australia June 2020 - June 2021](#).

Consumers are generally free to change the search engine that they use, both on mobile and desktop devices, and across a range of search access points (except for certain access points, as discussed in chapter 2). However, as discussed in chapter 2, there are several behavioural, informational and practical barriers to consumer switching. This is likely to provide those search engines with pre-installation and default arrangements significant advantages in terms of accessing consumers compared to those without such agreements. While access to consumers is of key importance to any business, in and of itself, access to consumers is particularly important in markets that are subject to economies of scale and network effects, such as is the case for search engine services. This is discussed in more detail in the following section.

3.2.2. Impacts on scale and ability to realise network effects

As discussed in the DPI Final Report, search engines are subject to substantial barriers to entry and expansion.³³⁸ That is, there are substantial costs and other barriers to new entrants hoping to compete with incumbent search engines, or for non-dominant competitors wishing to expand. These are summarised in box 3.4.

Box 3.4: Barriers to entry and expansion in search

Same-side network effects occur when an increase in the number of platform users affects the value of the service to other users. In the case of search engines, data capturing the way that users search for information, often called ‘click-and-query data’ is valuable to being able to improve the search engine’s algorithm and hence, the relevance of its search results. When a search engine has more users, it has more data with which to improve the algorithm to generate reliable relevance rankings, especially for less common queries. While there is debate about how much data is required to derive relevant search results, some level of scale appears required in order to compete with Google Search.

Cross-side network effects operate such that having more users on a search engine will make that search engine more attractive to advertisers, all else being equal. This could occur where fixed costs associated with using a platform mean that advertisers tend to single-home (i.e. advertise with only one search engine). In this case, advertisers are much more likely to choose the dominant search engine. Further, more users means more data, which can be used to improve the effectiveness of search ads. This is beneficial for advertisers and is likely to increase the amount that they are willing to pay for these ads, improving the search engine’s ability to monetise.

Default arrangements and customer inertia, as discussed in chapter 2.

Branding: The fact that searching the Internet is commonly referred to as “Googling” reflects the strong brand recognition of Google Search. The ACCC 2021 consumer survey shows that almost all Australian consumers reported awareness of Google Search (with the majority of users also using Google Search).³³⁹ Alongside Google’s default arrangements, this is a significant and potentially costly hurdle for new entrants and smaller search engines to overcome.

Extreme economies of scale and sunk costs. There are substantial fixed sunk costs associated with developing and running a search engine. These include the costs associated with crawling and indexing internet web pages, and developing the search algorithm. In contrast, the marginal costs associated with an additional user are relatively low. Hence, there are substantial economies of scale. This means that search engines

³³⁸ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, pp 65-73.

³³⁹ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, pp 57, 60.

with greater scale will have a cost advantage compared to new entrants and smaller competitors.

Advantages of scope. By operating at multiple levels across the mobile device ecosystem and offering a range of digital services to consumers, Google may have advantages in respect of data which it can gather from the multiple ways in which it interacts with users. It also gives Google the ability to bundle particular offerings (such as search advertising and display advertising inventory, for example). See also box 3.5.

Pre-installation and agreements for default status are likely to further raise these barriers to entry and expansion. In particular, they are likely to increase the impact of same-side and cross-side network effects and impede competitors' ability to achieve economies of scale. This may have led to reduced levels of competition in the general search engine services market, as discussed below.

Access to users and click-and-query data

As outlined in box 3.4, network effects take two forms in relation to search engine services. The first is that having more users increases the amount of data that can be used to improve the relevance of search results, which increases the value of the search engine to other users. There are a number of elements of quality upon which search engines compete. For example, relevance of search results, privacy, trust or social objectives. However, relevance of search results was the most important factor for the majority of Australian consumers surveyed by the ACCC, and hence, this is of particular relevance to competitive outcomes in search engine markets.³⁴⁰

Click-and-query data includes data on the queries that users enter into a search engine, along with their actions taken in response to the results (e.g. which results they click on, how they scroll through the results, time taken considering results, mouse movement through results or subsequent searching).³⁴¹ This data, which is generated as consumers use a search engine, is collected, stored and used by the search engine to assess and improve the performance of its search algorithm. The search algorithm is the automated process used to return results from the search engine's index in response to a given query. With more users generating more queries and clicks, a search engine has more data from which to assess its performance and to test improvements to the algorithm, such as changes to the ranking, or spelling corrections, for example.³⁴²

Google, with over 94% of the search engine market in Australia, has access to by far the greatest amount of Australian click-and-query data.³⁴³ While there is debate about how much click-and-query data is required to effectively compete with Google, the proposition that click-and-query data is important to being able to return relevant results appears widely supported.³⁴⁴ In particular, while there appears to be diminishing returns to this data,³⁴⁵ and

³⁴⁰ This is also consistent with findings in other jurisdictions such as in the United Kingdom. See CMA, [Online platforms and digital advertising market study, Appendix I: search quality and economies of scale](#), 1 July 2020, p 11.

³⁴¹ CMA, [Online platforms and digital advertising market study, Appendix I: search quality and economies of scale](#), 1 July 2020, p 17.

³⁴² CMA, [Online platforms and digital advertising market study, Appendix I: search quality and economies of scale](#), 1 July 2020, p 17.

³⁴³ Statcounter, [Search engine market share Australia June 2020 - June 2021](#).

³⁴⁴ M Schaefer, G Sapi and S Lorincz, [The effect of big data on recommendation quality: The example of internet search](#), DICE Discussion Paper, No. 284, (2018); D He et al, [Scale Effects in Web Search](#), *International Conference on Web and Internet Economics*, (2017), pp 294-310; CMA, [Online platforms and digital advertising market study, Appendix I: search quality and economies of scale](#), 1 July 2020, p 18; DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 4.

³⁴⁵ D He et al, [Scale Effects in Web Search](#), *International Conference on Web and Internet Economics*, (2017), p 14.

especially historical data,³⁴⁶ scale is particularly valuable for rarer queries.³⁴⁷ These rarer queries are sometimes called 'tail' queries, as opposed to more common queries that are called 'torso' queries, and 'head' queries, which are the most popular queries.

Estimates provided by Google and Microsoft to the CMA suggest that head queries account for around 15-20% of queries; torso queries, about 50-60% of queries, and; tail queries, around 25-30% of queries.³⁴⁸ Analysis undertaken by the CMA suggests that Google has a significant advantage in being able to respond to tail queries as compared to its next largest competitor, Bing, in the United Kingdom, as it sees these queries more times than Bing in any given period.³⁴⁹ It concluded that:

'Even if click-and-query data only helped Google return more relevant results for a modest proportion of search queries, this would further reinforce consumers' perceptions of Google as the highest quality search engine and make them less inclined to consider alternative providers.'³⁵⁰

The importance of click-and-query data was also noted in a number of submissions to the Issues Paper, including those from Microsoft, DuckDuckGo and Oracle Corporation.³⁵¹ In particular, Oracle noted:

'The more queries a search engine receives and responds to, the more accurate its algorithms become. A search engine is able to respond more accurately to a query if it has greater experience answering queries of that type. The sheer scale of Google's user base operates to enhance the quality of the search results it generates and smaller search engines are disadvantaged in competing with Google as they see far fewer queries of any given type. Google's market dominance is therefore increased by both the improvements in its own quality and the much slower progress of smaller search engines' algorithms.'³⁵²

Google, in contrast, argues that its main innovations in search over the last decade have come from technological advances developed by their engineers rather than access to click-and-query data.³⁵³ Google has recognised the value of data to the quality of its search services, with Google's Chief Scientist in 2011 quoted as saying 'We don't have better algorithms than anyone else; we just have more data'.³⁵⁴

On balance, the ACCC considers that while access to click-and-query data is not the only factor that drives improvements in the relevance of search results, it is still an important input, especially for tail queries. Google's dominance in search gives it unrivalled access to click-and-query data, which all else being equal, gives it an advantage in its ability to improve the relevance of search results compared to other search engines.

³⁴⁶ L Chiou and C Tucker, [Search Engines and Data Retention: Implications for Privacy and Antitrust](#), *National Bureau of Economic Research*, Working Paper No. 23815, (2017), p 19.

³⁴⁷ CMA, [Online platforms and digital advertising market study, Appendix I: search quality and economies of scale](#), 1 July 2020, p 118.

³⁴⁸ CMA, [Online platforms and digital advertising market study, Appendix I: search quality and economies of scale](#), 1 July 2020, p 110.

³⁴⁹ CMA, [Online platforms and digital advertising market study, Appendix I: search quality and economies of scale](#), 1 July 2020, p 118.

³⁵⁰ CMA, [Online platforms and digital advertising market study, Appendix I: search quality and economies of scale](#), 1 July 2020, p 118.

³⁵¹ Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, pp 3-4; DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021; Oracle Corporation, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 16 April 2021, p 13.

³⁵² Oracle Corporation, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 16 April 2021, p 13.

³⁵³ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 23.

³⁵⁴ S Cleland, ["Google's "Infringnovation" Secrets"](#), *Forbes*, 3 October 2011, accessed 13 September 2021.

In this way, there is a positive feedback loop in that the value of a search engine to a user increases with the number of users on that search engine since this increases the amount of click-and-query data that the search engine has access to. This means that a search engine with more users will be more likely to be able to return more relevant results, thus attracting more users. If a search engine has a substantial advantage in respect of its market share, like Google does, it may be difficult for competing search engines to offer the same quality of service when it comes to relevance of results. To the extent that this advantage is at least in part the result of pre-installation and default agreements, these agreements could have the impact of lessening competition in the supply of general search engine services.

Ability to monetise

Google Search's wide audience, along with the fact that not many consumers tend to use multiple search engine services,³⁵⁵ means that its search advertising services are a 'must have' for many advertisers.³⁵⁶ Indeed, the ACCC has previously found that Google has significant market power in the supply of search advertising services in Australia,³⁵⁷ and there have been similar findings overseas.³⁵⁸

Google Search enjoys a competitive advantage over its rivals in attracting advertisers, on account of cross-side network effects and advantages of scope. Two cross-side network effects, in particular, provide Google Search with a competitive advantage:³⁵⁹

- Fixed costs associated with setting up an advertising account and advertising campaigns may lead advertisers to single home, leading more advertisers to choose the largest search engine, Google Search, over smaller rival search engines.³⁶⁰ Even if larger advertisers use both Google Search and Bing for their search advertising, this might be less common for smaller advertisers that may tend to use the more prominent platform given these fixed costs.³⁶¹ Given the greater number of searches being undertaken on Google Search, advertisers will likely reach a larger and more diverse audience on Google Search than on rival search engines in Australia.
- As Google Search has more users than its rivals, it has access to more data with which to improve the relevance of the search ads it shows.

In addition to its competitive advantage arising from cross-side network effects, Google Search also obtains a competitive advantage from having a wide range of interrelated services. For example, the fact that advertisers can access both Google Search and Google's digital display advertising through one platform may lead more advertisers to choose Google Search, demonstrating one of the ways in which Google benefits from advantages of scope (see box 3.5).

³⁵⁵ See chapter 2 and Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 60.

³⁵⁶ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 95.

³⁵⁷ ACCC, [Digital Platforms Inquiry Final Report](#), 27 July 2019, p 8.

³⁵⁸ European Commission, Commission Decision, [Case AT.39740 – Google Search \(Shopping\)](#), 27 June 2017, p 57.

³⁵⁹ If a platform charges a fixed price for displaying an advertisement, a cross-side network effect arises because an advertiser will obtain a greater return for a given ad spend if there are more users of the platform. This particular cross-side effect does not arise on Google Search, on account of its cost per click (CPC) pricing.

³⁶⁰ DS Evans, [The Economics of the Online Advertising Industry](#), *Review of Network Economics*, 7:3 (2008), 9 May 2008, p 16.

³⁶¹ CMA, [Online platforms and digital advertising market study, Appendix N: understanding advertiser demand for digital advertising](#), 1 July 2020, pp N24-N25.

Box 3.5: Google's advantages of scope

Operating at multiple layers in the mobile device ecosystem and providing a range of digital services to consumers is likely to provide Google with a number of advantages in relation to its search services.

One key advantage that Google Search is likely to have, compared to rival search engines, is access to location data. Location data can be very useful for returning relevant results for certain types of search queries.³⁶² By virtue of its control of the Android mobile operating system and Google Maps, Google has unique advantages in the location data that it has access to relative to other search engines (including its closest rival, Bing).³⁶³

Another advantage that Google likely has, relative to other search engines, is access to personalised data. Schaefer, Sapi and Lorincz (2018) found that personal data can lead to more relevant search results and faster improvements to the search algorithm.³⁶⁴ To the extent that personal data has this impact, Google's multiple consumer facing products and services gives it an advantage in terms of access to consumer data compared to rival search engines.

Google's multiple touchpoints across the mobile ecosystem and more generally across a range of digital services also provide it with advantages. Google's control of the Android operating system and Google Play, for example, has enabled it to bundle the pre-installation of Chrome and Google Search with Google Play for Android devices. Similarly, Google's dominance in search and display advertising may allow it to consolidate market power across each of these markets by bundling these services together for advertisers.

When considered alongside the advantages from Google's scale in search, brought at least in part by Google's pre-installation and default agreements, these advantages of scope may further reinforce Google's dominance in search.

Google Search's competitive advantages in attracting advertisers and its ability to show more relevant ads, which both arise from cross-side network effects and advantages of scope, suggest that it is likely to enjoy relatively higher prices (measured as cost per click (CPC) and more clicks when compared to its rivals. The CMA analysed the prices for search advertising on Google and Bing for the same search queries, and found that Google's prices were on average 30-40% higher than Bing's, both on desktop and on mobile devices. The CMA concluded that this was consistent with Google benefiting from cross-side network effects.³⁶⁵ The ACCC considers that all else being equal, this may limit the ability of rival search engines to outbid Google when competing for the position as the pre-set search engine. Microsoft submits that OEMs are attracted to default general search engine services that have the highest ability to monetise, giving Google an advantage, especially on mobile devices.³⁶⁶

Google submits that search engine services compete for default and pre-installation opportunities based on quality as well as revenue.³⁶⁷ While the ACCC acknowledges the importance of quality when selecting a search engine for a default position, Google has a significant advantage when it comes to its ability to remunerate browsers and OEMs.

³⁶² D Sullivan, [How location helps provide more relevant search results](#), *The Keyword (Google Blog)*, 16 December 2020, accessed 13 September 2021.

³⁶³ CMA, [Online platforms and digital advertising market study, Appendix I: search quality and economies of scale](#), 1 July 2020, p 126.

³⁶⁴ M Schaefer, G Sapi and S Lorincz, [The effect of big data on recommendation quality: The example of internet search](#), DICE Discussion Paper, No. 284, (2018).

³⁶⁵ CMA, [Online platforms and digital advertising market study, Appendix Q: exploitation of market power](#), 1 July 2020, p Q24.

³⁶⁶ Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 May 2021, p 4.

³⁶⁷ Google [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 2.

Further, its scale has allowed it to realise same-side network effects which reinforce its quality, as discussed above. Hence, Google's quality and ability to monetise cannot be easily divorced from the advantages that it has gained from pre-installation and default arrangements through vertical integration and commercial agreements.

Ability to realise economies of scale

Apart from the network effects discussed above, search engines are subject to substantial economies of scale. That is, there are high fixed costs associated with crawling the web, developing an index and developing a search algorithm, all of which are required to be able to offer search engine services (absent a syndicated agreement; as discussed in section 3.3), which do not rise proportionally with the number of users. It is estimated that crawling and indexing the web costs Google and Bing hundreds of millions of dollars each year.³⁶⁸ The CMA estimated that to replicate Google's search engine would cost between AUD\$13.5 and AUD\$40.5 billion.³⁶⁹

Google's pre-installation and default arrangements collectively lock up a substantial share of key distribution points for search engines to reach consumers. Without access to effective distribution, rival search engines are unlikely to be able to achieve sufficient scale to warrant substantial sunk investment in web crawling and indexing activities in Australia. Indeed, Google's default agreements were cited as a key barrier to Yandex and Cliqz investing more in crawling and indexing English language web pages.³⁷⁰

3.2.3. Market outcomes and impacts on consumers

As described above, it appears that the various pre-installation and default arrangements are likely to have foreclosed Google's rivals from accessing users through a number of key entry points. Given the importance of network effects and economies of scale in search, these impacts may also have disadvantaged Google's rivals by not allowing them to achieve sufficient scale to drive quality improvements and improve monetisation. While Google Search's market share is also indicative of its quality, the ACCC considers that this has in part been achieved through vertical integration and pre-installation and default agreements that have provided it with scale at the expense of its rivals.

The ACCC expects that consumers may be getting less choice and lower quality search engines than could be expected if there was more competition in the general search engine market. For example, consumers may be receiving less privacy (or search engines might be collecting more consumer data) than would occur with more competition in the general search market. In addition, consumers might be subject to more ads at the expense of organic search results with less competition.

While there are a number of innovative search engines in the market (see box 3.6), their market shares are very small and their ability to compete with Google Search is limited given the difficulties in accessing users, especially at scale. Indeed, the EC in its 2018 Google Android decision (see box 3.2) was of the view that Google's conduct, including its default arrangements for search, was likely to harm innovation in national markets for general search engine services.³⁷¹

³⁶⁸ CMA, [Online platforms and digital advertising market study, Appendix I: search quality and economies of scale](#), 1 July 2020, p 120.

³⁶⁹ CMA, [Online platforms and digital advertising market study, Appendix I: search quality and economies of scale](#), 1 July 2020, p 122, converted to Australian dollars in July 2021, Converted from GBP using RBA exchange rate for July 2020 (AUD/GBP = 0.5553).

³⁷⁰ CMA, [Online platforms and digital advertising market study, Appendix I: search quality and economies of scale](#), 1 July 2020, p 121.

³⁷¹ European Commission, Commission Decision, [Case AT.40099 – Google Android](#), 18 July 2018, paras 1139-1144.

Box 3.6: Examples of search engines with innovative offerings

- **Neeva** – A project founded by ex-Google executives which describes itself as an “ad-free, private and customizable” search engine.³⁷² Neeva operates a subscription based business model.³⁷³
- **OceanHero** – Through the provision of search advertising, OceanHero generates revenue which it uses to pay for the collection of plastic waste, development of recycling facilities, and education regarding plastic pollution and solutions.³⁷⁴
- **Brave Search** – A recently launched search engine from Brave, the creator of the Brave Browser. Brave Search differentiates itself from other search engines by using its own independent index for commonly searched queries.³⁷⁵
- **DuckDuckGo** – A privacy focused search engine which offers tracker-blocking and site encryption while not collecting or sharing the personal information of users.³⁷⁶ DuckDuckGo generates revenue through the use of search advertising which it displays through syndication agreements with Microsoft Bing.³⁷⁷
- **Ecosia** – Ecosia markets itself as an eco-friendly and privacy-focused search engine that donates 100% of surplus revenue (earned primarily through search advertising) to climate action, with at least 80% financing tree-planting efforts around the world.³⁷⁸ Ecosia syndicates its search results from Bing as well as using its own algorithms.

The other main way in which consumers might be worse off is that prices for search advertising might be higher than would occur in a more competitive market. This could potentially cause consumer detriment to the extent that this is passed onto consumers in the final price of advertised products. As noted above, the CMA has previously found that prices paid for search advertising tend to be higher on Google than on competing search engines. The CMA has also previously found that the profits made by Google from search advertising are well in excess of what could be expected in a competitive market.³⁷⁹

The ACCC considers that the pre-installation and default arrangements entered into by Google with various OEMs and browser service providers have likely lessened competition in the general search engine market in Australia by foreclosing access to key distribution points and limiting the ability of Google’s rivals to achieve scale. These findings are consistent with those of the EC in its 2018 Android decision against Google (see box 3.2). Similar findings have been made by the CMA in the UK and also form the basis of a number of allegations currently being tried in the United States and South Korea (see box 3.7). The ACCC is continuing to consider the specific allegations that have been made against Google over the course of the inquiry under the competition provisions of the *Competition and Consumer Act 2010* (CCA), including in relation to the default arrangements between Google and OEMs.

³⁷² Neeva, [Features](#), accessed 13 September 2021.

³⁷³ Neeva, [Neeva Announces Public Availability of its Ads Free, Private Search Engine](#), 29 June 2021, accessed 13 September 2021.

³⁷⁴ OceanHero, [About the concept](#), accessed 13 September 2021; OceanHero, [Our Mission](#), accessed 13 September 2021.

³⁷⁵ Brave, [Brave Search beta now available in Brave browser, offering users the first independent privacy search/browser alternative to big tech](#), 22 June 2021, accessed 13 September 2021.

³⁷⁶ DuckDuckGo, [Privacy](#), 4 November 2012, accessed 13 September 2021.

³⁷⁷ DuckDuckGo, [Advertising and Affiliates](#), accessed 13 September 2021.

³⁷⁸ Ecosia, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 1.

³⁷⁹ CMA, [Online platforms and digital advertising market study, Appendix D: profitability of Google and Facebook](#), 1 July 2020, pp D11-D22.

Box 3.7: Consensus among international regulators

Court proceedings

Korean Fair Trade Commission (September 2021)

In 2016, the Korean Fair Trade Commission (KFTC) began investigating allegations that Google restricted competition in the mobile application market and operating system market.³⁸⁰

The KFTC alleged that Google exploited its market dominance in these markets in South Korea by requiring domestic OEMs, like Samsung, to pre-install the Android operating system on their mobile devices. In addition, the KFTC alleged that OEMs were also blocked from using rival operating systems.³⁸¹

On 14 September 2021, the KFTC fined Google AUD\$241 million³⁸² for requiring device producers to abide by AFAs when signing contracts regarding app store licences, which prevented device manufacturers from supplying modified versions of the Android operating system on their devices. The KFTC said that Google's contract terms with device makers amounted to an abuse of its dominant market position that restricted competition in the mobile operating system market. Google has said in a statement that it intends to appeal the ruling.³⁸³

US Department of Justice filing against Google (October 2020)

On 20 October 2020, the United States Department of Justice (DOJ) and 11 state Attorneys-General filed a civil antitrust lawsuit against Google, alleging that Google has unlawfully maintained monopolies in the markets for search and search advertising through:

- entering into exclusivity agreements, tying and other arrangements with OEMs, which ensure Google's search and other applications are pre-installed, centrally placed, set as default and unable to be deleted while competing search engine services are barred from pre-installation³⁸⁴
- entering into long term contractual agreements with Apple that require Google Search to be the default search engine on Apple's Safari browser and other Apple search tools³⁸⁵
- using monopoly profits to purchase preferential treatment for its search engine on devices, web browsers, and emerging search access points, creating 'self-reinforcing cycle of monopolization.'³⁸⁶

The DOJ submitted that Google's conduct forecloses competition in markets for general search engine services and search advertising. Through its conduct, Google denied rivals the scale needed to meaningfully compete in the search and search advertising markets by excluding them from effective distribution channels, raised barriers to entry and

³⁸⁰ K Eun-jin, KFTC About to Finalize Google AFA Investigation, *Business Korea*, November 19, 2020, accessed 13 September 2021

³⁸¹ M Kim, [Korea's FTC to determine penalty on Google in final full session on Sept. 1](#), *Pulse News*, 5 August 2021, accessed 13 September 2021.

³⁸² Converted to Australian dollars in September 2021, Converted from South Korean won using RBA exchange rate for 14 September 2021 (AUD/KRW=859.78).

³⁸³ Reuters, [S.Korea fines Google \\$177 ml for blocking Android customisation](#), accessed 15 September 2021.

³⁸⁴ *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, para 4.

³⁸⁵ *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, paras 118-122.

³⁸⁶ Department of Justice (US), [Justice Department Sues Monopolist Google For Violating Antitrust Laws](#), 20 October 2020, accessed 13 September 2021.

expansion by excluding nascent competitors from emerging search access points on mobile and desktop devices, and inhibited new, innovative products which could serve as alternative search access points or disrupt Google's search model.

The DOJ alleged that Google's conduct harms consumers by reducing the quality of general search engine services, including aspects such as privacy, data protection and the use of consumer data, reducing choice in general search engine services and impeding innovation.³⁸⁷

To remedy the harm, the DOJ requested that the Court, among other things, prohibit Google from continuing to engage in the practices which the DOJ has identified as anticompetitive and enter 'structural relief as needed' to remedy to anti-competitive harm.³⁸⁸

Russian Federal Antimonopoly Service (FAS) (2017)

In 2017, the Moscow District Court of Arbitration upheld the validity of a decision by the FAS that Google had significant market power in the market for pre-installed app stores for Android OS that are localised in the Russian Federation. The FAS also found anti-competitive clauses in agreements between Google and OEMs, including in the MADAs, AFAs and RSAs.

The FAS alleged Google's actions had resulted in the prohibition of pre-installation of other developers' competing applications. By restricting OEMs' ability to pre-install competing mobile applications, which is the most efficient app distribution channel, these markets were 'reserved by Google'.³⁸⁹ The FAS also found that conditions imposed by Google were a violation of the antimonopoly legislation. The violations included: mandatory pre-installation of other Google apps with Google Play, Google's preferential treatment on the devices' home screen as well as mandatory instalment of Google Search as the default.

To restore competition, the FAS required Google to remove anti-competitive restrictions from its agreements with device manufacturers. This included the exclusivity and priority placement of Google apps as well as the provisions limiting installation of other developers' apps and services.

Google also committed, for the devices that are currently in the Russian market, to develop an active 'choice window' for the Chrome browser to allow users to choose their default search engine.³⁹⁰ This is discussed further in chapter 4.

Market inquiries and reports

Competition Commission of India (September 2021)

The Competition Commission of India (CCI) found that Google abused its dominant position of its Android operating system in India to harm competitors, following a 2 year investigation.³⁹¹

³⁸⁷ *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, para 167.

³⁸⁸ *US Department of Justice v Google LLC*, [Complaint filed in the US District Court for the District of Columbia](#), 20 October 2020, para 194.

³⁸⁹ FAS, [FAS Russia Reaches Settlement with Google](#), accessed 13 September 2021.

³⁹⁰ FAS, [FAS Russia Reaches Settlement with Google](#), accessed 13 September 2021.

³⁹¹ The Straits Times, [India antitrust probe finds Google abused Android dominance, report shows](#), accessed 20 September 2021

The CCI report concluded that the mandatory pre-installation of Google's apps 'amounts to imposition of unfair condition on the device manufacturers' and that Google leveraged the position of its Play Store app store to protect its dominance.³⁹²

The investigation began in 2019 and the investigation report will now be reviewed by senior members of the CCI, Google will be provided an opportunity to respond to the findings. Following this, a final order will be issued, which could include penalties.³⁹³

UK CMA (2019)

The UK CMA found that in 2019 Google paid just under £1.2 billion for default positions in the UK alone (based on Google's best estimates). This figure was more than 17% of Google's total annual search revenues in the UK. The CMA concluded that the substantial majority of the total default payments made by Google were paid to Apple, with a smaller proportion going to Android mobile phone manufacturers or other partners.³⁹⁴

The CMA concluded 'it is striking that the largest search engine, with a strong brand and high and sustained shares of supply, make such significant payments for default positions.'³⁹⁵ Importantly, the CMA also considered the consequences of Google losing the Apple default position, finding that Google was concerned about the anticipated loss of query volume and the revenue loss that this would result in.³⁹⁶

3.3. Effect of search syndication agreements of competition in search

As part of the ACCC's analysis of the general search engine services market, the ACCC also considered the competitive constraints posed by downstream search engines reliant on syndicated search results from upstream search providers.

3.3.1. Syndicated search arrangements

As discussed in section 3.2, search engines operate by maintaining an index of websites and using algorithms to determine which results to serve in response to a search query. This process involves crawling the web using automated bots to look for new or updated web pages, recording and indexing the data and then ranking and returning results when a user enters a search query.³⁹⁷

As noted in the *First DPSI Interim Report* and above, the costs of crawling and indexing websites are significant and barriers to entry in the market for search engine services are high. In the face of these significant costs, some general search suppliers syndicate search results from existing search engines instead (either from Google or Bing) through negotiated syndication agreements.³⁹⁸

Google and Bing are the only English-language search engines that maintain an extensive index of web pages. Other search engines purchase organic links and search adverts through syndication agreements.³⁹⁹ However, Microsoft is the only provider that currently

³⁹² The Straits Times, [India antitrust probe finds Google abused Android dominance, report shows](#), accessed 20 September 2021.

³⁹³ The Straits Times, [India antitrust probe finds Google abused Android dominance, report shows](#), accessed 20 September 2021

³⁹⁴ CMA, [Online platforms and digital advertising market study, Appendix H: Default positions in search](#), 1 July 2020, p H24.

³⁹⁵ CMA, [Online platforms and digital advertising market study, Appendix H: Default positions in search](#), 1 July 2020, p H24.

³⁹⁶ CMA, [Online platforms and digital advertising market study, Appendix H: Default positions in search](#), 1 July 2021, p H26.

³⁹⁷ CMA, [Online platforms and digital advertising market study, Final Report](#), 1 July 2020, p 75.

³⁹⁸ ACCC, [Digital Platform Services Inquiry First Interim Report](#), 23 October 2020, pp B2-B3.

³⁹⁹ CMA, [Online platforms and digital advertising market study, Final Report](#), 1 July 2020, p 76.

offers syndicated search in any real capacity in Australia. The ACCC is only aware of one Google syndication partner, Startpage.⁴⁰⁰

Under syndication agreements, search engines such as OceanHero, DuckDuckGo and Ecosia agree to purchase organic web links from Microsoft. Microsoft may also provide search ads next to the organic web links.⁴⁰¹ The parties share search advertising revenue as per the terms in the syndication arrangements. Under these agreements, the company providing the organic web links and search ads is known as the 'upstream provider' and the company receiving them is the 'downstream provider'.⁴⁰² The downstream provider incorporates the organic links into its own search engine product, under its own branding.

Syndication allows small search engines to create new and innovative business models without having the significant costs of crawling and indexing websites. As discussed in box 3.8, there are an increasing number of innovative search offerings that use syndicated search engine services. These include the search engines mentioned above – OceanHero, a search engine that uses its revenue to pay for the collection of plastic waste and development of recycling facilities, DuckDuckGo, a privacy focused search engine, and Ecosia, which plants trees using the revenue it generates from its share of search advertising. In Australia, the second most popular search engine on mobile devices after Google is DuckDuckGo. However, DuckDuckGo's market share is below 1% on both desktop and mobile devices in Australia.⁴⁰³

3.3.2. Syndicated search agreements and competition

As noted in the *First DPSI Interim Report*, due to high barriers to entry and expansion in upstream search engine services, the limited substitutes available and the existence of only two upstream providers of syndicated search results, those upstream providers are likely to have a strong bargaining position in their dealings with downstream search engines.⁴⁰⁴ The CMA similarly concluded that, as the only English-language web crawling search engines, Google and Bing have a strong bargaining position with downstream providers.⁴⁰⁵

The CMA provided an example of the bargaining power imbalance from Ecosia, who had requested syndication services from Google on multiple occasions, with their request consistently denied.⁴⁰⁶ The lack of any meaningful downstream providers using syndication services from Google may indicate an unwillingness of Google to enter into such agreements. In contrast, Microsoft has noted that it obtains substantial non-monetary value from downstream providers, as the searches conducted by the downstream providers increase Microsoft's scale and competitiveness over time (as discussed in section 3.2, access to click-and-query data is important to improving the relevance of search results).⁴⁰⁷ Given Google's position as the leading search provider in many countries, there is likely limited incentive for it to provide syndicated search results to downstream providers.

Given that both downstream providers and upstream providers supply general search engine services to consumers, search engines reliant on syndicated search results compete with their own upstream providers. To reduce the threat of competition, upstream providers may have an incentive to exploit their stronger bargaining position and impose conditions on

⁴⁰⁰ Startpage, [What is the relationship between Startpage.com and Google?](#), *Startpage Support*, 24 August 2021, accessed 13 September 2021.

⁴⁰¹ Bing, [Bing for Partners](#), accessed 13 September 2021

⁴⁰² DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 14 2021, p 77.

⁴⁰³ Statcounter, [Search engine market share in Australia June 2020 - June 2021](#).

⁴⁰⁴ ACCC, [Digital Platform Services Inquiry First Interim Report](#), 23 October 2020, p B4.

⁴⁰⁵ CMA, [Online platforms and digital advertising market study, Final Report](#), 1 July 2020, p 98.

⁴⁰⁶ CMA, [Online platforms and digital advertising market study, Final Report](#), 1 July 2020, p 98.

⁴⁰⁷ CMA, [Online platforms and digital advertising market study, Final Report](#), 1 July 2020, p 97

downstream providers to limit the potential competitive constraint, including through lower quality search results and search advertising. The imbalance in bargaining power might also result in upstream providers obtaining a high share of the revenue generated by downstream providers.

To test these considerations, the ACCC obtained syndication agreements between Microsoft and a number of downstream search engine providers, for the syndication of search results and search advertising from Bing. These agreements suggest that this has not occurred in practice, at least for some downstream providers. The agreements indicate that downstream providers receive the majority of advertising revenue earned through search advertising on their search engine, with only a small proportion going to Microsoft. The agreements are also tailored to each search platform and allow search engines to combine results from their own web indexes with Bing's results, providing them with the opportunity to differentiate their search offerings.⁴⁰⁸

The ACCC has also performed its own analysis to compare Bing and DuckDuckGo search engine results pages, as set out in the box below.

Box 3.8: ACCC analysis of Bing and DuckDuckGo search engine results pages

From 12 July to 15 August 2021, the ACCC periodically ran various search terms on Bing and DuckDuckGo's websites, across a combination of desktop, tablet and mobile devices, based in Melbourne, Armidale and Ashgrove.⁴⁰⁹ The ACCC makes the following observations from a comparative analysis of the first page of the returned search results:

- Typically, a higher proportion of Bing results appeared to be sponsored than DuckDuckGo results. On average, 25% of the Bing results appeared to be sponsored, compared with 7% of the DuckDuckGo results.
- A higher proportion of organic Bing results on desktop and tablet devices appeared to be localised, compared with organic DuckDuckGo results. Across all devices, Bing showed localisation on 11% of organic Bing results, compared with 7% of organic DuckDuckGo results.⁴¹⁰

Bing typically returned about 6 organic results per search engine result page, while DuckDuckGo returned about 10. On average, 95% of the individual organic results presented on Bing also appeared on DuckDuckGo at some point during the search period. However only 21% of organic Bing result sets were exactly replicated in organic DuckDuckGo result sets. This means that while most results from Bing will also appear on syndication partner DuckDuckGo, some differentiation exists between the 2 services as the overall set of results was only the same 21% of the time.

Typically, there was more featured content on Bing search engine result pages than DuckDuckGo search engine result pages. Featured content consists of boxes that contain information relevant to a search query, which allows a consumer to obtain that information readily and quickly, rather than clicking onto a link. For example, featured content in response to the query 'Sydney weather' would include information on the weather, including temperature and precipitation.

⁴⁰⁸ Information provided to the ACCC.

⁴⁰⁹ The search terms were collated through identifying common head and tail queries as recorded by Similar Web, or as otherwise nominated by the ACCC Digital Platforms Branch. Desktop devices were a PC running Windows 10 and a Mac running OS X Catalina, Tablet devices were iPad Pro 12.9 2020 and Samsung Galaxy Tablet S7 and mobile devices used were an iPhone 12 and a Google Pixel 5.

⁴¹⁰ Note that ACCC set the Map Rendering setting to 'Best Available' on all DuckDuckGo searches as well as 'allowing' geolocation permission. These settings are likely to have increased the level of localisation returned in DuckDuckGo searches above those encountered by a standard user of DuckDuckGo.

In relation to each of these observations, the ACCC notes:

- The ACCC's *First DPSI Interim Report* examined how search results were presented to users, focusing in particular on differences between how results were presented on mobile devices compared to desktops and the proportion of sponsored content to organic results. As noted in the *First DPSI Interim Report*, there are potential impacts of increasing levels of sponsored results compared to organic results, both for businesses and consumers.⁴¹¹ While businesses are increasingly turning to sponsored results to reach users, consumers who are receiving fewer organic results may arguably face a reduced level of real choice.⁴¹²
- When considering localisation of results, the ACCC notes that DuckDuckGo is a privacy focused search engine whose business model is based on reduced data collection. Given this, the reduced level of localisation of results on DuckDuckGo may be a feature of their chosen business model.
- In relation to featured content, the ACCC notes that there is an increasing trend towards populating search engine result pages with features other than organic web links or paid content, with these features known as 'featured content'.⁴¹³ Non-traditional search engine result pages display relevant information or answers to a query on the page itself, eliminating the need for users to click on a particular result.⁴¹⁴ Some studies have found that these features can increase user search satisfaction.⁴¹⁵ For example, one study found that featured content has a high expected benefit to consumers and relatively low 'interaction cost' as they do not require users to click again, read lengthy content or leave the current screen.⁴¹⁶ Featured content can also provide quick answers in cases where users have a simple information need.⁴¹⁷ Accordingly, the ability to provide featured content on a search engine result page would likely improve the quality of search provided by a user and improve the user's experience, encouraging the user to continue using the search engine service. It is therefore important that the arrangements between upstream search engine service providers and downstream search providers do not restrict the ability of downstream search engine services from providing these features. The ACCC notes that an increase in featured content may reduce the number of clicks on organic links. This may have adverse consequences for businesses reliant on consumers clicking through to their websites.

In summary, nothing in the ACCC's review of the relevant agreements, or the ACCC's other analysis, suggests that downstream search providers are currently facing particular restrictions in their syndication agreements that might impact their ability to compete with upstream search providers.

⁴¹¹ ACCC, [Digital Platform Services Inquiry First Interim Report](#), 23 October 2020, p 65.

⁴¹² R Burquet, R Caminal and M Ellman, [In Google We Trust?](#), (2014), p 0.

⁴¹³ N Vincent and B Hecht, [A deeper investigation of the importance of Wikipedia links to the success of search engines](#), *Cornell University arXiv Database*, 21 April 2020, pp 1-2.

⁴¹⁴ A Chuklin and M de Rijke, [Incorporating Clicks, Attention and Satisfaction into a Search Engine Result Page Evaluation Model](#), October 2016, p 1.

⁴¹⁵ A Lleras et al., [Towards A Better Understanding Of The Role Of Parallel Attention In Visual Search](#)” *Journal of Vision*, 15(12) (2015).

⁴¹⁶ K Moran and C Goray, [Three Key SERP Features: Featured Snippets, People Also Ask, and Knowledge Panels](#), *Nielson Norman Group*, 26 April 2020, accessed 13 September 2021.

⁴¹⁷ K Moran and C Goray, [Three Key SERP Features: Featured Snippets, People Also Ask, and Knowledge Panels](#), *Nielson Norman Group*, 26 April 2020, accessed 13 September 2021.

4. Measures to improve competition and consumer choice in search engine services

Key findings

- Given Google's substantial market power in the supply of general search engine services in Australia, and the issues identified in chapters 2 and 3, the ACCC considers that measures should be implemented to facilitate increased competition and improve consumer choice in the supply of search engine services.
- The ACCC considers that a mandatory choice screen can improve competition and consumer choice in search engine services. As directed in the Government's response to the DPI's recommendations, the ACCC has considered the search engine choice screen rolled out by Google on new Android devices in the European Economic Area and the UK (EEA).
- The exact criteria to determine which providers would be subject to implementation are still to be determined. At this stage, the ACCC considers that a requirement to implement a choice screen should apply to both new and existing Android mobile devices and to all search access points on those devices. This is to address the consequences of the substantial market power and vertical integration of Google in mobile operating systems and search services, and the resulting strategic position it occupies.
- Subject to further consideration and user testing, the ACCC should also have the power to mandate the implementation of a search engine choice screen in relation to other devices (e.g. desktop devices) and operating systems (e.g. non-Android mobile devices), as well as the implementation of a choice screen in relation to browser selection.
- Other key elements of a choice screen include allowing search engines to be featured on the choice screen for free, presenting an optimal number of search engine options to consumers (to be identified through user testing), and being presented to users at an appropriate time that would enable considered choice.
- While a well-designed and implemented choice screen would improve competition and consumer choice in search, the ACCC considers that further measures are required to improve competition in search. Accordingly, the ACCC should be given powers to implement measures beyond choice screens to improve competition and consumer choice in the supply of search engine services. These measures should sit alongside the rules and powers proposed in the *Digital Advertising Services Inquiry Final Report*. The framework for these rules and powers will be considered as part of the fifth interim report under the Digital Platform Services Inquiry and in further reports by the ACCC.
- These measures, specific to search engine services, would include restricting dominant search engines, or search engine services that meet some other specified criteria, from engaging in tying or bundling activity. Other potential measures, which require further analysis to consider their overall effect on consumers and competition, could include:
 - limiting the ability for dominant search engines to pay for certain default positions
 - the sharing of click-and-query data and other datasets with rivals, and

- o requiring that, where syndicated search results are supplied to downstream search providers, it is on fair, reasonable and non-discriminatory terms.

Chapter 4 considers potential measures to improve competition and consumer choice in search in Australia, to address the consumer and competition issues in the supply of general search engine services identified in chapters 2 and 3. As part of this analysis, the ACCC considers the extent to which choice screens, and in particular, the choice screen provided by Google on Android devices in Europe (the EU Android choice screen), could be applied in Australia.

Given the timing of this Report, this advice largely focuses on the iteration of the EU Android choice screen presented to users between March 2020 and August 2021 but also acknowledges recent changes applicable from September 2021, which may address some of the concerns identified with the choice screen's design.

Chapter 4 is structured as follows:

- **Section 4.1:** provides the background to the EU Android choice screen, examines its consumer reach and impact on search engine market shares in Europe, and identifies a number of stakeholder concerns and suggested improvements.
- **Section 4.2:** provides the ACCC's advice to Government regarding the potential application of a choice screen in Australia.
- **Section 4.3:** discusses other potential measures aimed to increase competition and improve consumer choice in the supply of search engine services. The ACCC proposes these measures be considered in the context of broader regulatory reform to address issues of digital platform market power in Australia.

4.1. The EU Android choice screen – design considerations and impact

Choice screens are intended to provide consumers with an active choice of a service provider to be set as default, rather than having a device manufacturer or browser supplier select the default service for the consumer. In this way, choice screens may facilitate choice for consumers and open up access to alternative service providers (i.e. those that do not benefit from pre-installation or default arrangements). They have been used in the past to remedy competition issues, both in the supply of search engine services and in the supply of web browsers (discussed in section 4.1.1 and box 4.1 below).

As discussed further below, choice screens have been accepted by the EC as a remedy to address competition concerns in markets for search and web browsers. Choice screens are also being contemplated by the CMA as a pro-competitive intervention to improve competition in the market for search engine services.⁴¹⁸ Similarly, there has been broad support for the use of choice screens in submissions to the ACCC's Issues Paper, with a number of stakeholders supporting a choice screen and expressing views regarding its design and implementation.⁴¹⁹

The ACCC recognises the potential for choice screens to lower barriers to expansion in the supply of search engine services. The ACCC's *DPI Final Report* found that Google has substantial market power in the supply of search engine services in Australia.⁴²⁰ It identified

⁴¹⁸ CMA, [Online platforms and digital advertising market study, Final Report](#), 1 July 2020, p 24.

⁴¹⁹ See: Australian Communications Consumer Action Network, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021; Centre for Responsible Technology, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021; DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021; Ecosia, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021; Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021.

⁴²⁰ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 8.

consumer inertia as a barrier to expansion for competitors in search, and that consumer inertia is reinforced by a default bias that exists with Google Search being the pre-set search engine on a number of web browsers, and Chrome being the default internet browser on a number of operating systems.⁴²¹

To address these and associated issues, the *DPI Final Report* made a number of recommendations, including that Google should provide Australian users of Android devices with the same options being rolled out to existing Android users in Europe. That is, the ability to choose their default search engine and default internet browser from a number of options.⁴²² In response to this recommendation, the Government directed the ACCC to examine and report on Google's rollout of a choice screen for browsers and search on Android devices in Europe.⁴²³

Google submits that there is no basis for transposing the EU Android choice screen to Australia, and that the EC's 2018 Android decision (discussed in section 4.1.1 and in box 3.2) cannot be relied on to support a choice screen being implemented in Australia. This is because the EC's investigation focused on search in European national markets, which differ to the Australian market.⁴²⁴ In addition, Google submits that this decision is presently under appeal to the EU Courts.⁴²⁵

The ACCC acknowledges the differences between the Australian and European national markets. However, chapters 2 and 3 of this Report have identified a number of consumer and competition issues in the supply of general search engine services in Australia that are caused by the specific market dynamics of the Australian market. It is these findings, in the Australian context, that form the basis of the ACCC's recommendation to Government regarding the need for future measures.

4.1.1. The EU Android choice screen

The following section provides an overview of the background to the EU Android choice screen, the various iterations of this choice screen, and discusses the elements of a choice screen that the ACCC considers may assist in promoting competition and facilitating greater consumer choice in search.

Following the EC's 2018 Google Android decision, Google announced it would implement a choice screen covering both browsers and search engine services on new and existing Android devices shipped in the EEA.⁴²⁶ The choice screen was offered voluntarily by Google to the EC as a measure to facilitate competition and choice in search, in addition to the remedies and significant fine imposed by the EC. The EU Android decision is discussed further at box 3.2.

There have been three iterations of the EU Android choice screen since its implementation, which are described below.

⁴²¹ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 110.

⁴²² ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 30. See further the announcement in a blog post by Kent Walker, SVP of Global Affairs for Google, on 19 March 2019 that the choice screen would increase choice for consumers: 'Now we'll also do more to ensure that Android phone owners know about the wide choice of browsers and search engines available to download to their phones. This will involve asking users of existing and new Android devices in Europe which browser and search apps they would like to use.' <https://blog.google/around-the-globe/google-europe/supporting-choice-and-competition-europe/> accessed 13 September 2021.

⁴²³ Australian Government, [Government Response and Implementation Roadmap for the Digital Platforms Inquiry](#), 12 December 2019, p 11.

⁴²⁴ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, pp 20-21.

⁴²⁵ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 21.

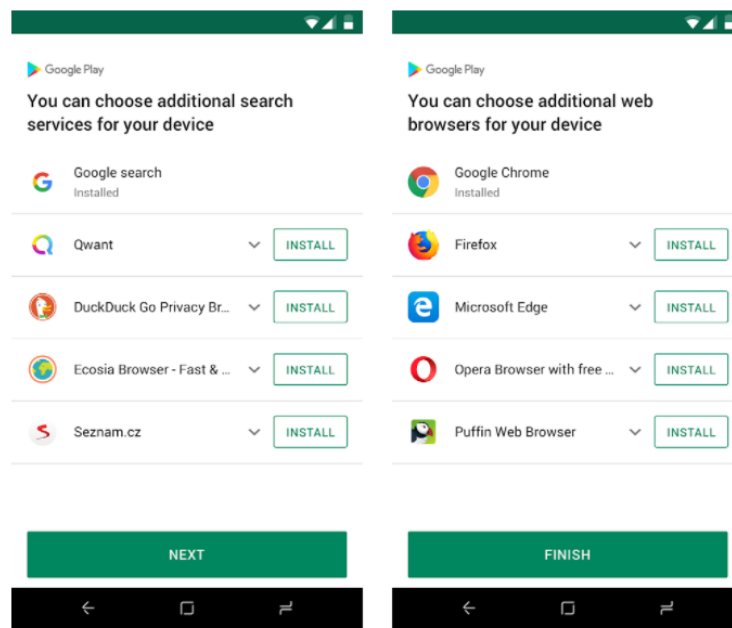
⁴²⁶ Google, [Presenting search app and browser options to Android users in Europe](#), 18 April 2019, accessed 13 September 2021.

First iteration of the EU Android choice screen (April 2019 - February 2020)

Google began rolling out its initial choice screen in April 2019. This choice screen covered both browsers and search engines, and was displayed as two separate screens, visible to users when they first accessed the Google Play Store following an update to the Android operating system. This choice screen applied to users of new and existing Android devices in the EEA.

Each screen displayed up to 5 options for both browsers and search engines. Competing search engines and browsers were not required to pay Google for their inclusion, and were selected based on their popularity in the Google Play Store on a country-by-country basis. These screens are shown below in figure 4.1.

Figure 4.1: First iteration of the EU Android choice screen



Source: Google, [Presenting search app and browser options to Android users in Europe](#), published 18 April 2019, accessed 13 September 2021.

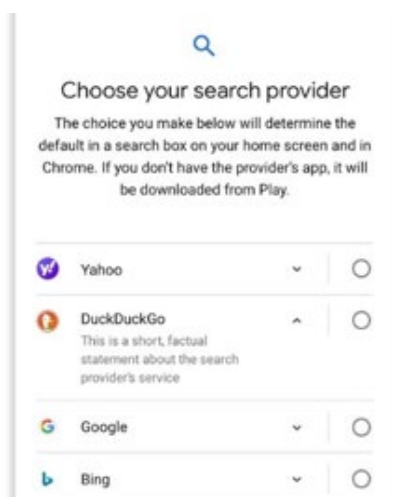
These two choice screens were displayed to users until March 2020, when they were replaced with the second iteration of the EU Android choice screen discussed below.

Second iteration of the EU Android choice screen (March 2020 - August 2021)

In March 2020, Google began implementing an alternate choice screen, which applied only to search engines and only to new devices shipped in the EEA and approved for sale by Google. It was displayed to users during the device set-up process and presented users with 4 search engine options, including Google Search, as shown below in figure 4.2.⁴²⁷

⁴²⁷ Android, [About the choice screen](#), updated 8 February 2021, accessed via Wayback Machine 13 September 2021.

Figure 4.2: Second iteration of the EU Android choice screen



Source: Android, [About the choice screen](#), updated 8 February 2021, accessed via Wayback Machine 13 September 2021.

To be featured on the choice screen, third-party search engines had to bid and win a fourth-price auction. These auctions took place on a country-by-country basis and were held quarterly.⁴²⁸ When a user made a selection from the choice screen:

- the search engine would be set as the default in the search box on the device home screen
- the search engine would be set as the search default on the Chrome browser (if installed), and
- if not already installed, the search engine's app and widget would be downloaded from the Google Play Store and installed on the device home screen.⁴²⁹

Third iteration of the EU Android choice screen (September 2021 - present)

On 8 June 2021, Google announced further changes to the EU Android choice screen. The revised choice screen is displayed to users during initial device setup and began appearing on new devices distributed in the EEA on or before 1 September 2021.⁴³⁰ Under these further changes:

- Participation is free for eligible search engines, replacing the previous quarterly auction process.
- The revised choice screen features at least 5, and up to 12 search engines, including Google Search.
- The revised choice screen consists of a single, scrollable list of options displayed as follows:
 - The first 5 options listed are the 5 most popular eligible search engines in each EEA country and the UK (according to Statcounter), ordered randomly each time the choice screen is displayed.⁴³¹

⁴²⁸ Android, [About the choice screen](#), updated 8 February 2021, accessed via Wayback Machine 13 September 2021.

⁴²⁹ Android, [About the choice screen](#), updated 8 February 2021, accessed via Wayback Machine 13 September 2021.

⁴³⁰ Android, [About the choice screen](#), updated 8 June 2021, accessed via Wayback Machine 13 September 2021.

⁴³¹ To be eligible a search engine must to provide a general search engine service (rather than specialised or "vertical" search), must provide local language support in the countries where they participate, must have an app available for free in the Google Play Store and must ensure that Google has all the technical assets for the implementation. See: Android, [About the choice screen](#), updated 8 June 2021, accessed via Wayback Machine 13 September 2021.

- Up to 7 remaining search engines are displayed below the initial 5 options, shown in random order. If there are more than 7 eligible search engines to be shown on the choice screen in a particular country, 7 of these are selected at random each time the choice screen is displayed.
- The initial set of 5 eligible general search engine services are refreshed annually.

As previously noted, this Report largely focuses on the impact of the EU Android choice screen in effect between March 2020 and August 2021 (the second iteration). In particular, the timing of this Report means that the ACCC is not able to monitor the effects of the third iteration of the EU Android choice screen on general search engine services markets in the EEA. However, the ACCC's analysis and recommendations as to choice screen design below acknowledge these changes.

4.1.2. Choice screen design

Submissions to the Issues Paper have broadly supported the implementation of a choice screen, and stakeholders have expressed views regarding its design and implementation. These views can be broadly categorised into the following themes:

- applicability of the choice screen to search access points, types of devices and operating systems
- number of choices presented to users
- presentation and layout
- timing and frequency of display
- participation by competing search engine providers, and
- extent of regulatory oversight and monitoring.

Applicability

This section outlines stakeholder views and provides the ACCC's analysis regarding the applicability of the EU Android choice screen. It discusses which search access points and device types any future Australian choice screen should apply to, as well as identifying the need for further consideration regarding the application of a choice screen to browsers.

All search access points should be covered

For both the second and third iterations of the EU Android choice screen, the selection made by users results in that search engine being set as the default for the search widget on the device home screen and on the Chrome browser. If the selected search app is not already installed on the device, it is downloaded from the Google Play Store and installed on the device home screen in place of the Google Search widget. However, this does not cover all search access points on a mobile device in which a search engine can be set as a default (e.g. voice assistants).

Microsoft submits that when a consumer makes a selection from the choice screen, this selection should apply to all search access points on a device, including the home screen, browser, voice or personal assistant, camera and others.⁴³² This is important because of the variety of ways in which consumers access search. As noted by the DOJ in its October 2020 complaint regarding Google's conduct in search and search advertising markets, '[f]or both mobile and computer search access points, being pre-set as the default is the most effective

⁴³² Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 8. See also DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 80; FairSearch, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 22 April 2021, p 4.

way for general search engines to reach users, develop scale, and become or remain competitive.⁴³³

In particular, voice assistants are an increasingly important search access point. As discussed in chapter 1, the volume of searches conducted via voice assistants has been growing, and the number of active digital voice assistants is expected to continue to grow. As noted in chapter 2, the ACCC considers it important that users are provided with meaningful choice and at present, users may not be able to change the default search engine on their voice assistants. Accordingly, the ACCC considers that further consideration should be given to the feasibility of any choice screen selection applying to the default search engine on voice assistants.

Some stakeholders have raised concerns about nudges or dark patterns that encourage users to switch back to the pre-set search engine, and submit this conduct should be prohibited.⁴³⁴ For example, DuckDuckGo submits that Google automatically places a Google Search widget on the user's Android device when a user deletes a non-Google home screen search widget installed via the choice screen. DuckDuckGo submits that this type of conduct harms consumer choice and should be banned.⁴³⁵

The ACCC also understands that under current arrangements, any pre-installed Google Search widget remains on the device, even when an alternative search engine is selected from the choice screen.⁴³⁶ The ACCC also understands that modifying this practice may require Google to negotiate modifications with OEMs.⁴³⁷ Accordingly, the ACCC considers that the design of a choice screen should also take into account the retention and placement of the Google Search widget after a consumer selects a rival search engine to be the default. Consideration should also be given to whether the Google Search widget is automatically reintroduced after a user removes a rival search engine as the default.

All Android devices should be covered

Both the second and third iterations of the EU Android choice screen only apply to new Android mobile devices shipped to the EEA and approved for sale by Google. They do not apply to tablets or desktop devices, mobile devices manufactured by Google (i.e. Google Pixels), non-Android mobile devices, or existing Android mobile devices. The ACCC has considered the effect of these limitations on the effectiveness of a choice screen, and whether to extend any choice screen to non-Android devices.

In response to the Issues Paper, a number of stakeholders strongly support choice screens being presented on both new and existing devices.⁴³⁸ Microsoft submits that applying a choice screen only to new devices 'dilutes' its impact.⁴³⁹ Similarly, DuckDuckGo submits that limiting a choice screen to only new devices would mean that any changes to market share

⁴³³ US State Attorneys General, [Google Antitrust Complaint](#), 20 October 2020, p 18.

⁴³⁴ See: DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 9; FairSearch, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 22 April 2021, p 4; Oracle, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 16 April 2021, p 6.

⁴³⁵ DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 3.

⁴³⁶ As previously noted, the search widget of a rival search engine selected from the choice screen is downloaded and placed on the device home screen in the default place previously occupied by the Google Search widget. However, the Google Search widget still remains on the device within the Google folder.

⁴³⁷ As noted the 'Frequently Asked Questions' section of the Android blog post, apps are placed according to the OEM's device launcher logic. See: Android, [About the choice screen](#), updated 30 August 2021, accessed 13 September 2021.

⁴³⁸ See: Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 7; DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 4; FairSearch, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 22 April 2021, p 4.

⁴³⁹ Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 7.

would be slow, especially as the lifespan of mobile devices continues to increase, and the rate of device turnover declines.⁴⁴⁰

The ACCC notes that the first iteration of the EU Android choice screen applied to both existing and new Android devices, and it is unclear why the choice screen should be limited to new Android devices if the objective is to improve consumer choice and competition in search. To facilitate greater consumer reach, the ACCC supports any future choice screen applying to both new and existing devices.

Microsoft suggests that a choice screen should be offered on desktops and laptops, as well as on mobile and tablet devices. However, Microsoft noted that given the impact of defaults is more pronounced on mobiles, a choice screen on these devices should be prioritised.⁴⁴¹ The CMA similarly concludes that the case for imposing choice screens on desktop devices is weaker compared to mobile devices, as consumers are less likely to take steps to change or bypass defaults when faced with a smaller screen.⁴⁴²

As identified in chapter 1, the proportion of general searches conducted via mobile devices (rather than desktop devices) continues to grow. Further, as discussed in chapter 2, the tendency for consumers to remain with the pre-installed browser and pre-set search engine is stronger on mobile devices, compared to desktop devices. Given these considerations, the ACCC recommends that any future choice screen should apply to mobile devices in the first instance.

Finally, DuckDuckGo submits that despite the EC's 2018 Android Google decision not including Google Pixel smartphones, choice screens should nonetheless apply to these devices.⁴⁴³ Media reports suggest that Google Pixel is growing quickly in the United States⁴⁴⁴ and while it is difficult to predict the growth of Google Pixel in Australia, the ACCC notes that Google is the fifth largest supplier of mobile devices in Australia.⁴⁴⁵

As discussed further below, the impact of the EU Android choice screen has been limited. The ACCC considers that this is partly due to the fact that the choice screen only applies to new devices, and not to existing devices. In this respect, DuckDuckGo and FairSearch raised concerns that the third iteration of the choice screen is still only applicable to new devices upon activation.⁴⁴⁶

Given that the objective of the choice screen is to improve consumer choice and facilitate increased competition in the supply of search engine services, the ACCC considers that a search engine choice screen in Australia should apply to all new and existing Android devices. This should include both those manufactured by third-party OEMs and Google's own first-party devices, given the effect of pre-installation and default arrangements discussed earlier in this Report.

Further consideration needed to understand impacts of extending a choice screen beyond Android mobile devices and Google Chrome

The second and third iterations of the EU Android choice screen only apply to new Android mobile devices approved for sale by Google. In addition, they only cover the selection of a

⁴⁴⁰ Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 7; DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 8.

⁴⁴¹ Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 8.

⁴⁴² CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V7.

⁴⁴³ DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 4.

⁴⁴⁴ Strategy Analytics, [Google Pixel is Starting to Takeoff](#), 12 February 2019, accessed 13 September 2021.

⁴⁴⁵ Statcounter, [Mobile vendor market share Australia June 2020 - June 2021](#).

⁴⁴⁶ MLex, [Google's latest Android changes in EU won't restore competition, DuckDuckGo says](#), 31 August 2021, accessed 13 September 2021; FairSearch, [The Google Choice Screen: Statement from Thomas Vinje, counsel and spokesperson for FairSearch](#), 1 September 2021, accessed 13 September 2021.

search engine service and not the selection of a browser, whereas the first iteration of the EU Android choice screen applied to both browsers and search engines.⁴⁴⁷

The CMA has since considered these issues and concluded that the application of any choice screen should extend beyond Android devices to include Apple iOS devices. The CMA found that, due to the impact of pre-installations and defaults on mobile devices and Apple's significant market share in the UK, Apple's existing arrangements with Google have an exclusionary impact which harms competition between search engines on mobiles. As such, the CMA suggests it would be reasonable to introduce a choice screen more widely than is the case with the current EU Android choice screen, particularly on iOS devices.⁴⁴⁸

In the *Digital Platforms Inquiry Preliminary Report*, the ACCC considered the requirement that all suppliers of operating systems for mobile devices, computers and tablets be required to provide users with an option for browsers, and that suppliers of browsers be required to provide users with options for search engine services.⁴⁴⁹ Feedback from some stakeholders suggested that this could further entrench dominant companies and raise barriers to expansion for smaller suppliers of search.⁴⁵⁰ Accordingly, the ACCC did not proceed with this recommendation and instead recommended that the EU Android choice screen should be rolled out in Australia.

In response to the Issues Paper, Microsoft submits that choice screens should only apply to the dominant search provider, and should not be displayed where a non-dominant search provider has negotiated to be the pre-set search engine service within a browser, or is vertically integrated with a browser. Microsoft further submits that the choice screen should only apply where the arrangements involve a dominant search provider, since default arrangements further entrench the dominant search provider's position and deny the opportunity for competitors to gain critical scale.⁴⁵¹ In practice, under the current default arrangements, this would mean that all pre-installation and default arrangements concerning Google Search would be subject to a choice screen, regardless of the OEM or operating system used on the device.

The ACCC recognises that expanding the choice screen beyond Android devices would have consequences for the monetisation of search default placements by OEMs, including Apple, and browser suppliers. Requiring a choice screen to be implemented on any device may remove the incentive for search engines to pay OEMs and/or browser suppliers for being the pre-set search engine. This may have implications for prices in related markets, such as higher device prices or changes to the business models of browsers. This may also have unintended consequences for competition in search engine services if applied to OEMs or browsers that have default arrangements with non-dominant search engine providers. For example, it would remove an existing opportunity for search engine competitors with a smaller market share to grow.

However, Google continues to have significant market power in the supply of search engine services in Australia, and its pre-installation and default arrangements forecloses important search access points for rival search engines. Apple devices comprise over 50% of the mobile devices supplied in Australia.⁴⁵² Accordingly, the ACCC recommends that further consideration be given to the application of any future choice screen in Australia to both

⁴⁴⁷ In a March 2019 blog post, Kent Walker, SVP of Global Affairs of Google stated 'Now we'll also do more to ensure that Android phone owners know about the wide choice of browsers and search engines available to download to their phones. This will involve asking users of existing and new Android devices in Europe which browser and search apps they would like to use.' See K Walker, [Supporting choice and competition in Europe](#), 19 March 2019, accessed 13 September 2021.

⁴⁴⁸ CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V18.

⁴⁴⁹ ACCC, [Digital Platforms Inquiry Preliminary Report](#), 10 December 2018, p 10. See also: ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 111.

⁴⁵⁰ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 111.

⁴⁵¹ Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 5.

⁴⁵² ACCC, [DPSI March 2021 interim report](#), 28 April 2021, p 4.

Android and iOS devices; however, this must be carefully balanced against the potential for higher device prices for consumers or other harms. In addition, the impact of a choice screen to select a default search engine on non-Chrome browsers should be further considered, with the potential benefits for competition and consumer choice balanced against the loss of monetisation for browser suppliers.

Further consideration needed to understand the impact of a choice screen for browsers

Browsers are a key way in which consumers access search engine services. The ACCC 2021 consumer survey found that the most common way that consumers access search engine services on both mobile and desktop devices is by typing a search query in the browser's address bar (44% on smartphones and 61% on desktops) (see table 1.1).⁴⁵³ However, the ACCC 2021 consumer survey found only 18% of consumers reported that they changed the default search engine on the browser on their smartphone in the last 2 years⁴⁵⁴, and there is also some evidence that consumers do not understand the difference between a search engine and a browser.⁴⁵⁵

Accordingly, there is some rationale for considering whether there should be a choice screen for browsers, in addition to search engines. This matter is beyond the scope of the current Report,⁴⁵⁶ however the ACCC recommends that there be further consideration of the merits of having a choice screen for browsers. As previously noted, this will involve an assessment of how a browser choice screen would interact with any choice screen for search, and the implications for monetisation and existing business models for browsers and OEMs, among other things. As noted by FairSearch, if there is both a choice screen for browsers and a choice screen for search engines, it is important to consider the sequencing of the screens so as to respect the individual user's choice to a maximum extent.⁴⁵⁷

Number of choices presented

The second iteration of the EU Android choice screen presented 3 rival search engines in addition to Google Search. The third iteration features up to 12 rival search engines, with at least 4 rival search engines (in addition to Google Search) shown on the screen without a user needing to scroll to view them.

Several stakeholders submit that the second iteration of the EU Android choice screen created 'artificial scarcity' by limiting the number of places on the choice screen to 4 search engines (including Google Search), arguing this restricted the amount of potential competition to Google.⁴⁵⁸ Many stakeholders submitted that the Microsoft browser choice screen, which provided up to 12 browser options (outlined in box 4.1 below), provided an alternative choice screen model that should be considered in Australia.⁴⁵⁹

⁴⁵³ Roy Morgan Research, *Consumer Views and Use of Web Browsers and Search Engines*, September 2021, pp 24, 26.

⁴⁵⁴ Roy Morgan Research, *Consumer Views and Use of Web Browsers and Search Engines*, September 2021, p 54.

⁴⁵⁵ P Akman, [A Web of Paradoxes: Empirical Evidence on Online Platform Users and Implications for Competition and Regulation in Digital Markets](#) (2021) p 32.

⁴⁵⁶ As noted in section 4.2, in formulating its advice to Government regarding the potential application of a choice screen in Australia, the ACCC has primarily considered the EU Android choice screen (applying only to search engine selection), as this was the choice screen in place when the ACCC undertook its analysis.

⁴⁵⁷ FairSearch, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 22 April 2021, p 2.

⁴⁵⁸ See: DuckDuckGo, [Search preference menus: improving choice with design](#), 28 January 2020, accessed 13 September 2021; Ecosia, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 3; FairSearch, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 22 April 2021, p 6; Oracle, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 16 April 2021, p 8; CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V10.

⁴⁵⁹ See: Australian Communications Consumer Action Network, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 3; DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 101; Ecosia, [Submission to the ACCC Digital Platform Services Inquiry Third Interim](#)

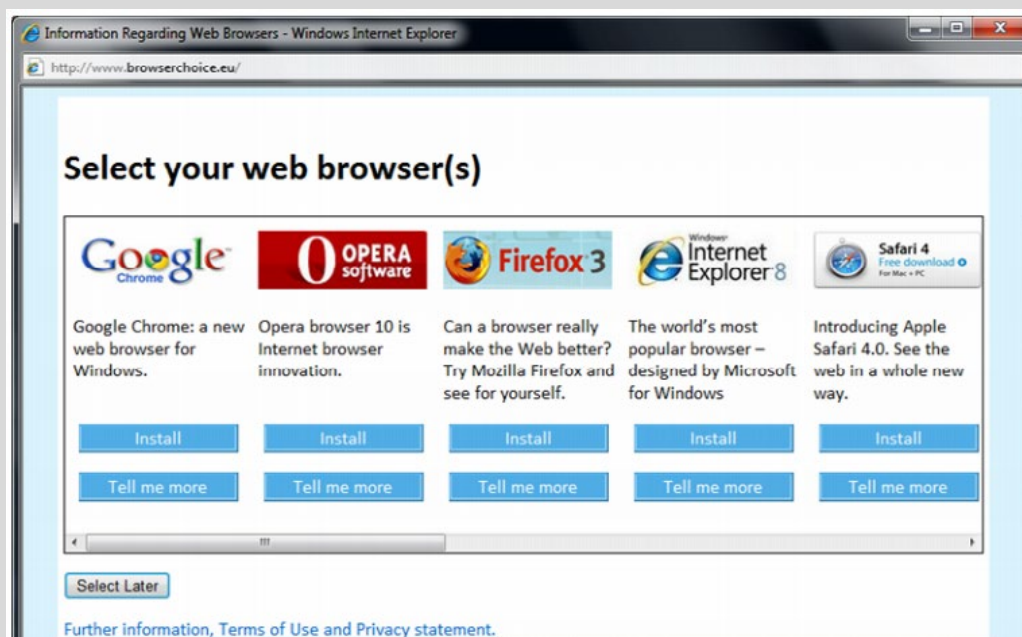
The ACCC notes that the third iteration of the EU Android choice screen more closely mirrors the Microsoft browser choice screen by displaying additional options, and with participation being free for rival search engines, based on existing market share.

Box 4.1: Microsoft browser choice screen

In December 2009, the EC adopted a decision giving effect to Microsoft's commitment to offer a choice screen for web browsers on Windows operating systems and to allow OEMs and users the ability to turn off Internet Explorer for a period of 5 years.⁴⁶⁰ This commitment aimed to improve competition in the market for web browsers in the EEA. This commitment also aimed to address concerns by the EC that Microsoft had tied its Internet Explorer browser to the Windows PC operating system, breaching EU rules prohibiting abuse of a dominant market position.⁴⁶¹

The choice screen displayed up to 12 browser options, with inclusion based on existing market shares. The list was updated every 6 months, on the basis of several independent sources of market share information.⁴⁶² The top 5 browsers were displayed on an initial choice screen, and up to an additional 7 were displayed on a second screen. This second screen could be accessed by a user scrolling horizontally using the scroll bar function (see figure 4.3 below). Options were presented in randomised order on each screen, and rivals were not required to pay Microsoft to be featured.

Figure 4.3: Microsoft browser choice screen



Source: European Commission, Case documents (Annex B)

[Report](#), 14 April 2021, p 7; FairSearch, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 22 April 2021, p 7; Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 8; Oracle, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 16 April 2021, p 3.

⁴⁶⁰ European Commission, [Commission accepts Microsoft commitments to give users browser choice](#), published 16 December 2009, accessed 13 September 2021. In March 2013, the EC fined Microsoft €561 million for failing to comply with its commitments to offer users a browser choice screen between May 2011 and July 2012: see European Commission, [Antitrust: Commission fines Microsoft for non-compliance with browser choice commitments](#), published 6 March 2013, accessed 13 September 2021.

⁴⁶¹ European Commission, [Commission accepts Microsoft commitments to give users browser choice](#), published 16 December 2009, accessed 13 September 2021.

⁴⁶² European Commission, [Anti-trust: Commission accepts Microsoft commitments to give users browser choice – frequently asked questions](#), 16 December 2009, accessed 13 September 2021.

While there were significant changes to Microsoft’s browser market share during the period this choice screen was displayed, it is unclear how much this was a direct result of the choice screen. Internet Explorer’s market share was declining prior to the commencement of the choice screen in 2010. Further, this decline was also evident in countries where the choice screen was not displayed, including the US, Australia and Canada.⁴⁶³

The ACCC understands that 94% of the time that users made a selection via the Microsoft browser choice screen, they selected one of the first 4 browsers options presented.⁴⁶⁴ These options all featured on the first page of the choice screen, and did not require a user to scroll across to a second screen in order to view them. While these rates of selection may be largely attributed to the fact that they corresponded to the browsers with the highest market share at the time (indicating their existing popularity), the extent to which users scrolled to view additional options presented on the second screen is unclear.⁴⁶⁵

The CMA notes the design decisions associated with a choice screen, including the number of choices available, can significantly influence a user’s decisions.⁴⁶⁶ In October 2019, DuckDuckGo published research which found that a choice screen presenting 8 search engine options would result in Google’s competitors having a higher collective market share of the mobile search market than a choice screen presenting 4 search engine options.⁴⁶⁷

The ACCC recommends further research and user testing be undertaken to determine the optimal number of choices to be presented on any future choice screen in Australia.

Layout

This section summarises stakeholder views regarding the layout of a choice screen and the ACCC’s views on the availability of search engine descriptions featured, the importance of randomised ordering, and the value of including an introductory screen.

Figure 4.2 above displays the EU Android choice screen that was presented to users during device set-up on new Android devices between March 2020 and August 2021 (the second iteration of the EU Android choice screen). Figure 4.4 below displays the current EU Android choice screen (the third iteration of the EU Android choice screen), applying from September 2021.

⁴⁶³ O Duque, [Active Choice vs. Inertia? An Exploratory Analysis of Choice Screens Applied in the European Microsoft Antitrust Case](#) (January 14, 2021), pp 2-3.

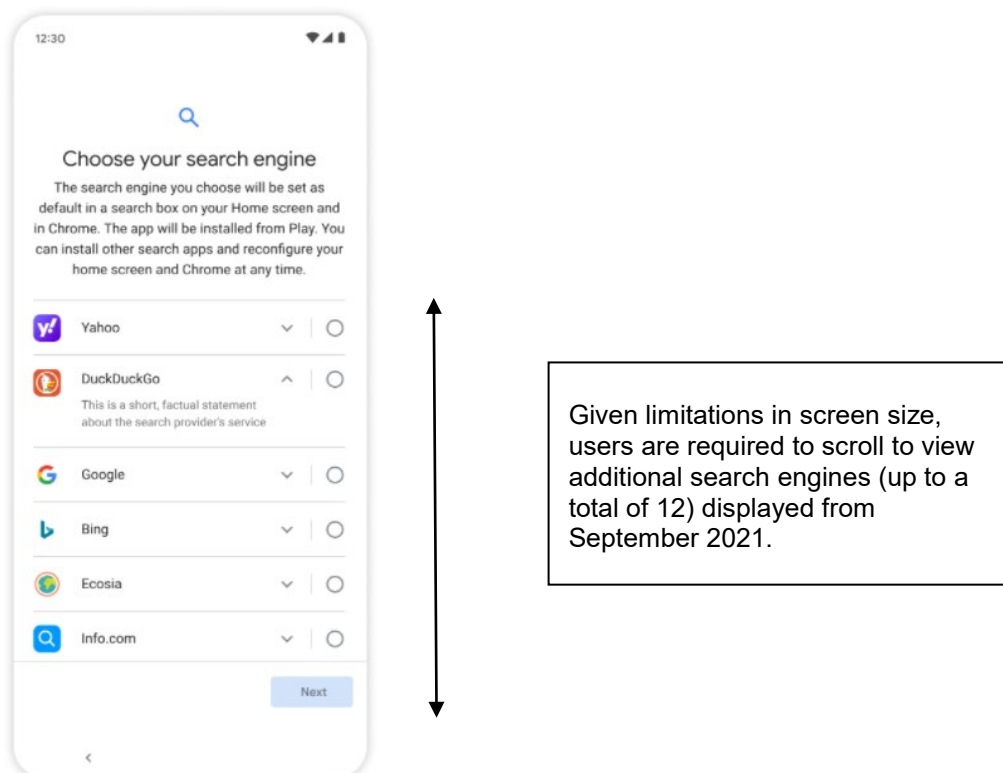
⁴⁶⁴ Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 8.

⁴⁶⁵ DuckDuckGo conducted an experiment of 334 Android mobile users in Europe showing that even when Google was presented on the first choice screen, 64.4% of users scrolled beyond the first screen to consider other search engines before making their selection. In a second test of 356 users, this rose to 79.8% of users scrolling to view the options presented on the second screen when Google did not feature on the first screen. See: DuckDuckGo, [Search Preference Menu: Google Auction Ignores Screen Size and Scrolling](#), 20 May 2020, accessed 13 September 2021.

⁴⁶⁶ CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V10.

⁴⁶⁷ DuckDuckGo, [Search Preference Menu Immediately Increases Google Competitors’ Market Share by 300-800%](#), 30 October 2019, accessed 13 September 2021.

Figure 4.4: The third iteration of the EU Android choice screen (effective on new Android devices distributed in the EEA from September 2021)

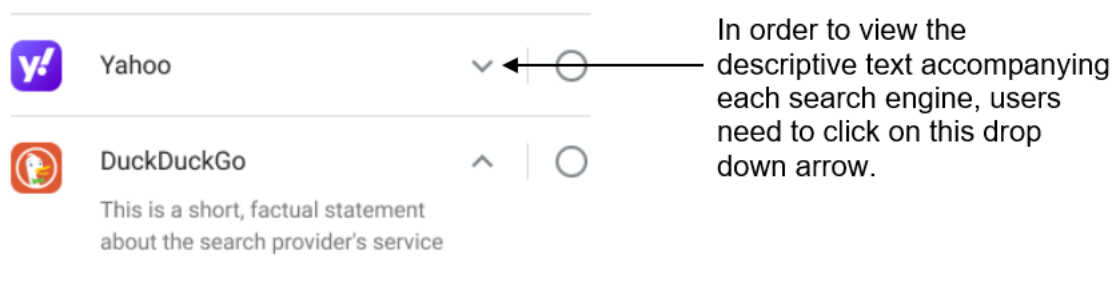


Source: Android, [About the choice screen](#), accessed 13 September 2021.

Descriptions presented

While Google permits the use of brief descriptive text⁴⁶⁸ below the name of the search engine displayed, the ACCC understands that its current approach restricts the inclusion of additional information.⁴⁶⁹ This may limit the ability of rival search engines to promote their features or points of differentiation. As illustrated in figure 4.5 below, in order to view the current descriptions, a user is required to first click on the drop-down arrow next to the search engine provider's name.

Figure 4.5: Drop down arrows showing descriptive text



Source: Android, [About the choice screen](#), accessed 13 September 2021.

⁴⁶⁸ For example, the brief description 'We don't track you. Privacy, simplified' was displayed below DuckDuckGo's name on the March 2020 – August 2021 EU Android choice screen.

⁴⁶⁹ The ACCC understands Google's current approach means DuckDuckGo is not permitted to provide consumers with additional information on their approach to privacy protection, and Ecosia is similarly not permitted to promote their tree planting initiatives. Google's current approach also prohibits the use of incentive-based descriptions, limiting Microsoft's ability to promote its Microsoft Rewards points program. See: CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V10.

DuckDuckGo submits that descriptions should be displayed without the need for additional user interaction with the choice screen. DuckDuckGo also submits that the size of search engine logos presented should be larger, and that this would make it easier for users to quickly recognise trusted search engine brands.⁴⁷⁰

While the ACCC is supportive of design elements that facilitate more informed consumer choice, size limitations on most mobile device screens may practically prohibit how much information can be displayed to consumers. The ACCC also notes that any increase in the amount of text displayed would result in a decrease in the number of choices that can be displayed without scrolling. The next section, which outlines the extent of regulatory oversight, may assist in resolving issues regarding the appropriate level of detail to be provided in descriptive text to help ensure consumers are informed of the features of a search engine.

Randomised ordering

Many stakeholders stress the importance of randomised ordering of the choices presented, and not giving prominent placement to the default.⁴⁷¹ The ACCC understands that both the second and third iterations of the EU Android choice screen display options in a randomised order.⁴⁷² As discussed in chapter 2 and in behavioural insights literature, the order in which options are displayed can have a significant impact on consumer choice.⁴⁷³ For this reason, the ACCC supports the requirement that any future choice screen include randomised ordering, as is currently the case.

Introductory screen

DuckDuckGo has stated that users should first be presented with an introductory screen, explaining to users that they are not permanently bound by their choice, and are free to switch their search engine at a later date. It argues that this would help ‘ensure consumers slow down and get in the right frame of mind to make a search engine selection.’⁴⁷⁴ DuckDuckGo research indicates that simply adding the sentence ‘you can always select another search engine later’ may substantially increase the adoption of non-Google search engines.⁴⁷⁵

Subject to further user testing, the ACCC supports a choice screen including a statement to make it clear to users that their selection of a search engine is not binding, and can be changed at any time.

Timing and frequency of display

Both the second and third iterations of the EU Android choice screen are displayed during the initial device-set up on new Android devices. In order to access the choice screen again at a later date, a user is required to undertake a factory reset of their device, which has other implications for the usability of the device (e.g. the user may lose many of the actions that they have taken to personalise their device). Accordingly, the time at which a choice screen is displayed to a consumer, and the frequency of display or ability for a user to access the screen again at a later point in time, can affect the effectiveness of a choice screen.

⁴⁷⁰ DuckDuckGo, [Search preference menus: improving choice with design](#), 28 January 2020, accessed 13 September 2021.

⁴⁷¹ See: DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 57; Ecosia, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 5; FairSearch, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 22 April 2021, p 3; Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 8; Oracle, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 16 April 2021, p 6.

⁴⁷² Android, [About the choice screen](#), updated 30 August 2021 accessed 13 September 2021.

⁴⁷³ OECD, [Improving online disclosures with behavioural insights](#), April 2018, p 27.

⁴⁷⁴ DuckDuckGo, [Search Preference Menus: Improving Choice With Design](#), 28 January 2020, accessed 13 September 2021.

⁴⁷⁵ DuckDuckGo, [Search Preference Menus: Improving Choice With Design](#), 28 January 2020, accessed 13 September 2021.

Timing of the choice screen

The time at which a choice is presented to a user can influence their decision. Research by the Norwegian Consumer Council suggests that, since consumers are often using digital services on their devices while ‘on the go’, forcing users to make a decision is a particularly strong nudge.⁴⁷⁶ When a user is trying to get through the set-up process quickly in order to access their new device, the immediacy of a task can reduce the likelihood that a user will take the time to read through and consider all choices presented. It is also more likely to result in a consumer sticking with the dominant provider as a more familiar choice. Indeed, familiarity was cited by many respondents to the ACCC 2021 consumer survey as a key reason why they use their preferred search engine.⁴⁷⁷

In its submission to the Issues Paper, Google cited a survey of Australian Android users in which 50% of respondents answered ‘no’ to the question ‘would you like to have a series of screens that require you during device setup to make a decision on which search and browser apps are set as default on a new Android device?’⁴⁷⁸ Nearly 29% of respondents answered ‘I don’t know’, and 21% answered ‘yes’.⁴⁷⁹

The ACCC recognises that displaying a choice screen to users during the device setup process may add friction. The ACCC further considers that displaying the choice screen only at initial set up, without the ability for a user to return to that screen absent a device reset, is unlikely to provide consumers with a meaningful choice. This issue may be resolved if users are able to easily access the choice screen again during use of the device, or if the choice screen is presented to users at another point in time. Accordingly, prior to the introduction of any future choice screen in Australia, the ACCC recommends further research and user testing to determine the optimal timing of its display.

Frequency of display

Some stakeholders submit that the EU Android choice screen should be displayed periodically, and should be made accessible to users again at a later date. FairSearch proposes that the choice screen should be offered to all existing users, and displayed periodically when a software update takes place.⁴⁸⁰ DuckDuckGo submits that the choice screen should be displayed to users quarterly,⁴⁸¹ and that it should be available for users to access at any time via the device’s settings menu.⁴⁸²

DuckDuckGo also submits that Google should be required to update software code in the Android operating system such that users are able to obtain the choice screen outcomes by navigating to a search engine website, or by downloading a search engine app. In this way, Google should provide a mechanism that allows search engines to trigger a choice screen with one click.⁴⁸³ This would bypass the periodic display (or non-display) of choice screens to users and also address the issues highlighted in chapter 2 regarding the process required to change the default search engine for each search access point. In particular, this would allow consumers to install their preferred search engine and have this pre-selected as the default search engine for all search access points on their device with just one click.

⁴⁷⁶ Norwegian Consumer Council, [Deceived by design: how tech companies use dark patterns to discourage us from exercising our rights to privacy](#), 27 June 2018, p 27.

⁴⁷⁷ Roy Morgan Research, [Consumer Views and Use of Web Browsers and Search Engines](#), September 2021, p 64.

⁴⁷⁸ Survey respondents only included Australian Android users, meaning the results may not be reflective of Australian smartphone users more broadly. See Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 39.

⁴⁷⁹ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 39.

⁴⁸⁰ FairSearch, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 22 April 2021, pp 3-4.

⁴⁸¹ DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 4.

⁴⁸² DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 62.

⁴⁸³ DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 3.

The ACCC supports the choice screen either being accessible at a later date via the settings menu on a device, or being displayed periodically to the user. This option would offer users another opportunity to make an informed choice, particularly for those who do not engage meaningfully during the set-up process. Having the choice screen available at a time of their choosing would allow a user to better consider and engage with the selection process. In the event that any future choice screen is to be displayed periodically, further consideration and user testing should be undertaken to determine the optimal frequency of its display.

Ensuring consumers are presented with meaningful choice

Microsoft submits that users should be required to make a selection from a choice screen, and should not be able to dismiss the choice screen or move on to the next step in the device set-up without first making a selection.⁴⁸⁴ The ACCC understands that users could dismiss (or 'skip') the first iteration of the EU Android choice screen without making a selection, but that the choice screen would be presented to the user again in future. This is not the case under the second and third iterations of the choice screen, which require users to select a search engine service from the list presented before proceeding.⁴⁸⁵ The ACCC supports the selection of a search engine service from the choice screen being mandatory, as this would partially overcome some of the default bias identified and discussed in chapter 2.

FairSearch submits that choice screens should not include buttons displaying 'next', 'finish', 'thank you', or a similar prompt that may encourage a user to click and move on without making a selection. It further submits that such prompts can have the effect of consolidating the status quo in favour of the default option. Once a user has made their selection, this should be respected and use of any technique to nudge the user back towards the default search provider should be prohibited.⁴⁸⁶ The impact of nudges, negative choice architecture and dark patterns on consumer choice, as well as potential measures to minimise their use, are discussed further in chapter 2.

The ACCC believes that the design of a choice screen should remove nudging or dark patterns that adversely affect consumer choice. Regulatory oversight may assist in overcoming this issue.

Participation

Participation in the second iteration of the EU Android choice screen was based on an auction model, and was open to suppliers of general search engine services who do not syndicate search results or ads from Google. Eligible search engines bid the price they were willing to pay each time a user selected them from the choice screen, and the 3 highest bidders were featured on the choice screen, alongside Google Search. Each time a search engine was selected by a user, it paid Google the price bid by the fourth-highest bidder (the highest losing bid).⁴⁸⁷ Between March 2020 and June 2021, auctions occurred in each EEA country and the United Kingdom on a quarterly basis.⁴⁸⁸

Search engines were charged each time they were chosen by a user ('per install'), rather than each time they appeared on the choice screen ('per appearance').⁴⁸⁹ Michael Ostrovsky, an academic specialising in auction theory, argues that an auction system in which payments are made on a 'per install' basis advantages search engines that prioritise maximising revenue-per-user over those with an alternative business model. This is because

⁴⁸⁴ Microsoft, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 8.

⁴⁸⁵ Users are required to choose one search provider from the choice screen during setup. See: Android, [About the choice screen](#), updated 30 August, accessed 13 September 2021.

⁴⁸⁶ FairSearch, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 22 April 2021, p 8.

⁴⁸⁷ Android, [About the choice screen](#), updated 8 February 2021, accessed via Wayback Machine 13 September 2021.

⁴⁸⁸ The options shown in Q2 2021 continued to be shown in Q3 2021 until the choice screen was updated in September 2021.

⁴⁸⁹ M Ostrovsky, [Choice Screen Auctions](#), *National Bureau of Economic Research*, No. w28091, November 2020, p 6.

search engines with a higher revenue-per-user can afford to bid higher amounts in auctions run on a per-install basis.⁴⁹⁰

A number of stakeholders identified similar criticisms, submitting that this auction model disadvantages less profitable search engines (e.g. those with a focus on non-profit donations and/or privacy protection), and may force out purpose-driven search engines from the Android platform.⁴⁹¹ Stakeholders also consider this model allowed Google to benefit financially by extracting profits from competing search engines, further limiting rivals' ability to compete with Google through investments in expansion and innovation.⁴⁹² Ecosia submits that, given a portion of users would have chosen non-Google search engines in the absence of a choice screen, the auction model forced these search engines to pay for access to users they would have otherwise received.⁴⁹³

DuckDuckGo submits that the winners of the choice screen auctions often did not reflect consumer expectations or market shares.⁴⁹⁴ For example, in the March 2021 round of the EU Android choice screen, the search engines that won auctions in the highest number of countries were PrivacyWall (30 countries), GMX (23 countries), Bing (13 countries), Info.com (12 countries) and Yandex (12 countries).⁴⁹⁵ Search engines that won a place on the choice screen in a low number of countries include DuckDuckGo (3 countries), Seznam (2 countries), Ecosia (2 countries) and Qwant (one country). While the popularity of search engines varies by country, PrivacyWall, GMX and Info.com have relatively low usage across Europe.⁴⁹⁶

The ACCC notes that many of the alternate search engines featured on the second iteration of the EU Android choice screen have minimal presence in Australia.⁴⁹⁷ The ACCC has not analysed the business models of PrivacyWall, GMX or Info.com. However, if these search engines are able to earn a high revenue-per-user relative to other search engines, this would support the view that the previous choice screen auction model disadvantaged search engines with a lower average revenue-per-user (which may nonetheless present a more valuable service to consumers, as evidenced by their market shares).

As previously noted, in the third iteration of the EU Android choice screen, rival search engines are no longer required to pay Google in order to feature. Selection is instead split into 2 categories:

⁴⁹⁰ M Ostrovsky, [Choice Screen Auctions](#), *National Bureau of Economic Research*, No. w28091, November 2020, p 6.

⁴⁹¹ See: DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 101; Ecosia, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 4; Oracle, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 16 April 2021, p 8; FairSearch, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 22 April 2021, p 6.

⁴⁹² Oracle, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 16 April 2021, p 8; DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 81; FairSearch, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 22 April 2021, p 6.

⁴⁹³ Ecosia, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 5.

⁴⁹⁴ DuckDuckGo, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 14 April 2021, p 81.

⁴⁹⁵ Android, [Choice Screen Auction Options](#), updated 8 March 2021, accessed via Wayback Machine 13 September 2021.

⁴⁹⁶ Examples of countries with relatively popular non-Google search engines include Russia, in which Yandex had 47% search market share as of June 2021, and the Czech Republic, in which Seznam had 13% search market share as of June 2021. Conversely, in Austria, Ireland and Denmark (countries in which PrivacyWall, GMX and Info.com all featured on the choice screen between April and August 2021), none of these search engines had enough usage to appear in Statcounter's search market share data as of June 2021. Similarly, PrivacyWall, GMX nor Info.com had enough usage to appear in Statcounter's search market share data for Europe in aggregate as of June 2021. See Statcounter, [Search engine market share Russia Federation June 2020 - June 2021](#); Statcounter, [Search engine market share Czech Republic June 2020 - June 2021](#); Statcounter, [Search engine market share Austria June 2020 - June 2021](#); Statcounter [Search engine market share Ireland June 2020 - June 2021](#), June 2021; Statcounter, [Search engine market share Denmark June 2020 - June 2021](#); and Statcounter, [Search engine market share Europe June 2020 - June 2021](#).

⁴⁹⁷ PrivacyWall, GMX nor Info.com had enough usage to appear in Statcounter's search market share data for Australia as of June 2021. See Statcounter, [Search engine market share Australia June 2020 - June 2021](#).

- the 5 most popular eligible search engines in each country (according to Statcounter's search market share data for desktop, mobile and tablet for the previous 6 months) are the first 5 options displayed on the choice screen, ordered randomly,
- up to 7 remaining eligible search engines that apply to be featured are shown below the initial 5, also ordered randomly.⁴⁹⁸

While supportive of the removal of the auction model for participation on the choice screen, DuckDuckGo submits that Statcounter data has limitations as a measure of search engine market share, and that alternative sources may provide more accurate representations of market shares.⁴⁹⁹

The ACCC supports the September 2021 changes to the EU Android choice screen participation model, and will continue to monitor developments in the EEA to the effect of these changes on the markets for search services. However, the ACCC considers that any future Android choice screen introduced in Australia should be based on a similar model to the third iteration of the EU Android choice screen, in that participation is free for rival search engines and based on an objective measure provided by an independent third party. Further research and user testing is required to establish the most appropriate measure to determine which search engines feature on a choice screen in Australia. While participation based on market share is likely to lower barriers to expansion for existing search engine rivals, the ACCC acknowledges that barriers to entry are likely to remain high for new search engines. For this reason, future consideration of other initiatives to support new entrants may be warranted, as discussed in section 4.3.

Regulatory oversight

Stakeholder submissions have highlighted the need for regulatory oversight to ensure that a choice screen meets its intended objectives.

Oracle advocates for regulatory involvement in specific choice screen design decisions, including the number of options presented, layout, descriptions provided, timing and frequency of display.⁵⁰⁰ Mozilla submits that it may be helpful to invite public opinion on the design, including the involvement of ethical design theorists to help ensure choice screens do not include dark patterns that may favour the default search provider.⁵⁰¹ FairSearch submits that an expert should be appointed to monitor compliance with any future choice screen obligations and report to Government on a regular basis and that these reports should be made public.⁵⁰² The Centre for Responsible Technology recommends that the ACCC should set the parameters of any future choice screen introduced in Australia, and monitor its implementation on a quarterly-basis.⁵⁰³

The CMA similarly concludes there is an important role for a regulator to play in scrutinising the design of any choice screens implemented by platforms owners, OEMs and web browsers. It further noted that such involvement is likely to require the trialling of different versions to ensure the choices are sufficiently visible and comprehensible to users.⁵⁰⁴

The ACCC considers that if choice screens are introduced they should be subject to appropriate Government involvement in the design of the choice screen and oversight of its

⁴⁹⁸ Android, [About the choice screen](#), updated 30 August 2021, accessed 13 September 2021.

⁴⁹⁹ DuckDuckGo, [Supplementary submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 9 July 2021, p 1.

⁵⁰⁰ Oracle, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 16 April 2021, p 7.

⁵⁰¹ Mozilla, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 15.

⁵⁰² FairSearch, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 22 April 2021, pp 11-12.

⁵⁰³ The Centre for Responsible Technology, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 3.

⁵⁰⁴ CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V12.

implementation. This would also help resolve some of the issues identified above, particularly the possibility of nudges or dark patterns on user interfaces that negatively affect consumer choice. Such involvement by the Government would lend credibility to any future choice screen and improve transparency. Given the ACCC's experience in analysing the supply of search engine services and other digital platform services in Australia, and the ACCC's work analysing the rollout of the EU Android choice screen and other choice screens implemented in the past, the relevant regulator should be the ACCC.

4.1.3. Impact of the EU Android choice screen

In considering whether the EU Android choice screen should be rolled out to Australia, the ACCC sought to evaluate its effectiveness by considering the consumer reach of the choice screen, as well as any changes to search engine market share in the EEA.

Consumer reach

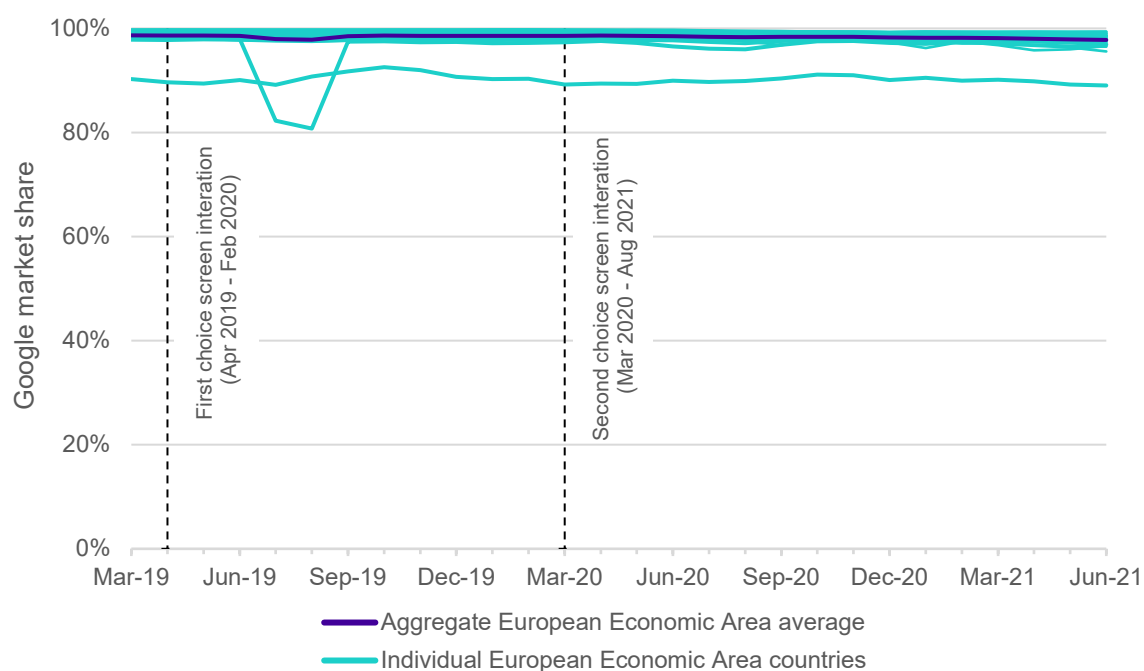
The number of users presented with the EU Android choice screen in the first year of its rollout in Europe was likely lower than anticipated as a result of the COVID-19 pandemic, which has disrupted supply chains and led to decreased demand for hardware in the EU.⁵⁰⁵ This has likely significantly affected the reach of the EU Android choice screen, resulting in a fewer users being presented with the option to select their preferred search engine from the choice screen.

Market shares

Figure 4.6 illustrates that there has been no obvious change to Google's market share in any individual EEA country, or in aggregate across Europe, since the introduction of the first or second iterations of the EU Android choice screen. Market share data for the period following the third iteration of the EU Android choice screen is not available at the time of writing. However, the ACCC will continue to monitor the effect of the changes to search markets in the EEA, if any.

⁵⁰⁵ European Parliament, [Impacts of the COVID-19 pandemic on EU industries](#), 29 March 2021, p 32.

Figure 4.6: Google market share in the supply of general search engine services in Europe



Source: ACCC analysis using Statcounter GlobalStats

Google’s aggregate market share across Europe more generally has remained largely the same: 93.00% in June 2021, compared to 93.88% in January 2020.⁵⁰⁶

However, there are other markets in which choice screens have been shown to have greater impact. The Android choice screen introduced in Russia in 2017 (see box 4.2 below) provides an example of where a choice screen has had a greater impact in a market that already had a viable competitor to Google.

Box 4.2: Android choice screen in Russia

In 2017, Google introduced an Android choice screen for search in Russia. This followed a decision by the Russian Federal Antimonopoly Service that Google had restricted competition in the market for mobile applications by placing restrictions on the manufacturers of mobile devices with access to the Google Play application. These restrictions included the mandatory pre-installation of other Google apps together with Google Play, the preferential placement of Google apps on device home screens, and the mandatory instalment of Google Search as the pre-set search engine.⁵⁰⁷ This decision is discussed further in box 3.7.

Following Google’s release of an updated version of Chrome for mobile, Android users in Russia were presented with a prompt urging them to select their default search engine when they opened the Chrome app. Options presented on the choice screen were Yandex, Google and Mail.ru.⁵⁰⁸ The requirement for this choice screen are contained in a

⁵⁰⁶ Statcounter, [Search engine market share Europe January 2020 - June 2021](#).

⁵⁰⁷ Federal Antimonopoly Service (FAS) of the Russian Federation, [FAS Russia Reaches Settlement with Google](#), 17 April 2017, accessed 13 September 2021.

⁵⁰⁸ D Meyer, [Google Is Suggesting Other Search Engines for Russian Android Users](#), 7 August 2017, accessed 13 September 2021.

court-approved settlement agreement.⁵⁰⁹ This differs to the EU Android choice screen, which was offered voluntarily by Google, and does not form part of a formal court settlement.

Russian search market dynamics

Prior to the announcement of the choice screen in April 2017,⁵¹⁰ Yandex already held over 30% of the market share for search on mobile devices in Russia.⁵¹¹ By the end of 2018, Yandex's market share had risen to 48%, and during the same period Google's share fell from 68% to 51%.⁵¹² Since January 2019, Yandex's market share on Android-operated devices in Russia has surpassed that of Google.⁵¹³

Antitrust expert Matt Stoller considers that Google still has 'reasonable' market share and is still profitable in Russia, noting it did not pull out of the country following the choice screen.⁵¹⁴ Stoller concludes that this demonstrates that reasonable competition measures, such as choice screens, can create more space in the market for other players without destroying the dominant firm's ability to operate successfully.⁵¹⁵

4.2. Application of a choice screen in Australia

This section sets out ACCC's advice to Government regarding the potential application of a choice screen in Australia.

In formulating its advice, the ACCC has primarily considered the second iteration of the EU Android choice screen (applying only to search selection), as this was the choice screen in place during the period the ACCC undertook its analysis. As discussed above, the ACCC recognises that the third iteration of the EU Android choice screen addresses some, but not all, of the issues identified with this choice screen's design and this is reflected in the below advice.

4.2.1. Advice to Government

Given the concerns and criticisms identified with the EU Android choice screen between March 2020 and August 2021 (the second iteration), and the lack of any notable impact on market concentration in EEA general search markets over this period, the ACCC does not recommend that a similar choice screen should be introduced in Australia.

The ACCC recognises that choice screens may facilitate greater consumer choice and help reduce barriers to expansion in search. In particular, they may assist with addressing default biases and customer inertia, and other issues associated with defaults and pre-installation arrangements explored elsewhere in this Report. However, given that the supply of search engine services in Australia is extremely concentrated and barriers to entry and expansion are high, the ACCC considers that choice screens on their own are insufficient to improve competition and consumer choice in search. Rather, any measures implemented in Australia to improve competition and consumer choice in search must account for:

⁵⁰⁹ Federal Antimonopoly Service (FAS) of the Russian Federation, [FAS Russia Reaches Settlement with Google](#), 17 April 2017, accessed 13 September 2021.

⁵¹⁰ Federal Antimonopoly Service (FAS) of the Russian Federation, [FAS Russia Reaches Settlement with Google](#), 17 April 2017, accessed 13 September 2021.

⁵¹¹ Statcounter, [Mobile search engine market share Russian Federation January 2017 - December 2017](#).

⁵¹² Statcounter, [Mobile search engine market share Russian Federation January 2017 - December 2018](#).

⁵¹³ CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V9.

⁵¹⁴ Matt Stoller, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 16 April 2021, p 9.

⁵¹⁵ Matt Stoller, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 16 April 2021, p 8.

- the market dynamics of search engine services in Australia
- the interrelationships between consumer use of browsers and search engine services, and
- the prevalence of device ecosystems and the effect of these ecosystems on individual markets.

Advice to Government on choice screens

The ACCC recommends the implementation of a mandatory choice screen, in combination with other measures, to improve competition and consumer choice in the supply of search engine services in Australia. This proposal will be subject to consultation with the market and further consideration in the fifth interim report of the Digital Platform Services Inquiry.

Given the ACCC's experience in analysing the supply of search engine services and other digital platform services in Australia and its role as the national competition and consumer agency, it is recommended that the ACCC should be given the power to mandate, develop and implement a choice screen for search services.

However, the design and implementation of the choice screen should be subject to detailed consultation with industry participants and user testing. It should also be proportionate to the competition and consumer choice issues identified in this Report, while minimising any adverse impacts on efficiency and the business models of industry participants. In particular, the design features of the choice screen, the application of the choice screen to relevant service providers, and its interaction with other proposed measures to apply to the market for search services, should be carefully considered.

At this stage, the ACCC considers that there are number of key elements that should be incorporated into a choice screen, and ACCC recommends that a choice screen should:

- apply to both new and existing Android mobile devices and to all search access points on those devices (to address the consequences of the substantial market power and vertical integration of Google in mobile operating systems and search services, and the resulting strategic position it occupies)
- allow search engines to be featured on the choice screen for free, based on an objective measure provided by an independent third party
- present an optimal number of search engine options to consumers (to be identified by consumer testing), and
- be accessible to users and presented at an appropriate time that would enable considered choice.

Subject to further consideration and user testing, the ACCC should also have the power to mandate the implementation of a search engine choice screen in relation to other devices (e.g. desktop devices) and operating systems (e.g. non-Android mobile devices) and the implementation of a choice screen in relation to browser selection.

The exact criteria to determine which providers would be subject to a direction from the ACCC to implement a choice screen or one of the other measures identified in this Report would need to be developed. However, the ACCC considers that the criteria should be linked to the provider's market power and/or strategic position.

Any future choice screen in Australia should be designed in a way that takes into account the features discussed in section 4.1 (and summarised in the box above) to ensure the choice screen best suits the needs of the market.

4.3. Other measures to be considered to address competition and consumer choice issues in the supply of search engine services

The ACCC considers that further measures are required to address the absence of significant competition in search. This section sets out other potential measures aimed at the supply of search engine services, which could form part of a broader regulatory framework in Australia.

The measures proposed in section 4.3, as well as the advice outlined section 4.2 above, should sit alongside the rules and powers proposed in the Digital Advertising Services Inquiry Final Report (the Ad Tech Report). The framework for these rules and powers will be considered as part of the fifth interim report under the Digital Platform Services Inquiry and in further reports by the ACCC. The fifth interim report will also involve a broader ACCC assessment of the need for digital platform ex-ante regulation to address common competition and consumer concerns we have identified across digital platform markets. The fifth interim report is due to the Treasurer by 30 September 2022 and the ACCC will release a concepts paper in the first quarter of 2022 seeking feedback to inform the report.

Further potential measures to address competition and consumer issues in the supply of search engine services

To address competition and consumer issues in the supply of search engine services, it is recommended that the ACCC be given powers to implement other measures beyond choice screens to improved competition and consumer choice in the supply of search engine services. Similar to the choice screen, this proposal will be subject to consultation with the market and more detailed consideration in the fifth interim report of the Digital Platform Services Inquiry.

These measures could potentially limit the ability of a search engine provider, which meets the pre-defined criteria, from:

- tying or bundling their supply of search engine services with their supply of other goods or services, and
- paying for certain default positions, subject to further consideration of the likely impacts of this measure on the business models of OEMs and browser suppliers.

The measures could also involve mandating such a provider to:

- provide access to its click-and-query data, and potentially other datasets, subject to extensive consideration of privacy impacts, and careful design and ongoing monitoring to ensure there are no adverse impacts on consumers, and
- when providing syndicated search results to downstream search engines, do so on fair, reasonable and non-discriminatory terms.

These measures could form part of a broader regulatory framework applicable to digital platform markets, and builds on recommendation 3 of the Ad Tech Report. As noted in that report, the ACCC intends to commence consultation regarding potential proposals for broader regulatory reform, including whether such regulatory rules are necessary, appropriate and proportionate, as well as the form of any such rules, in 2022.

The ACCC considers that the measures described below would be best implemented under a fit-for-purpose regulatory framework applicable to designated digital platforms. Such a framework could address systemic issues as they arise, as well as a broader range of

issues. It would also provide greater legal certainty around acceptable market conduct. The development of such a regulatory framework should be undertaken in consultation with relevant stakeholders to minimise any potential unintended outcomes

A broader regulatory framework designed specifically for digital platforms is consistent with developments overseas. In recent years, there has been a global push amongst competition agencies and policymakers to introduce new regulatory regimes in order to address issues relating to market power in digital platforms markets.⁵¹⁶ Proposals typically involve a range of regulatory tools which would be applicable to a small group of designated firms, recognising that competition law enforcement alone is not sufficient to address the systemic competition and consumer issues in these markets.⁵¹⁷ Similar regimes are being considered in other jurisdictions. A summary of overseas legislative proposals being considered in the UK, EU, USA, as well as recent legislative changes in Germany, is at Appendix B.

The ACCC acknowledges that provisions in the CCA prohibit a firm with substantial market power from damaging the competitive process by preventing or deterring rivals, or potential rivals, from competing on their merits. However, the ACCC considers that enforcement of the CCA is not sufficient to address the range of issues identified in relation to search engine services in Australia, as detailed in chapters 2 and 3. In particular, even if Google Search was not able to be pre-installed and set as the default search engine on the majority of mobile devices, the advantages that it has gained from its substantially greater scale mean that it is unlikely that effective competition would emerge absent further regulatory interventions.

The remainder of this section considers the following potential measures that could form part of a broader regulatory framework:

- unbundling and untying of search engine services with other services
- limitations on the ability for dominant search engines to pay for certain default positions
- mandating the provision of click-and-query data and other datasets to competing search engines
- mandating that any provision of syndicated search results to downstream search providers occurs on fair, reasonable and non-discriminatory terms.

4.3.1. Unbundling and untying search engine services from other services

The ACCC considers that, as part of a broader regulatory framework, dominant search engine services, or search engine services that meet some other pre-defined criteria, should be prevented from tying the supply of that good or service to another good or service supplied by the same platform.

As the supplier of the Android operating system and a range of ‘must have’ mobile apps, Google is able to leverage its market power to entice OEMs to accept a bundle of services, and to comply with certain requirements surrounding their position and use. This conduct was the basis for the EC’s 2018 Google Android decision, which found Google had abused its dominant position in the national markets for licensable smart mobile operating systems in order to cement its dominant position in the supply of general search engine services in

⁵¹⁶ C Carugati, [Digital Competition and Regulation in the World: A Primer](#), Université Paris II - Panthéon-Assas, 29 June 2021, pp 2-5.

⁵¹⁷ See: European Parliament, [Regulating digital gatekeepers: Background on the future digital markets act](#), December 2020, pp 3-4; CMA, [A new pro-competition regime for digital markets: Advice of the Digital Markets Taskforce](#), 8 December 2020, p 20; Subcommittee on Antitrust, Commercial and Administrative Law of the Committee of the Judiciary, [Investigation of Competition in Digital Markets: Majority Staff Report and Recommendations](#), 6 October 2020.

the EEA.⁵¹⁸ As a result of this decision, Google was required to cease its conduct and update its agreements with OEMs, permitting OEMs to unbundle the GMS suite and separately licence each of the Google Search app or Chrome browser.

While the EC's decision required Google to cease this conduct in the EEA (see box 3.2), this requirement was limited to the EEA and, as discussed in chapter 3, the ACCC understands that in Australia Google still supplies a bundle of apps under the GMS suite. This type of conduct may also extend to other services where Google, or another digital platform, attempts to bundle or tie a service on the condition that another service is acquired.

Another instance in which competition authorities or legislatures have taken measures against tying in digital markets includes the complaint filed on 7 July 2021 by of 36 US States Attorneys-General against Google. This complaint alleges that Google unlawfully maintained its monopoly in the market for Android app distribution in the United States.⁵¹⁹ The remedies sought include a court order prohibiting Google from tying Google Play to Google Play Billing, and from conditioning access to Google App Campaigns (an advertising services platform) on placement of an app in the Google Play Store.⁵²⁰ Additionally, Germany's 2021 amendment to its competition laws prohibit digital platforms designated as having paramount significance from tying unrelated products without giving users sufficient choice.⁵²¹

4.3.2. Limiting the ability for dominant search engines to pay for certain default positions

The ACCC recommends further consideration be given to whether there should be limitations on the ability for dominant search engine services, or search engine services that meet some other pre-defined criteria, to pay to be the default search engine service provider on browsers or to be pre-installed by OEMs.

Google Search holds default positions across nearly all mobile and desktop devices in Australia, effectively limiting rival search engines' ability to reach consumers through important search access points and affecting their ability to compete. To address this, further consideration should be given to restricting the ability of a dominant search engine service, or search engine that meets some other specified criteria, to pay to be the default search provider on browsers and devices. The form and implementation of this measure should be considered alongside the decision on the applicability of any choice screen, given that a free choice screen applying to all devices and browsers would impact the payments provided under existing revenue sharing agreements between Google and OEMs and/or browsers.

The CMA found that Google's extensive default positions on mobile and desktop devices in the UK limits distribution opportunities for competing search engines. According to the CMA, Google's default positions are consistently cited as a significant barrier to competitors' growth in user numbers, improvements in search results and ability to monetise operations.⁵²² The CMA recognised that a widespread rollout of restrictions on default payments could harm smaller suppliers of general search that are vertically integrated with a web browser. The CMA noted that an effective way of addressing this concern could be to

⁵¹⁸ European Commission, [Google Android decision](#), 18 July 2018

⁵¹⁹ US State Attorneys General, [Google Play Store Complaint](#), 7 July 2021, p 19.

⁵²⁰ US State Attorneys General, [Google Play Store Complaint](#), 7 July 2021, p 130.

⁵²¹ Bundesministerium der Justiz und für Verbraucherschutz, [Act against Restraints of Competition \(Competition Act – GWB\)](#), 18 January 2021, Section 19a.

⁵²² CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V6.

limit its applicability to ensure small web browsers fall outside the scope of this intervention.⁵²³

Google submits that payments for search defaults provide an important source of revenue to browsers, OEMs and developers.⁵²⁴ Revenues that OEMs and developers earn from default distribution arrangements subsidise the cost of supplying devices and browsers. Restrictions on monetisation opportunities could increase consumer prices for these products.⁵²⁵ Apple and Samsung both raised similar arguments to the CMA, submitting that an intervention restricting their ability to monetise their default positions could be very costly.⁵²⁶

Mozilla similarly notes that search integrations are the primary revenue source for many independent browsers, including Firefox. This revenue provides the majority of funding for browsers to cover operations, product development and investments into new features and technologies.⁵²⁷ Mozilla further notes that the business model for independent browsers, such as Firefox, differs from platforms that are able to fund their browsers through other business lines. Mozilla cited the example of Apple, who supports its Safari browser through revenue earned from its sales of Apple products, and commissions from the Apple App Store, in addition to its share of search revenue.⁵²⁸

Google also submits that any future measure restricting only Google from paying to acquire default positions could be discriminatory.⁵²⁹ Apple notes that its current choice of Google as the pre-set search engine on Safari is based, at least in part, on creating a superior experience for users. Apple claims that there is no basis for imposing restrictions that would impact them, and it would have the effect of punishing them without any accusation or finding they are engaging in anti-competitive conduct.⁵³⁰

Many stakeholders previously expressed support for a prohibition on Google engaging in paid arrangements that make it the pre-set search engine on a majority of browsers.⁵³¹ Bonatti et al. consider that Google Search has obtained and maintained dominance largely through its exclusive default position on devices, and that these default arrangements block entry to competitors and should be prohibited.⁵³²

The ACCC does not presently recommend that payments by search engine services to be the defaults on devices or browsers should be limited. The impacts need further consideration, and need to be carefully considered alongside any other measures that might be implemented in this market to determine the collective impact and to minimise any risk of adverse outcomes. In particular, further consideration must be given to the potential impacts of such a measure on the revenue models of OEMs and suppliers of browsers, and the consequent effect on innovation and device prices. Carve outs for smaller, independent

⁵²³ CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, pp V6-7.

⁵²⁴ In support, Google cite that payments to make it the pre-set search engine in Mozilla's Firefox browser counted for 95% and 92% (2019) and (2018) of Mozilla's reported revenue in 2018 and 2019 respectively. See: Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 17.

⁵²⁵ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 17.

⁵²⁶ CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V14.

⁵²⁷ Mozilla, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 7.

⁵²⁸ Mozilla, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 15 April 2021, p 7.

⁵²⁹ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 22.

⁵³⁰ CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V3-4.

⁵³¹ CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V3; Bonatti et al, [Digital Regulation Project: More Competitive Search Through Regulation](#), Tobin Center for Economic Policy, 20 May 2021, p 10.

⁵³² Bonatti et al, [Digital Regulation Project: More Competitive Search Through Regulation](#), Tobin Center for Economic Policy, Yale, 20 May 2021, p 10.

suppliers, or suppliers that are not dominant, not vertically integrated or meet some other prescribed criteria, may assist in ensuring that this measure does not have unintended negative effects.

4.3.3. Mandating access to data

Provision of click-and-query data to competing non-dominant search engines

The ACCC recommends further consideration be given to the requirement that dominant search engines provide click-and-query data, or other datasets, to competing search engines. In particular, such a measure must first be subject to extensive consideration of privacy impacts and would require careful design and ongoing monitoring to ensure there are no adverse impacts on consumers.

As discussed in chapter 3, access to consumers is essential for a search engine to generate click-and-query data⁵³³, which is an important input to show relevant results and be able to compete effectively. Google's dominant position in search and its arrangements with OEMs and browser suppliers ensures it has greater access to click-and-query data than its rivals, allowing it to improve the quality of its search engine service on a continuous basis. This, in turn, further entrenches its dominant position in search. A measure requiring dominant search engines to provide click-and-query data to competitors would seek to address the network effects arising from data accumulation, which has been identified as a barrier to entry and expansion for rivals.⁵³⁴

The CMA found that there are advantages to scale in search data, and that the greater scale of English-language queries seen by Google supports its ability to deliver more relevant search results compared to its competitors.⁵³⁵ In an independent report on the state of competition in digital markets provided to the UK Government, Furman et al concluded that there may be situations where providing access to some of this data to competitors on reasonable terms could be an essential and justified step to unlock competition.⁵³⁶

Google opposes any measure requiring it to provide its click-and-query data to competing search engines. Google argued that competitors do not require such access to develop their own high-quality search engine services.⁵³⁷ It submits that the primary factor in returning high-quality search results is the quality of a search engine service's technology, not the volume of click-and-query data available.⁵³⁸ Google further submits that around 15% of queries it receives daily are new queries, and it relies on the sophistication of its technology, rather than access to previous click-and-query data, to serve high quality results in response.⁵³⁹

Although Google submits its technology is the primary factor in returning high quality results, it also submits that it conducts hundreds of thousands of experiments a year to improve its

⁵³³ Click-and-query data includes data on the queries that users enter into a search engine, along with their actions taken in response to the results, and is used by search engines to improve their search algorithm and therefore the quality of their offering.

⁵³⁴ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, pp 66–73.

⁵³⁵ CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V19.

⁵³⁶ J Furman et al, [Unlocking Digital Competition: Report of the Digital Competition Expert Panel](#), March 2019. See also: CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V19.

⁵³⁷ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 23.

⁵³⁸ Google cite the 2010 Microsoft/Yahoo! search deal as an example, arguing that despite leading to Microsoft Bing doubling the number of search queries it received overnight, the deal resulted in worse outcomes for Yahoo! than when Yahoo! operated its own search technology. See: Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, pp 23-24.

⁵³⁹ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 24.

search engine services, and any obligation to share its click-and-query data could undermine these investments and innovations.⁵⁴⁰ To counteract this, Bonatti et al. suggests that Google licence its click-and-query data at fair, reasonable and non-discriminatory (FRAND) rates. The FRAND rate would be chosen so that the necessary data are accessible to competitors, while not harmful to Google's investments.⁵⁴¹

Other stakeholders suggest the provision of click-and-query data could be an effective tool for improving competitors' services and incentivise investment in innovation and analysis,⁵⁴² and would heighten, rather than dampen, competition and innovation.⁵⁴³ Some stakeholders also noted to the CMA that this measure would be relatively easy to develop as the data is easily identifiable, and would not be prohibitively expensive.⁵⁴⁴

Google also submits that this measure raises potential privacy concerns and could expose users to serious privacy breaches, given that search queries can contain personal and highly sensitive data. Google says that it cannot guarantee the security requirements of third parties who might receive its data, nor that recipients would only use the data for the purpose of improving search tools. Further, it argues it has no way to identify and anonymise all personal data in its large scale datasets, and anonymising data may be insufficient to prevent the re-identification of data subjects.⁵⁴⁵

Some stakeholders suggested to the CMA that privacy concerns could be mitigated by limiting the data provided to query, URL click, and click back data. In addition, the data provided would not include personal and identifiable data such as addresses or telephone numbers.⁵⁴⁶ The CMA similarly concludes that any measure should not include data that links search queries over time, including search history data. The CMA concludes that users' query, click, click back and location data could be provided on a sufficiently generalised basis, without requiring disclosure of personal data.⁵⁴⁷

The ACCC has not conducted a full review of the types of click-and-query data that competitors require in order to compete with Google, nor examined the full extent and implications of the privacy considerations. However, the ACCC considers that benefits to competition which may result from the sharing of click-and-query data between search engines must not come at the expense of user's privacy. Further analysis and consultation is required with Google, other search engines, and privacy experts to assess the merits and risks associated with this measure, and how it could be implemented with minimal detriment to privacy.

Access to other datasets

Google benefits from extreme economies of scope in its supply of search engine services, including from the data it obtains from its various businesses including Google Search, its ownership of Android and its presence across the mobile device ecosystem.⁵⁴⁸

⁵⁴⁰ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 25.

⁵⁴¹ Bonatti et al, [Digital Regulation Project: More Competitive Search Through Regulation](#), Tobin Center for Economic Policy, Yale, 20 May 2021, p 26.

⁵⁴² CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V21.

⁵⁴³ CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V23.

⁵⁴⁴ CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V21.

⁵⁴⁵ Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, p 26.

⁵⁴⁶ CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V22.

⁵⁴⁷ CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V25.

⁵⁴⁸ ACCC, [Digital Platforms Inquiry Final Report](#), 26 July 2019, p 73.

Consequently, no other search provider is able to access the same scope of data sets as Google, lending Google a considerable advantage.

To address this competitive advantage, further consideration of mandating the provision of data that Google retrieves from its non-search businesses may be warranted. In addition to the provision of click-and-query data discussed above, this could include providing search rivals access to Google's location data, which can be very useful for returning relevant search results for certain types of search queries.⁵⁴⁹ The ACCC considers that data interoperability or mandated data access requirements could be explored further in future reports.

The ACCC does not currently recommend the introduction of obligations in relation to information sharing between dominant search engine's internal business units in relation to the supply of general search engine services. However, the ACCC notes that this measure could be considered further as part of a regulatory framework to deal with issues relating to digital platform's market power; for example, where a designated or specified digital platform acquires an existing or potential competitor. Box 4.3 below provides an example of a data separation arrangement in place in the EC to address concerns regarding Google's potential use of data to advantage its search advertising services.

Box 4.3: Google's Fitbit data separation commitments to the EC

In August 2020, the EC opened an in-depth investigation into the proposed acquisition of Fitbit by Google. The EC identified a number of concerns, including that by acquiring Fitbit, Google would also acquire the data held by Fitbit about its users' health and fitness. Google could then use this data for the personalisation of ads, making it more difficult for rivals to match Google's services in the markets for online search advertising, online display advertising, and the entire ad tech ecosystem. The transaction would therefore raise barriers to entry and expansion for Google's competitors for these services, to the detriment of advertisers who would ultimately face higher prices and have less choice.⁵⁵⁰

In December 2020, the EC approved Google's acquisition of Fitbit under EU Merger Regulations. The approval was conditional on Google's full compliance with a package of commitments it offered to the EC. These included a commitment by Google not to use the health and wellness data collected from the Fitbit devices of users in the EEA for the purpose of Google Ads, including search advertising, display advertising and advertising intermediation products. This covers both data collected via Fitbit device sensors (such as GPS location data), as well as data manually entered by the user. Google will maintain a technical separation of the relevant Fitbit data, which will be stored in a 'data silo' separate from any other Google data that is used for advertising.⁵⁵¹

Similarly to the provision of click-and-query data to competing non-dominant search engines, the ACCC considers that the competition benefits which may arise from the sharing of any data between search engines should not come at the expense of user's privacy. To the extent that measures of data interoperability or access are further considered under a broader regulatory framework, the ACCC notes that it must first be subject to extensive consideration of privacy impacts and would require careful design and ongoing monitoring to ensure there are no adverse implications for consumers.

⁵⁴⁹ See box 3.5 above: by virtue of its control of the Android operating system and Google Maps, Google has unique advantages in the location data that it has access to relative to other search engines. See: D Sullivan, [How location helps provide more relevant search results](#), Google, The Keyword, December 2020, accessed 13 September 2021.

⁵⁵⁰ EC, [Mergers: Commission opens in-depth investigation into the proposed acquisition of Fitbit by Google](#), 4 August 2020, accessed 13 September 2021.

⁵⁵¹ EC, [Mergers: Commission clears acquisition of Fitbit by Google, subject to conditions](#), 17 December 2020, accessed 13 September 2021.

Provision of syndicated search results to downstream search providers on FRAND terms

The ACCC recommends further consideration be given to requiring search engine service providers who syndicate search results to downstream search engine services to do so on fair, reasonable and non-discriminatory (FRAND) terms.

Competition between downstream and upstream suppliers of search engine services may be limited by contractual restrictions on downstream suppliers' ability to determine aspects of their competitive offering, as discussed in chapter 3. A potential measure requiring search engines who syndicate their results to others do so on FRAND terms could allow search engines to compete more effectively by differentiating their product better and tailoring search results to their consumer base. For example, Ecosia could be permitted to re-rank search results to prioritise eco-friendly websites, reflecting its focus on environmental initiatives. More generally, this may result in benefits for consumers and/or advertisers.⁵⁵²

Search engines reliant on syndicated search results expressed strong support for this measure, noting it would support the development of search engines that offer compelling alternatives to Google and Bing.⁵⁵³ Google submits that to the extent it syndicates search results, these are already provided on FRAND terms.⁵⁵⁴

Some stakeholders expressed concern over the feasibility of such a measure, including whether FRAND terms could realistically be developed, agreed upon and monitored. Concerns were also raised that it may constrain the ability or willingness of competing search providers to explore new business models, and that it may dampen incentives for search engines to develop their own algorithms and provide genuine alternatives to Google and Bing.⁵⁵⁵

In its analysis, the CMA recognised concerns that obligations to licence intellectual property can give rise to material risks, and recommended other competitive measures targeting upstream competition be considered first. The ACCC acknowledges concerns raised by the CMA that obligations to licence intellectual property can give rise to material risks⁵⁵⁶, and does not recommend a measure requiring a search engine to syndicate its results. Rather, the ACCC considers that where search engines do choose to syndicate, these arrangements should be subject to FRAND terms.

⁵⁵² CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V27.

⁵⁵³ CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V28.

⁵⁵⁴ Google currently provides search syndication solutions under the label Programmable Search Engine. Websites that syndicate Google's search results embed a Google search box on their web pages and when a user enters a search query, the query gets redirected to Google's servers. The website does not generate search results or act as a search engine service under their arrangements, but merely mediates a connection between a user and Google. See Google, [Submission to the ACCC Digital Platform Services Inquiry Third Interim Report](#), 7 May 2021, pp 27-28.

⁵⁵⁵ CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V28.

⁵⁵⁶ CMA, [Online platforms and digital advertising market study, Appendix V: Assessment of Pro-competition Interventions in General Search](#), 1 July 2020, p V29.

Appendix A: Ministerial direction



Competition and Consumer (Price Inquiry— Digital Platforms) Direction 2020

I, Josh Frydenberg, Treasurer, give the following direction to the Australian Competition and Consumer Commission.

Dated: 10 February 2020

Josh Frydenberg
Treasurer

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Part 1—Preliminary

1 Name

This instrument is the *Competition and Consumer (Price Inquiry—Digital Platforms) Direction 2020*.

2 Commencement

- (1) Each provision of this instrument specified in column 1 of the table commences, or is taken to have commenced, in accordance with column 2 of the table. Any other statement in column 2 has effect according to its terms.

Commencement information		
Column 1	Column 2	Column 3
Provisions	Commencement	Date/Details
1. The whole of this instrument	The day after this instrument is registered.	

Note: This table relates only to the provisions of this instrument as originally made. It will not be amended to deal with any later amendments of this instrument.

- (2) Any information in column 3 of the table is not part of this instrument. Information may be inserted in this column, or information in it may be edited, in any published version of this instrument.

3 Authority

This instrument is made under the *Competition and Consumer Act 2010*.

4 Definitions

Note: Expressions have the same meaning in this instrument as in the *Competition and Consumer Act 2010* as in force from time to time—see paragraph 13(1)(b) of the *Legislation Act 2003*.

In this instrument:

Australian law means a law of the Commonwealth, a State, or a Territory (whether written or unwritten).

data broker means a supplier who collects personal or other information on persons, and sells this information to, or shares this information with, others.

digital content aggregation platform means an online system that collects information from disparate sources and presents it to consumers as a collated, curated product in which users may be able to customise or filter their aggregation, or to use a search function.

digital platform services means any of the following:

- (a) internet search engine services (including general search services and specialised search services);

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- (b) social media services;
- (c) online private messaging services (including text messaging; audio messaging and visual messaging);
- (d) digital content aggregation platform services;
- (e) media referral services provided in the course of providing one or more of the services mentioned in paragraphs (a) to (d);
- (f) electronic marketplace services.

electronic marketplace services means a service (including a website, internet portal, gateway, store or marketplace) that:

- (a) facilitates the supply of goods or services between suppliers and consumers; and
- (b) is delivered by means of electronic communication; and
- (c) is *not* solely a carriage service (within the meaning of the *Telecommunications Act 1997*) or solely consisting of one or more of the following:
 - (i) providing access to a payment system;
 - (ii) processing payments.

exempt supply has the meaning given by subsection 95A(1) of the Act.

goods has the meaning given by subsection 95A(1) of the Act.

inquiry has the meaning given by subsection 95A(1) of the Act.

services has the meaning given by subsection 95A(1) of the Act.

State or Territory authority has the meaning given by subsection 95A(1) of the Act.

supply has the meaning given by subsection 95A(1) of the Act.

the Act means the *Competition and Consumer Act 2010*.

Part 2—Price inquiry into supply of digital platform services

5 Commission to hold an inquiry

- (1) Under subsection 95H(1) of the Act, the Commission is required to hold an inquiry into the markets for the supply of digital platform services. The inquiry is *not* to extend to any of the following:
 - (a) the supply of a good or service by a State or Territory authority;
 - (b) the supply of a good or service that is an exempt supply;
 - (c) reviewing the operation of any Australian law (other than the Act) relating to communications, broadcasting, media, privacy or taxation;
 - (d) reviewing the operation of any program funded by the Commonwealth, or any policy of the Commonwealth (other than policies relating to competition and consumer protection).
- (2) For the purposes of subsection 95J(1), the inquiry is to be held in relation to goods and services of the following descriptions:
 - (a) digital platform services;
 - (b) digital advertising services supplied by digital platform service providers;
 - (c) data collection, storage, supply, processing and analysis services supplied by:
 - (i) digital platform service providers; or
 - (ii) data brokers.
- (3) Under subsection 95J(2), the inquiry is not to be held in relation to the supply of goods and services by a particular person or persons.

6 Directions on matters to be taken into consideration in the inquiry

Under subsection 95J(6) of the Act, the Commission is directed to take into consideration all of the following matters in holding the inquiry:

- (a) the intensity of competition in the markets for the supply of digital platform services, with particular regard to:
 - (i) the concentration of power in the markets amongst and between suppliers; and
 - (ii) the behaviour of suppliers in the markets, including:
 - (A) the nature, characteristics and quality of the services they offer; and
 - (B) the pricing and other terms and conditions they offer to consumers and businesses; and

Example: Terms and conditions relating to data collection and use.
- (iii) changes in the range of services offered by suppliers, and any associated impacts those changes had or may have on other markets; and
- (iv) mergers and acquisitions in the markets for digital platform services; and

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- (v) matters that may act as a barrier to market entry, expansion or exit, and the extent to which those matters act as such a barrier;
- (b) practices of individual suppliers in the markets for digital platform services which may result in consumer harm, including supplier policies relating to privacy and data collection, management and disclosure;
- (c) market trends, including innovation and technology change, that may affect the degree of market power, and its durability, held by suppliers of digital platform services;
- (d) changes over time in the nature of, characteristics and quality of digital platform services arising from innovation and technological change;
- (e) developments in markets for the supply of digital platform services outside Australia.

7 Directions as to holding of the inquiry

- (1) Under subsection 95J(6) of the Act, the Commission is directed to do the following in holding the inquiry:
 - (a) regularly monitor the markets for the supply of digital platform services for changes in the markets, particularly focussing on the matters referred to in section 6 of this instrument; and
 - (b) give to the Treasurer an interim report on the inquiry by 30 September 2020, and then further interim reports every 6 months thereafter, on:
 - (i) any changes observed by the Commission in the markets since the last report; and
 - (ii) any other matter, within the scope of the inquiry, the Commission believes appropriate.
- (2) Under subsection 95P(3) of the Act, the Commission is directed not to make available for public inspection, copies of any interim report until the Treasurer, in writing, authorises the Commission to do so.

8 Period for completing the inquiry

For the purposes of subsection 95K(1) of the Act, the inquiry is to be completed, and a report on the matter of inquiry given to the Treasurer, by no later than 31 March 2025.

Appendix B: Summary of overseas legislative developments specific to digital platforms

United Kingdom's proposed Strategic Market Status regime

In April 2021, a specialist Digital Markets Unit (DMU) was established within the Competition and Markets Authority (CMA).⁵⁵⁷ The DMU's purpose is to oversee a regulatory framework applying to digital firms that are designated as having 'Strategic Market Status' (SMS).⁵⁵⁸ Legislation is required to fully empower the DMU and establish the SMS regime; the earliest this is likely to occur is in the UK's 2022/23 parliamentary year.⁵⁵⁹

Once enacted, the SMS regime is expected to have the following 3 pillars:

1. An enforceable code of conduct outlining how a firm with SMS is expected to behave. This would relate specifically to the activity from which the firm gains its market power, so each firm will likely have a code unique to them. The objectives of each code will be to foster fair trading, open choices, and trust and transparency.
2. The ability for the DMU to impose pro-competitive interventions on SMS firms, such as choice screens, personal data mobility, data interoperability requirements and restrictions on default arrangements. The purpose of these interventions is to address the factors that are the source of a firm's market power.
3. A distinct merger control regime requiring SMS firms to report all acquisitions to the CMA within a short period following the transaction, and prohibit transactions that meet certain thresholds in the absence of CMA clearance.

It is expected that the DMU will be able to impose fines of up to a maximum of 10% of a firm's worldwide turnover for breaches of a code of conduct or pro-competitive intervention orders.

European Union's proposed Digital Markets Act

In December 2020, the EC proposed the Digital Markets Act (DMA), which is a set of 'ex-ante' rules applicable to digital platforms that act as 'gatekeepers' between businesses and consumers.⁵⁶⁰ The DMA aims to prevent gatekeepers from imposing unfair conditions on businesses and consumers, and ensure the openness of important digital services.

Under the proposed DMA, the EC will designate which platforms are 'gatekeepers' based on their size, their role connecting businesses with consumers and the durability of their market position. Once a platform has been designated as a gatekeeper it will have an extra responsibility to comply with specific obligations that seek to address issues such as self-preferencing, platform interoperability and the provision of commercial data.⁵⁶¹

Additionally, under the proposed DMA, designated gatekeeper platforms will need to inform the EC of any merger or acquisition they intend to complete, regardless of whether they are

⁵⁵⁷ CMA, [Digital Markets Unit](#), 7 April 2021, accessed 13 September 2021.

⁵⁵⁸ For the DMA to designate a company with SMS status the company must have substantial, entrenched market power in at least one digital activity which provides it with a strategic position in that market.

⁵⁵⁹ J Scott, [Keynote speech to the Law Society](#), 25 June 2021.

⁵⁶⁰ European Commission, [Digital Markets Act: Ensuring fair and open digital markets](#), 12 December 2020, accessed 13 September 2021.

⁵⁶¹ European Commission, [The Digital Markets Act: Ensuring fair and open digital markets](#), accessed 13 September 2021.

required to notify the national competition authority in the relevant country under existing merger notification thresholds.⁵⁶²

In cases of non-compliance, the EC will be able to impose fines of up to 10% of global turnover, and may impose structural remedies if there are multiple breaches.

In order for the DMA to progress, the European Parliament and Member States need to discuss the EC's proposal as per the ordinary legislative procedure.⁵⁶³ Once adopted, the DMA will be applicable across all EU states.

United States House Antitrust Subcommittee's proposed legislation

In June 2021, a legislative package of 6 Bills intended to counter the anticompetitive practices of large digital platforms were introduced by members of the United States House Antitrust Subcommittee and approved by the House Judiciary Committee.⁵⁶⁴

If passed, 4 of the Bills will apply only to 'covered digital platforms', which will be designated by the Federal Trade Commission (FTC) or the Department of Justice (DOJ). To be designated, a platform must meet certain thresholds, including having at least 500,000 US-based monthly active users, at least 100,000 US-based business users and a market capitalisation or net annual sales exceeding US\$600 billion.⁵⁶⁵ Provisions in the Bills applicable only to 'covered digital platforms' include:

- prohibiting dominant platforms from engaging in discriminatory conduct, including a prohibition on self-preferencing and discriminating against similarly situated business users.⁵⁶⁶
- prohibiting dominant platforms from owning or controlling a line of business that gives rise to a conflict of interest, including lines of business that would allow the dominant platform operator to self-preference, or lines of business that use the dominant platform for the sale of products or services.⁵⁶⁷
- prohibiting dominant platforms from acquiring companies that compete with, or may potentially compete with the dominant platform, as well as prohibiting acquisitions that expand or entrench the market power of the dominant platform.⁵⁶⁸
- requiring dominant platforms to maintain transparent, third-party accessible interfaces such that users' data is portable and interoperable with other services.⁵⁶⁹

This legislative package also includes a Bill updating filing fees for companies seeking approval to merge, which would increase the DOJ and FTC's resourcing.⁵⁷⁰

⁵⁶² European Commission, [Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector \(Digital Markets Act\)](#), 15 December 2020, p 21.

⁵⁶³ European Commission, [The Digital Markets Act: Ensuring fair and open digital markets](#), accessed 13 September 2021.

⁵⁶⁴ Congressman David Cicilline, [House Lawmakers Release Anti-Monopoly Agenda for "A Stronger Online Economy: Opportunity, Innovation, Choice"](#), 11 June 2021, accessed 13 September 2021.

⁵⁶⁵ United States, Congress, House Judiciary Committee, [American Choice and Innovation Online Act](#), 11 June 2021, pp 10-11; United States, Congress, House Judiciary Committee, [Ending Platform Monopolies Act](#), 11 June 2021, pp 6-7; United States, Congress, House Judiciary Committee, [Platform Competition and Opportunity Act](#), 11 June 2021, pp 10-11; United States, Congress, House Judiciary Committee, [Augmenting Compatibility and Competition by Enabling Service Switching Act](#), 11 June 2021, pp 10-11.

⁵⁶⁶ United States, Congress, House Judiciary Committee, [American Choice and Innovation Online Act](#), 11 June 2021, pp 1-2.

⁵⁶⁷ United States, Congress, House Judiciary Committee, [Ending Platform Monopolies Act](#), 11 June 2021, pp 1-3.

⁵⁶⁸ United States, Congress, House Judiciary Committee, [Platform Competition and Opportunity Act](#), 11 June 2021, pp 1-3.

⁵⁶⁹ United States, Congress, House Judiciary Committee, [Augmenting Compatibility and Competition by Enabling Service Switching Act](#), 11 June 2021, pp 1-4.

⁵⁷⁰ United States, Congress, House Judiciary Committee, [Merger Filing Fee Modernisation Act](#), 11 June 2021, pp 1-4.

Germany's updated competition law – the GWB Digitalization Act

In January 2021, the tenth Amendment for the German Competition Act (the GWB Digitalization Act) entered into force.⁵⁷¹ The amended Act prohibits certain kinds of conduct by companies which, due to their strategic position and resources, the Bundeskartellamt (German competition authority) designates as being of 'paramount significance for competition across markets'. The conduct which designated companies are prohibited from engaging in includes:

- self-preferencing their own products
- exclusively pre-installing their own services on devices
- impeding interoperability or data portability
- tying unrelated products without giving users sufficient choice
- raising barriers to entry by processing data relevant for competition.⁵⁷²

⁵⁷¹ Bundeskartellamt, [Amendment of the German Act against Restraints of Competition](#), 19 January 2021, accessed 13 September 2021.

⁵⁷² Bundesministerium der Justiz und für Verbraucherschutz, [Act against Restraints of Competition \(Competition Act – GWB\)](#), 18 January 2021, Section 19a.