

GOOGLE'S ECONOMIC IMPACT IN AUSTRALIA

DECEMBER 2020





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GOOGLE'S ECONOMIC IMPACT IN AUSTRALIA



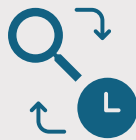
BUSINESS BENEFITS



Google supports **AU\$39 BILLION** in benefits to businesses in Australia¹



Google directly supports an estimated **116,200 JOBS** in businesses that use Google products and generate a return on investment; **TWO-THIRDS** are created in small and medium-sized businesses



By allowing for almost instantaneous access to information online, **GOOGLE SEARCH** helps businesses **SAVE 46 HOURS A YEAR PER EMPLOYEE**



Each transport business in Australia **SAVES ABOUT 272 HOURS PER YEAR** by using **GOOGLE MAPS** to optimise their trips

CONSUMER BENEFITS



Google supports **AU\$14 BILLION** in annual benefits to consumers in Australia²



The average Australian **GOOGLE SEARCH USER SAVES 4.9 DAYS A YEAR** looking for answers, as compared to traditional offline methods



Thanks to its trip optimisation features, the average Australian **GOOGLE MAPS USER SAVES ABOUT 5.6 HOURS PER YEAR** on his or her personal trips

1. Business benefits refer to the estimated economic impact from the following products: Google Search; Google Ads; AdSense; Ad Grants; Google Play; Google Maps.

2. Consumer benefits refer to the estimated economic impact from the following products: Google Search; Google Maps; Google Drive; Docs, Sheets and Photos; Google Play. Note: The estimates are of Google's annual economic impact based on the latest available data (i.e., in 2019, or where available, more recent data spanning a 12-month period between 2019 and 2020). Estimates are based on AlphaBeta analysis using a range of original and third-party sources. See report's Appendix for methodology.

EXECUTIVE SUMMARY

Digital technologies have become central to how Australians conduct their daily lives and work. As a rapidly growing number of Australian businesses and consumers buy, sell and interact with each other online, tools like Google's search, advertising, maps and productivity platforms generate significant value for businesses and consumers throughout the nation.

For businesses, such value is experienced in the form of revenue gains, access to new customers and markets, as well as cost and time savings. For consumers, these come in the form of increased convenience, greater productivity in their daily lives, as well as improved access to entertainment and information. Taking into consideration these benefits, **this study finds that the annual economic value presented by Google's applications and platforms are worth AU\$39 billion for Australian businesses, and AU\$14 billion for Australian consumers.**¹

The key findings of this study are as follows:

- Google helps Australian businesses increase revenues.** Applications such as Google Search, Google Ads and AdSense help Australian businesses access new customers and create new revenue streams through online advertising. These business benefits are estimated at AU\$31.7 billion per year for Google Search and Ads, and AU\$63.9 million per year for AdSense. Meanwhile, Google Play
- Google helps Australian businesses save time.** Businesses benefit from improved productivity through the use of Google Search and Google Maps. Google Search is estimated to help businesses save 46 hours (or 1.9 days) per employee per year by improving access to information needed for work, while each transport business saves about 272 hours of travel time each year from using Google Maps to optimise their work journeys.
- 97 percent of Google's business benefits go to non-technology sectors.** The professional and financial services sectors account for the largest share of the total business benefits at 37 percent (AU\$14.4 billion of the total AU\$38.8 billion), followed by the construction and retail sectors. Other non-technology sectors such as hospitality and restaurants as well as healthcare and social assistance also gain significant benefits from Google's applications and services.
- 60 percent of Google's business benefits go to small and medium-sized enterprises.** Search advertising through Google Ads is a cost-effective tool for micro, small and medium-sized enterprises (MSMEs) that lack the scale and resources to run

1. The Google applications and services included in the analysis of business benefits include Google Search and Ads, AdSense, Google Maps, Ad Grants, and Google Play. The Google applications and services included in the analysis of consumer benefits include Google Search, Google Maps, Google Play, Drive, Photos, Docs, and Sheets. The estimates are of Google's annual economic impact based on the latest available data (i.e., in 2019, or where available, more recent data spanning a 12-month period between 2019 and 2020).



large marketing campaigns on traditional media. Furthermore, Google Search enables MSMEs and self-employed individuals to find information on market trends, allowing them to identify new growth opportunities at no cost.

- Beyond the 1,800 people employed by Google in Australia, a further 116,200 jobs are directly supported, while 162,700 jobs are indirectly supported in the economy through the use of Google's products.**² These jobs in the wider economy are created through the use of Google products that enable businesses to expand their customer base and increase revenue, thereby leading to increased hiring demand. In addition, a further 162,700 jobs could be supported indirectly in the supply chain. These jobs could be created as a result of the expanded demand for supplies and raw materials from businesses that underwent expansion due to the use of Google's products.³
- Australian consumers are estimated to derive total benefits worth AU\$14 billion from Google's services each year.** As Google's services are typically provided free of charge – meaning

there are no price indicators that reflect the values of the benefits derived by consumers from these services, the economic “consumer surplus” principle, referring to the economic value of benefits experienced, was adopted to size the value experienced by consumers from such services. An estimated AU\$6.1 billion worth of consumer surplus is derived from Google services that increase productivity and convenience - including Google Maps, Drive, Photos, Docs, and Sheets.





- Google helps Australian consumers save time - in particular, Google Search saves the average Australian consumer almost 5 days a year on seeking information.** By providing almost instantaneous access to information online, consumers are estimated to save 4.9 days per year by using Google Search to find information versus offline methods, and 5.6 hours travelling on the roads per year by optimising their trips using Google Maps.

Exhibit E1 provides an overview of Google's annual economic benefits for businesses and consumers in Australia.

2. AlphaBeta (2019), Google economic impact: Australia 2019. Available at: https://alphabeta.com/wp-content/uploads/2019/09/ab006_google_business_web-1.pdf
 3. Based on 2020 research by AlphaBeta (unpublished).

EXHIBIT E 1:

OVERVIEW OF THE BENEFITS SUPPORTED BY GOOGLE IN AUSTRALIA

TYPE OF BENEFIT	PRODUCT/S	BUSINESS BENEFITS	CONSUMER BENEFITS
Ease of access to information 	Google Search	<ul style="list-style-type: none"> By allowing for almost instantaneous access to information online, Google Search helps businesses save 46 hours a year per worker. These time savings are estimated to worth AU\$4.6 billion in wage terms. 	<ul style="list-style-type: none"> By providing almost instantaneous access to information, the average Google Search user in Australia saves about 4.9 days on looking for answers online each year. The annual consumer surplus derived from Google Search in Australia is estimated at AU\$5.1 billion.
Entertainment and enrichment 	Google Play & Android	<ul style="list-style-type: none"> Android enables app developers to save up to 25% of development time and target more than 1 billion users worldwide¹ App developers in Australia earn more than AU\$639 million in revenue from both domestic and global markets through the Google Play platform annually 	<ul style="list-style-type: none"> Consumers can choose from over 2.8 million apps available on the Android ecosystem¹ By gaining access to a range of digital entertainment options through Google Play, the consumer surplus benefits of this platform to Australian consumers are estimated at AU\$2.8 billion annually
Increased productivity and convenience 	Google Maps, Drive, Photos, Docs & Sheets	<ul style="list-style-type: none"> Google Maps helps each transport business save about 272 hours per year, which is equivalent to AU\$1.7 billion worth of total annual wages 	<ul style="list-style-type: none"> By using Google Maps to optimise their trip journeys, the average user of this service in Australia saves about 5.6 hours per year on the roads The total consumer benefits derived from productivity-enhancing tools of Google Maps, Drive, Photos, Docs, and Sheets is estimated to be worth AU\$6.1 billion in Australia each year
Advertising benefits 	Google Ads & AdSense	<ul style="list-style-type: none"> Google Search and Ads bring about AU\$31.7 billion in net advertising benefits annually to Australian businesses² Advertisers in Australia gain more than AU\$63 million in net advertising benefits from displaying advertisements on websites using AdSense² Web publishers in Australia earn more than AU\$196 million annually through AdSense 	
TOTAL BENEFITS:		AU\$39 BILLION	AU\$14 BILLION

1. AlphaBeta (2018), "AlphaBeta research brief: The estimated economic impact from Android across five Asian markets".

Available at: <https://www.alphabeta.com/wp-content/uploads/2017/08/180820-Android-Economic-Impact.pdf>

2. Net advertising benefits refer to the additional revenue gained from advertising, less the investment made on the advertising tool.

Note: Figures are estimated based on the latest available annual data, (i.e., in 2019, or where available, more recent data spanning a 12-month period between 2019 and 2020).

Totals may not sum as not all benefits have been shown in this overview.

SOURCE: AlphaBeta analysis



BUSINESS BENEFITS

Google creates significant economic benefits for businesses in Australia. Such benefits come in the form of increased revenue and productivity. The total economic benefits presented by Google Search, Google Ads, AdSense, Google Maps, Google Play, and Ad Grants are estimated at AU\$39 billion a year.⁴ These comprise AU\$32.7 billion in revenue gains and advertising grants, and AU\$6.3 billion in time savings (measured in equivalent wage terms). Google helps Australian businesses increase revenue through advertisements on platforms such as Google Search and Ads and AdSense, and save time through the use of Google Maps and Google Search at work. In addition, Google Play also brings Australian app developers an estimated AU\$639 million in revenue annually from both domestic and international markets. A significant share of Google's business benefits, at 97 percent, go to non-technology sectors such as professional services, construction, and retail, while about 60 percent of the total benefits are realised by small and medium enterprises. Beyond the direct employment of 1,800 people, Google also directly supports 116,200 jobs, and indirectly another 162,700 jobs in Australia through enabling business expansion. The total business benefits and job impact brought about by Google are distributed across all states and territories.

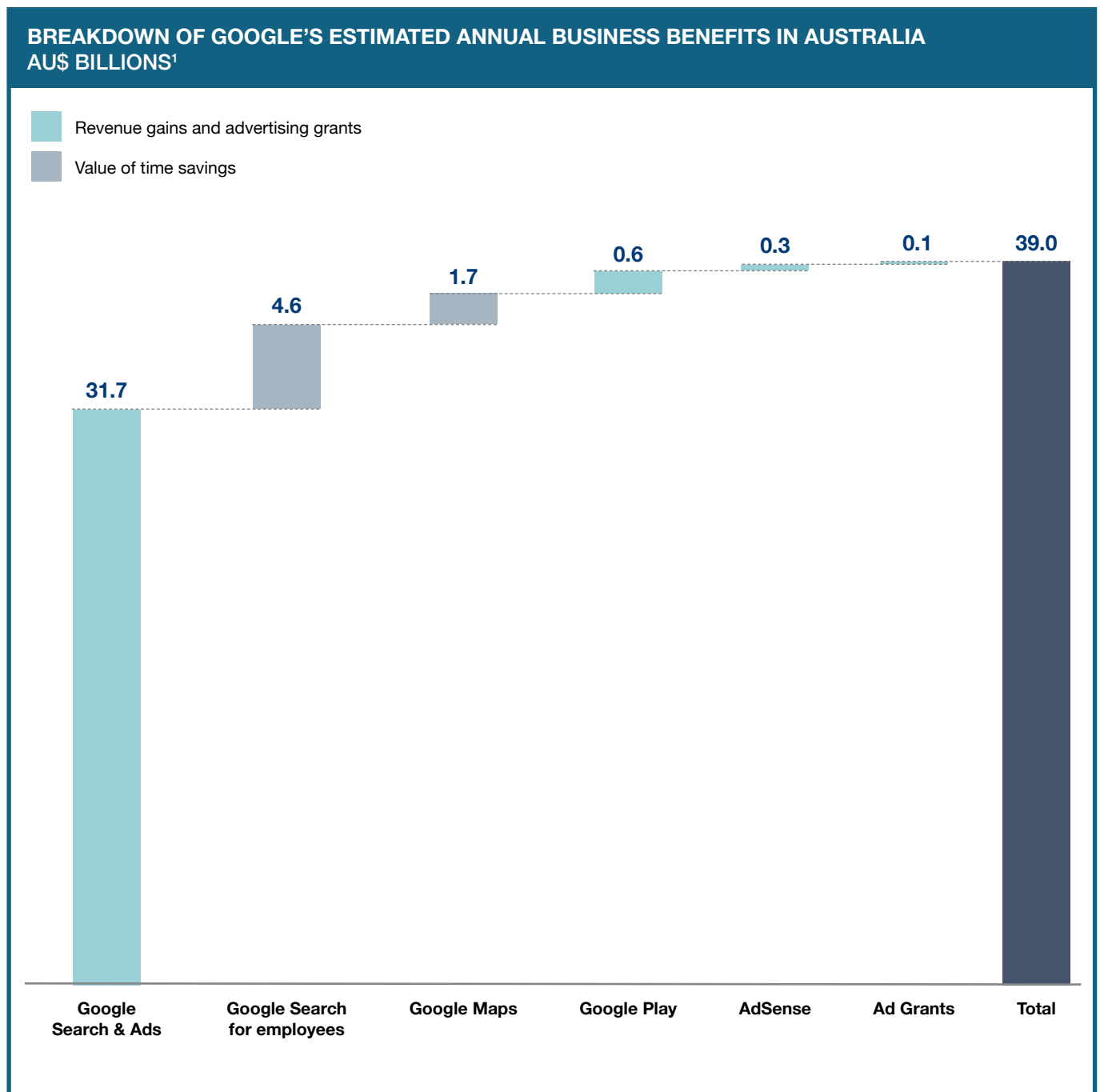
4. These estimates are of Google's annual economic impact based on the latest available data (i.e., in 2019, or where available, more recent data spanning a 12-month period between 2019 and 2020). See Appendix for detailed methodology.

Google’s services present benefits to Australian businesses in the form of increased revenue - through increased customer outreach and access to new markets,

as well as improved productivity - through time saved. Exhibit 1 reflects the breakdown of these benefits across the different services.

EXHIBIT 1:

GOOGLE IS ESTIMATED TO SUPPORT A TOTAL AU\$39 BILLION WORTH OF ECONOMIC BENEFITS TO AUSTRALIAN BUSINESSES ANNUALLY



1. Based on average estimates (i.e., average of lower and upper bound estimates, where computed). Figures may not sum due to rounding. Notes: Figures are estimated based on the latest available annual data, (i.e., in 2019, or where available, more recent data spanning a 12-month period between 2019 and 2020). SOURCE: AlphaBeta analysis

1.1 GOOGLE HELPS AUSTRALIAN BUSINESSES INCREASE REVENUES

Google helps Australian businesses boost revenue by facilitating access to new customers, markets and revenue streams. Exhibit 2 summarises the estimated benefits experienced by Australian businesses from Google Search and Google Ads, AdSense, Ad Grants and Google Play.⁵

Google applications broaden the reach of Australian businesses to new customers and markets. Online advertising platforms such as **Google Ads** and **AdSense** allow businesses to conduct targeted advertising,

bringing their products and services to the right audiences and growing their customer base. **Google Ads** is estimated to generate AU\$31.7 billion annually in the form of net returns to Australian businesses from investing in placing advertisements on Google Search results of relevant keywords.⁶ This online search advertising tool has proved to be particularly helpful during the COVID-19 pandemic, when businesses have been forced to shift their activities online. Boxes 1 and 2 showcase examples of how Google Ads have allowed small local businesses to flourish despite the pandemic.

EXHIBIT 2:

GOOGLE BRINGS ABOUT AN ESTIMATED AU\$32.7 BILLION WORTH OF ANNUAL BENEFITS IN THE FORM OF INCREASED REVENUE

PRODUCT	DESCRIPTION OF BENEFITS	ESTIMATED ANNUAL BUSINESS BENEFITS
Google Search and Ads	Net advertising benefits for advertisers ¹	AU\$31.7 billion
AdSense	Revenue generated by Australian website publishers through AdSense	AU\$196.9 million
	Net advertising benefits for advertisers ¹	AU\$63.9 million
Ad Grants	Amount of free advertising provided by Google to non-profits	AU\$75 million
Google Play	Revenue generated by Australian app developers from Google Play in both domestic and international markets	AU\$639 million
TOTAL ANNUAL BUSINESS BENEFITS IN AUSTRALIA :		AU\$32.7 BILLION

1. Net advertising benefits refer to the additional revenue gained from advertising, less the investment made on the advertising tool.

Note: Figures are estimated based on the latest available annual data, (i.e., in 2019, or where available, more recent data spanning a 12-month period between 2019 and 2020).

Figures may not sum due to rounding.

SOURCE: AlphaBeta analysis

5. The benefits to Ad Grants are in the form of free advertising provided to non-profits (not returns on advertising). They have been included in this section as this amount of free advertising will also lead to increased donor interest and funding for non-profits.

6. This refers to the increase in revenues and sales that can be directly attributed to advertising minus the related advertising expenditure.

BOX 1. BLISS GIFTS & HOMEWARES



LOCATION: NEW SOUTH WALES
NUMBER OF EMPLOYEES: 12

Set against the backdrop of 2020's bushfires and a global pandemic, the story of Bliss Gifts & Homewares is one of resilience and an astonishing turnaround from devastation to growth. Located in the regional coastal town of Ulladulla, Bliss Gifts & Homewares is an entirely female owned and operated retail business specialising in unique and high-quality homewares. At the end of 2019, founder and owner, Melissa, was geared up for the summer peak season with half a million dollars worth of stock ready to be sold. As quickly as the peak season started, it was halted with the presence of devastating bushfires hitting the region bringing tourism to a standstill. Like so many small businesses affected by the events of 2020, Melissa was left wondering "how is my business going to survive?". As a traditional brick-and-mortar shop relying mostly on foot traffic, she knew she had to adapt quickly. She always had a hunch that online was the future - now it was necessary for survival.

At the same time, she received an email from her local business chamber inviting small business owners to a Grow with Google virtual training for bushfire impacted regions. With little prior experience in online marketing, Melissa immediately signed up. The training helped her understand the importance of optimising her online presence, and she learnt digital skills like how to activate her free Google Business Profile, Search Engine Optimisation (SEO) and paid Google Search Ads. Leveraging these new skills, Bliss's online presence started to grow.

Against all odds, Melissa has been able to flourish during this period of uncertainty. In the space of a few months she was able to improve the performance of her digital ads and drive a 30:1 ROI on her investment - resulting in a 50% increase in her business' revenue in the wake of the bushfires. Going online helped expand Bliss to reach customers Australia-wide. Melissa was able to hire new staff and move into a bigger warehouse (that they're already outgrowing!). Today, 90% of her sales come from digital channels and in Melissa's words, "online is our home now".

BOX 2. ELRACO DISTRIBUTORS



LOCATION: SOUTH AUSTRALIA
NUMBER OF EMPLOYEES: 2

Started by brothers Errol and Ray Weber in 1985, Elraco Distributors is a family owned business that supplies hardware to the vibrant furniture and cabinet manufacturing industry in South Australia. Wanting to expand their reach to service customers nationally, Errol and Ray set up their online store (hardware.net.au) and have not looked back. Not only did their online presence mean they could reach Aussies nationwide, it also helped them broaden their audience to include furniture for schools, local city councils, government departments, and direct consumers who enjoy DIY (do-it-yourself) work.⁷ Thanks to its online hardware store, customers can place orders and arrange delivery on its website at any time - without having to only conduct such transactions during the operating hours of its physical store.

When the COVID-19 pandemic hit, Elraco knew it had to shift its focus to online sales to sustain its business. Errol and Ray set out to optimise their existing Google Ads campaigns, which resulted in a 25% lift in the visibility of their ads and more online sales from their website. After the success of the campaigns, Elraco decided to increase its investment in digital advertising by 53% to further scale its campaigns and generate more revenue from online channels.

7. Elraco Distributors (2020), "About Elraco Distributors." Available at: https://elraco.com.au/?page_id=1360

Many businesses have combined Google's search advertising with other forms of advertising such as video advertisements on **YouTube** to connect with more customers through engaging and memorable content on the video sharing platform. Box 3 shows an example of an Australian business that has made effective use of YouTube to boost customer outreach.

Beyond search and video advertising, Australian businesses also benefit from displaying advertisements on Google's network of publisher sites such as websites, blogs, and forums through **AdSense**. These net returns are estimated at AU\$63.9 million annually. In addition, Google provides new sources of income for content creators in Australia. By allowing content creators such as online journalists, media sites, bloggers and writers to earn income by hosting advertisements on their websites, AdSense helps these individuals monetise space on their websites, and is estimated to generate a total annual income of AU\$196.9 million to content creators in Australia.

By allowing companies to establish a strong online presence through online business listings that show up prominently on the relevant search results of customers in the vicinity, the **Google My Business** feature on Google Maps allows Australian businesses to be discovered by a larger range of customers. Box 4 illustrates an example of a local tourism business in Queensland which reached new customers during the COVID-19 pandemic by making use of Google My Business.

Google also supports organisations in the non-profit sector in Australia through **Ad Grants**, a programme that provides in-kind advertising to eligible non-profit organisations. Ad Grant recipients can leverage ads on Google Search result pages to promote their organisation, recruit volunteers, and attract donors. Since 2019, the Google Ad Grants program has provided non-profits in Australia with over AU\$75 million worth of free search ads.

In addition, Google's digital product distribution system, **Google Play**, as well as its operating system, **Android**, have resulted in a variety of benefits to app developers in the country. App developers are estimated to earn an annual income of about AU\$639 million from Google Play in both the domestic and global markets.⁸ Further, through the Android operating system, app developers in Australia can readily reach more than 1 billion users globally.⁹ It was additionally found that Android app developers can save up to 25 percent in development time from not having to port their apps across different operating systems.¹⁰

In addition, Google has made significant investments of more than US\$2 billion in **network infrastructure** to help improve the capacity of network services in the Asia Pacific (APAC) region, including Australia. These investments have provided huge boosts to overall economic activity and digital connectivity. Box 5 shows the impact of Google's network infrastructure investments on Australian businesses.

8. Google Play is a digital distribution service operated and developed by Google. It serves as the official app store for the Android operating system, which refers to the mobile operating system developed by Google for touchscreen mobile devices such as smartphones and tablets. Google Play users are able to browse and download applications developed with the Android software development kit.

9. AlphaBeta (2018), "AlphaBeta research brief: The estimated economic impact from Android across five Asian markets". Available at: <https://www.alphabeta.com/wp-content/uploads/2017/08/180820-Android-Economic-Impact.pdf>

10. AlphaBeta (2018), "AlphaBeta research brief: The estimated economic impact from Android across five Asian markets". Available at: <https://www.alphabeta.com/wp-content/uploads/2017/08/180820-Android-Economic-Impact.pdf>

BOX 3. ONLINE AUTO PARTS



LOCATION: QUEENSLAND
NUMBER OF EMPLOYEES: 24

Online Auto Parts is a 14-year-old business based in Queensland that innovated the traditional automotive parts industry by delivering products directly from the manufacturers to customers. Wanting to reach Aussies nationwide, they used Google Search Ads and Google Shopping, which helped customers to search for, visually explore, and buy their auto parts online. Having hit their sales goals with Google Search and Shopping Ads, they wanted to keep growing. To help reach more customers and capture more demand, they turned to YouTube.

Within a period of three months, they created three different YouTube campaigns to test which ad format, creative message and audience yielded the best results. Within a quarter, their campaigns drove 50% more conversions, like making an online purchase after viewing a video ad, and a 70% lift in sales revenue.

BOX 4. WALKABOUT CULTURAL ADVENTURES



LOCATION: QUEENSLAND
NUMBER OF EMPLOYEES: 3

Based in the Port Douglas Daintree region, Walkabout Cultural Adventures provides cultural tours within Kuku Yalanji country, focusing on Aboriginal culture, significant sites, environmental information and local attractions. Its founder, Juan Walker, has been guiding in the region for 19 years, and prides himself on providing a unique and personalised experience to his customers.

When the COVID-19 pandemic brought international travel to a standstill, Queensland's tourism industry was badly hit, and Juan knew he had to find ways to reach new customers. By updating important tour information to his free Google Business Profile and adding a feature to enable customers to buy tour tickets directly from the Google Search page, he was able to attract the attention of Aussies looking to explore their own backyard.

Walkabout Cultural Adventures is just one of the 1.3 million Australian businesses that have managed to stay connected to their customers through the use of free and paid Google tools.

BOX 5. GOOGLE'S NETWORK INFRASTRUCTURE INVESTMENTS IN AUSTRALIA



By improving the capacity of network services, network infrastructure investments enable faster data transfers and greater efficiency in the operation of Google's applications, allowing business users to seamlessly deliver their services to customers around the globe. With the addition of submarine cables and edge infrastructure such as the trans-Pacific undersea fibre cable, businesses are able to benefit from connectivity improvements including faster end-user speeds and lower international connectivity costs.

A recent study found that by allowing for increased business activity through higher rates of Internet use, Google's investments in network, submarine cables and edge infrastructure in APAC collectively contributed a total US\$30 billion (AU\$42 billion) to Australia's GDP cumulatively from 2010 to 2019.¹¹ The study also found that Google's network infrastructure investment spurred job creation through two channels: direct job creation in the construction and telecommunications sectors, and indirect job creation facilitated by the improvement of broadband connectivity (especially in the IT, financial services and manufacturing sectors). The same study estimated that a total of 18,000 jobs were created as a result of Google's network investments in Australia in 2019.¹²

11. Analysys Mason (2020), *Economic impact of Google's APAC network infrastructure – Focus on Australia*. Available at: <https://www.analysismason.com/consulting-redirect/reports/impact-of-google-network-APAC-2020/>

12. Analysys Mason (2020), *Economic impact of Google's APAC network infrastructure – Focus on Australia*. Available at: <https://www.analysismason.com/consulting-redirect/reports/impact-of-google-network-APAC-2020/>

1.2 GOOGLE HELPS AUSTRALIAN BUSINESSES SAVE TIME AND ENHANCE PRODUCTIVITY

Google helps businesses save time by enhancing employees' productivity through improving the speed and ease of access of employees to information and research, and helping workers optimise their work journeys.

Google Maps supports businesses in the transport sector by providing free access to route planning and optimisation, allowing them to optimise their trips. In Australia, each transport business is estimated to save about 272 hours per year by making use of Google Maps to plan their journeys. This is equivalent to the total benefits of AU\$1.7 billion based on annual wages.

Meanwhile, **Google Search** minimises the time and costs for businesses to acquire information by arranging and simplifying the vast array of content on the internet. The ability to rapidly find relevant data and information provides tremendous productivity and time-saving benefits. It is estimated that Google Search helps each worker save about 46 hours - or 1.9 full days - per year on average. The total annual business benefits of Google Search are estimated at AU\$4.6 billion.

Exhibit 3 summarises the annual amount of time saved and the value of time savings (in wage terms) provided by Google Maps and Google Search to Australian businesses.

EXHIBIT 3:

GOOGLE SEARCH AND GOOGLE MAPS HELP BUSINESSES SAVE TIME, BRINGING ABOUT AN ESTIMATED ANNUAL ECONOMIC BENEFIT WORTH AU\$6.3 BILLION

ESTIMATED ANNUAL TIME SAVINGS OF GOOGLE SEARCH AND GOOGLE MAPS IN AUSTRALIA
HOURS OF SAVED TIME AND EQUIVALENT VALUE IN WAGE TERMS

PRODUCT	TIME SAVED PER USER	BENEFITS PER USER	TOTAL BENEFITS
Google Search	46 hours per employee	AU\$1,400 per employee	AU\$4.6 billion
Google Maps	272 hours per transport business	AU\$8,800 per transport business	AU\$1.7 billion
TOTAL:			AU\$6.3 BILLION

Note: Figures are estimated based on the latest available annual data, (i.e., in 2019, or where available, more recent data spanning a 12-month period between 2019 and 2020).
SOURCE: AlphaBeta analysis

1.3 97% OF GOOGLE'S BUSINESS BENEFITS GO TO NON-TECHNOLOGY SECTORS

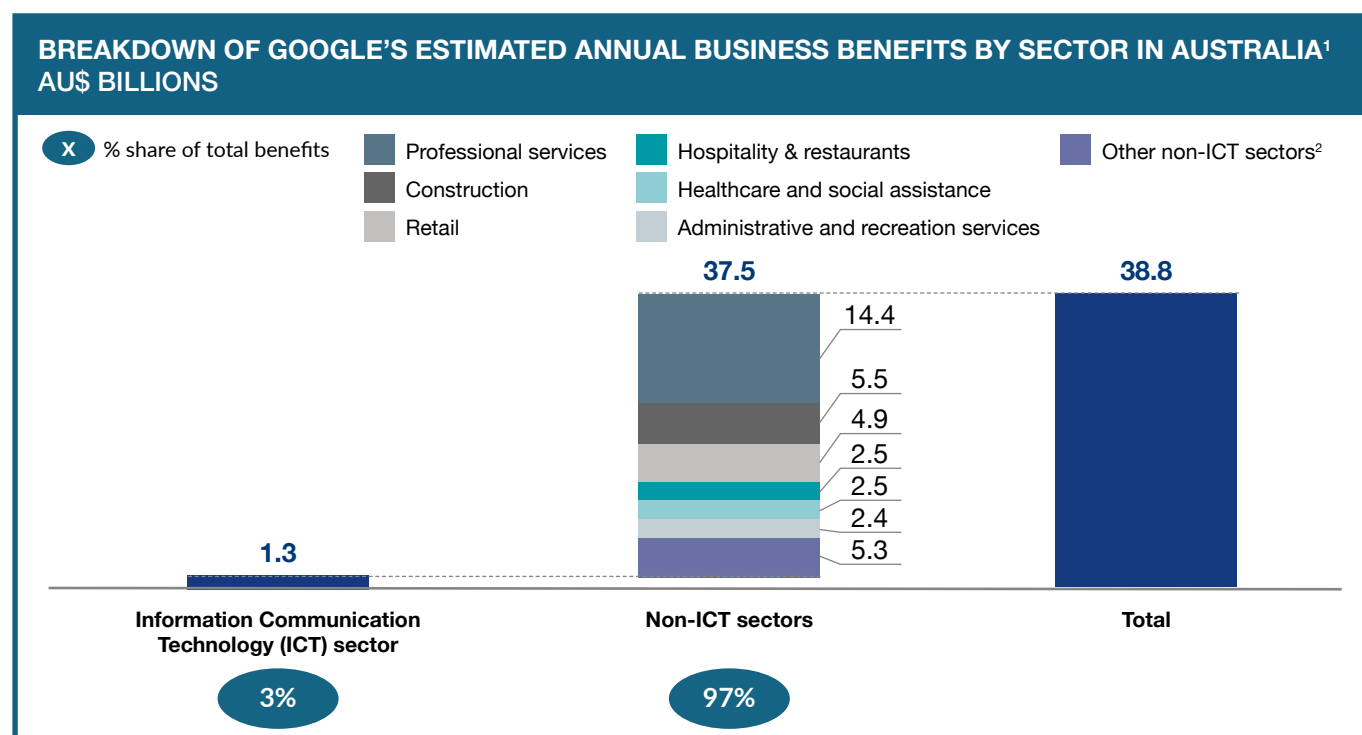
Contrary to common belief that digital products and services are likely to benefit digital or tech industries most, a substantial share of Google's business benefits - at 97 percent - is in fact estimated to be experienced by businesses in non-digital sectors. Indeed, the professional and financial services sectors account for the largest share of the total business benefits, at AU\$14.4 billion out of the total AU\$38.8 billion (37 percent), followed by the construction and retail sectors.¹³ Other sectors such as hospitality and

restaurants as well as healthcare and social assistance also derive significant benefits from Google's applications and services, at between AU\$2.4 billion and AU\$5.5 billion per year (Exhibit 4).

Boxes 6 and 7 illustrate how two small Australian businesses in the healthcare sector have gained significant benefits from using Google's advertising products.

EXHIBIT 4:

97% OF GOOGLE'S BUSINESS BENEFITS GO TO BUSINESSES IN NON-TECHNOLOGY SECTORS



1. This excludes revenue gained by website publishers who use AdSense as it may comprise freelancers and individuals who publish websites recreationally, and thus do not fall under any formal industry sector.

2. Other non-ICT sectors include Agriculture, Mining, Manufacturing, Utilities, Transport services.

Note: Figures are estimated based on the latest available annual data, (i.e., in 2019, or where available, more recent data spanning a 12-month period between 2019 and 2020). Figures may not sum due to rounding.

SOURCE: AlphaBeta analysis

13. This excludes revenue gained by website publishers who use AdSense as it may comprise freelancers and individuals who publish websites recreationally, and thus do not fall under any formal industry sector.

BOX 6. PRESCRIPT RECRUITMENT



LOCATIONS: NEW SOUTH WALES, VICTORIA, AND SOUTH AUSTRALIA
NUMBER OF EMPLOYEES: 9

Prescript is a medical recruitment company with a mission - fix the doctor shortage in regional and remote Australia. By placing doctors in locations where their expertise is most needed, Prescript has brought about an immeasurable difference to those communities.

Attracting doctors to regional and remote areas is a challenging task. Prescript must help potential doctors understand and visualise their lifestyle in the new town and connect with the community there. One of the main difficulties Prescript faced was generating interest from doctors in the vacant medical positions. To solve this, James, Prescript's founder, and his marketing manager decided to use Google Ads to reach more doctors directly.

Google Ads has delivered the highest conversion rate out of all other channels at 4.27%, helping Prescript attract more doctors to remote areas with doctor shortages and drive revenue growth. In addition, Prescript used publicly available online data to get more specific in serving doctors' needs. Making use of the intelligence provided by Google Trends around what doctors were searching for, Prescript was able to create online resources such as blogs and survey information that helped doctors with their research and exploration.

BOX 7. PERTH PODIATRIC SURGERY



LOCATION: WESTERN AUSTRALIA
NUMBER OF EMPLOYEES: 7

Established in 2015, Perth Podiatric Surgery is a specialist podiatry practice providing patients with on-the-spot diagnosis and a range of treatment approaches for foot and ankle conditions. They are the premiere provider of keyhole bunion surgery in Western Australia and have a second clinic dedicated to this procedure in Brisbane.

After COVID-19 led to a mandatory closure of the business during March and April 2020, Perth Podiatric Surgery decided to use the downtime to re-design their Google Ads set-up so that they could optimise returns on their advertising spend the moment the restrictions were lifted. The business was able to reopen in early May, and they saw a 350% lift in revenue-driving actions like appointment bookings, online from enquiries and phone calls, compared to the two months prior. These significant improvements in their digital advertising helped them to quickly get back on track. Following the success of their strategy in Perth, they have decided to adopt a similar approach to optimising the digital advertising of their Brisbane-based business.

1.4 60% OF GOOGLE'S BUSINESS BENEFITS GO TO SMALL AND MEDIUM-SIZED ENTERPRISES

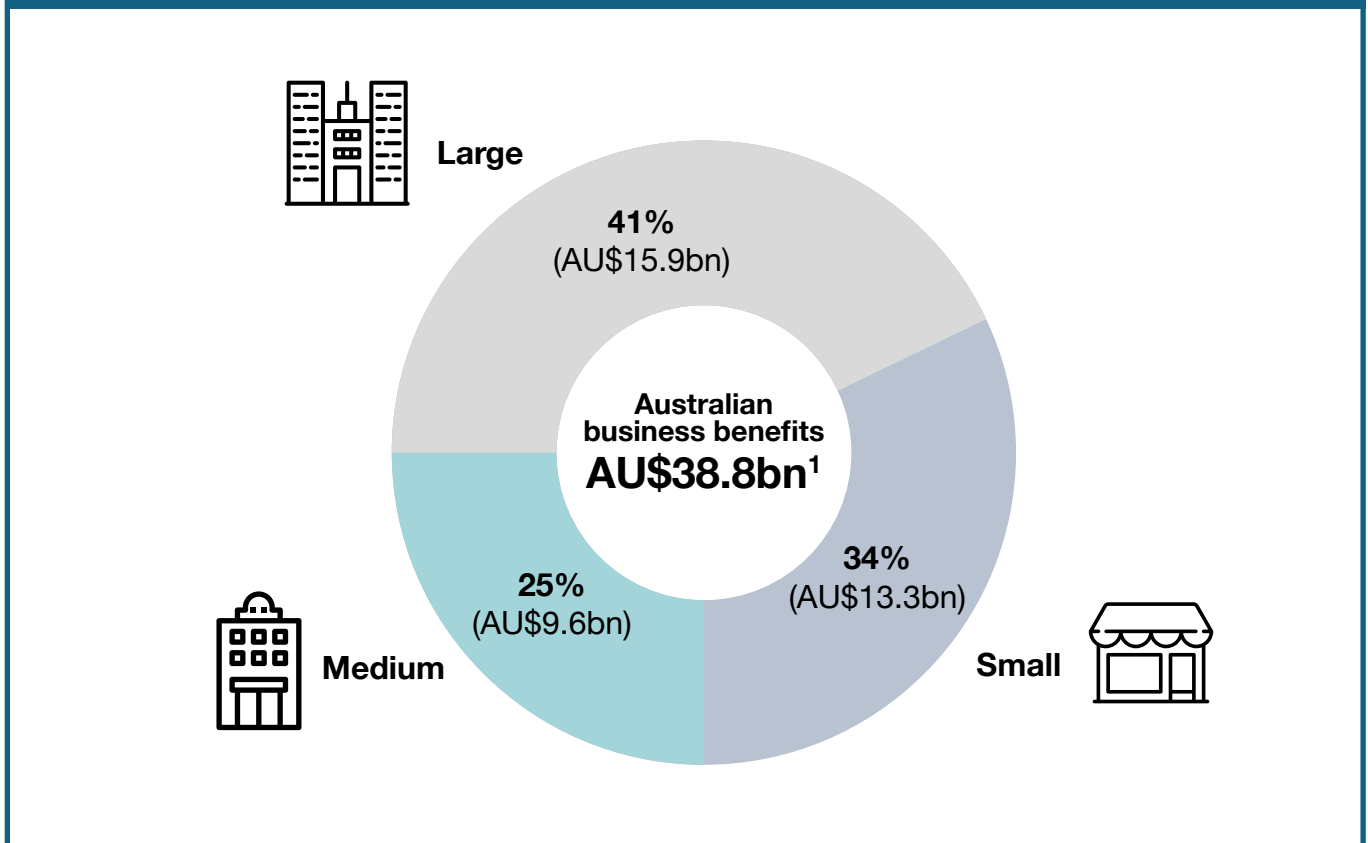
Google's applications are especially useful in helping micro, small and medium-sized enterprises (MSMEs) overcome barriers and reach new customers. Search advertising through **Google Ads** is a cost-effective tool for MSMEs that lack the scale and resources to run large marketing campaigns on traditional media such as television, radio and newspapers.

Meanwhile, **Google Search** enables MSMEs and self-employed entrepreneurs to find information on market trends and competitors to identify new growth opportunities at no cost. Taken together, the benefits realised by Australian MSMEs account for almost 60 percent of the total Google's business benefits in the country (Exhibit 5).

EXHIBIT 5:

ABOUT 60% OF BUSINESS BENEFITS DERIVED FROM GOOGLE PLATFORMS IN AUSTRALIA ARE DERIVED BY SMALL AND MEDIUM-SIZED BUSINESSES

% OF ANNUAL BUSINESS BENEFITS DERIVED FROM GOOGLE, BY SIZE OF BUSINESS



1. This value differs slightly from the total estimated business benefits of AU\$39 billion, as it excludes revenue gained by website publishers who use AdSense, many of whom are likely to be freelancers and individuals who do so recreationally, and thus do not belong to a formal business.

Note: Figures are estimated based on the latest available annual data, (i.e., in 2019, or where available, more recent data spanning a 12-month period between 2019 and 2020). Figures may not sum due to rounding.

SOURCE: AlphaBeta analysis

1.5 BEYOND THE 1,800 PEOPLE EMPLOYED BY GOOGLE IN AUSTRALIA, 116,200 JOBS IN THE WIDER ECONOMY ARE DIRECTLY SUPPORTED AND A FURTHER 162,700 JOBS ARE INDIRECTLY SUPPORTED

Beyond the 1,800 people employed by Google in Australia, the company directly supports another 116,200 jobs in the wider economy through the use of their products, and indirectly a further 162,700 jobs in the supply chains of companies that use their products (Exhibit 6).¹⁴

Through the use of Google products that lead to businesses expanding their customer bases and increasing revenue, the company directly supports an estimated 116,200 jobs in the wider economy.¹⁵ For instance, businesses that expand their reach to new markets through Google's services like Google Ads and AdSense would require increased hiring to meet this additional demand. Further, new revenue streams generated via Google Play for app development companies can lead to businesses willing to hire more to expand their operations. Over two-thirds of these 116,200 jobs - at 79,200 jobs - are estimated to have been created in small and medium businesses (Exhibit 7).¹⁶

In addition, a further 162,700 jobs could be supported indirectly in the supply chain due to increased demand from businesses that use Google products.¹⁷ These are jobs that get created in companies or industries which support those that have achieved business expansion due to the use of Google products. For instance, an online retail company that is able to access more customers through the use of Google Ads or by



establishing a free Business Profile on Google would need to increase its demand for raw materials or supplies, in order to produce more goods to meet greater customer demand. This increased demand for materials and supplies would in turn lead to increased hiring needs within those companies to meet the higher demand.

14. AlphaBeta (2019), *Google economic impact: Australia 2019*. Available at: https://alphabeta.com/wp-content/uploads/2019/09/ab006_google_business_web-1.pdf

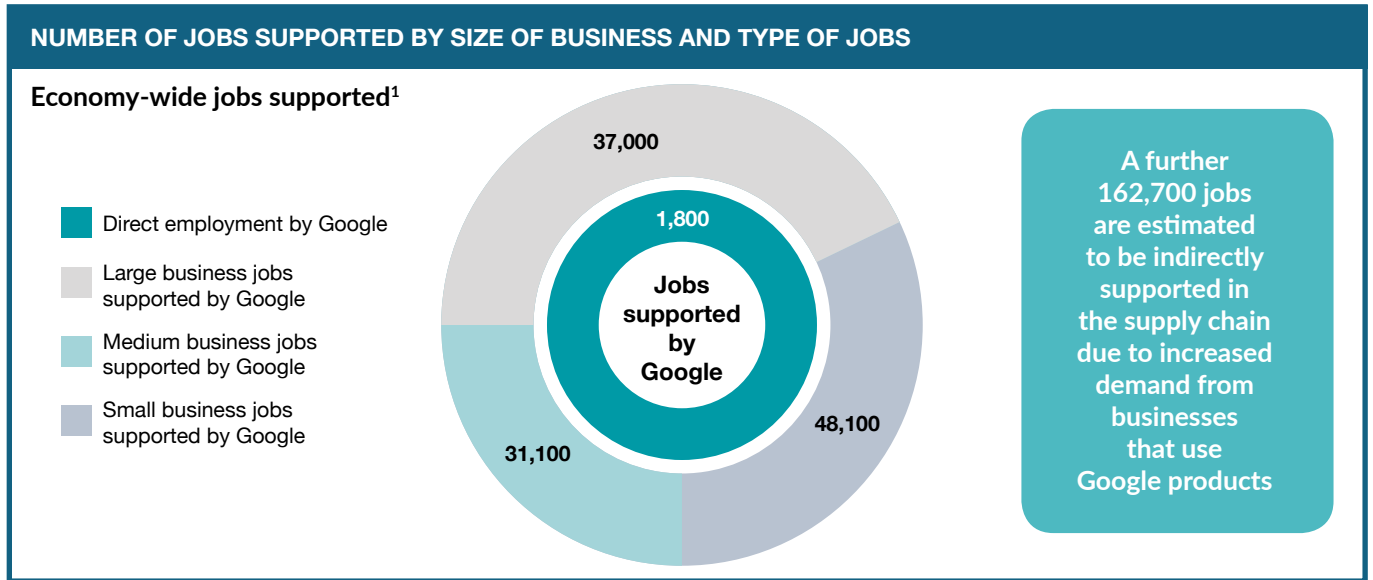
15. AlphaBeta (2019), *Google economic impact: Australia 2019*. Available at: https://alphabeta.com/wp-content/uploads/2019/09/ab006_google_business_web-1.pdf

16. AlphaBeta (2019), *Google economic impact: Australia 2019*. Available at: https://alphabeta.com/wp-content/uploads/2019/09/ab006_google_business_web-1.pdf

17. Based on 2020 research by AlphaBeta (unpublished).

EXHIBIT 6:

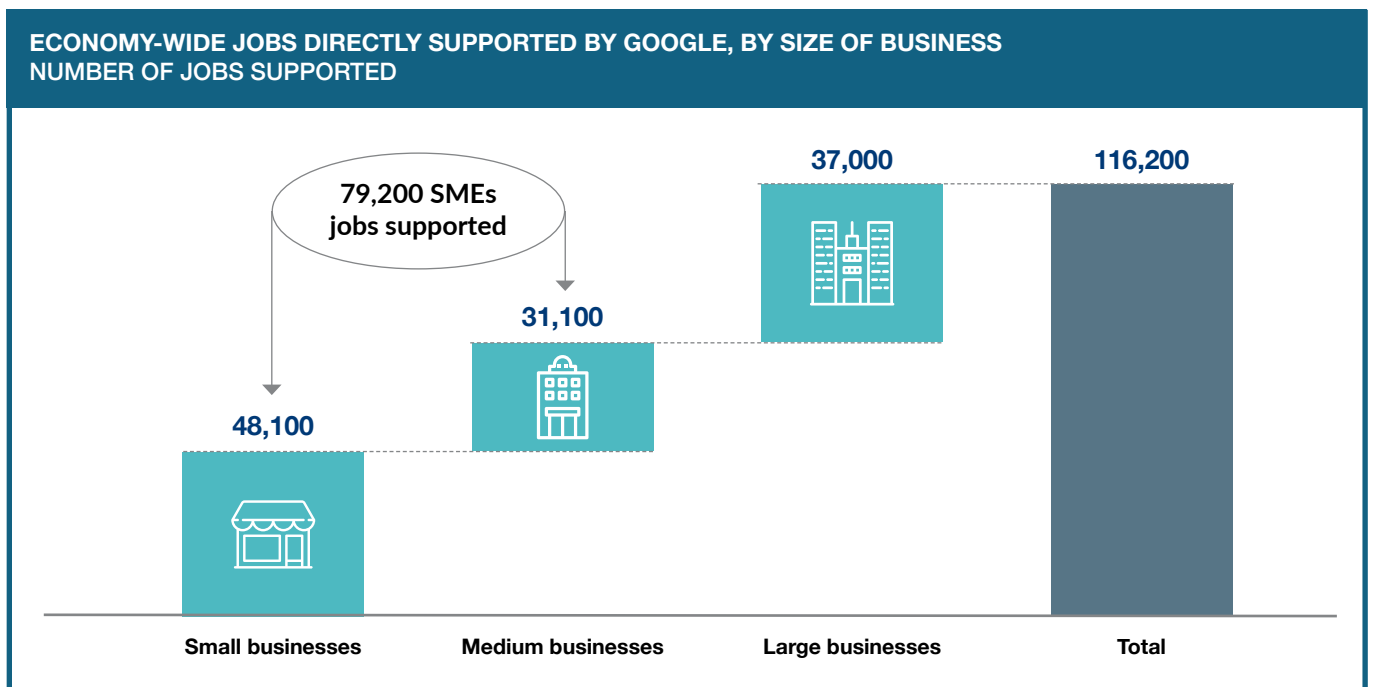
BEYOND THE 1,800 PEOPLE EMPLOYED BY GOOGLE IN AUSTRALIA, 116,200 JOBS IN THE WIDER ECONOMY ARE DIRECTLY SUPPORTED AND A FURTHER 162,700 JOBS ARE INDIRECTLY SUPPORTED THROUGH THE USE OF THEIR PRODUCTS



1. Jobs supported refer to new jobs that may have been created through a business' use of Google's platforms, as well as ongoing employment of jobs that previously existed. SOURCE: AlphaBeta (2019), Google economic impact: Australia 2019. Available at: https://alphabetabeta.com/wp-content/uploads/2019/09/ab006_google_business_web-1.pdf

EXHIBIT 7:

GOOGLE DIRECTLY SUPPORTS 116,200 JOBS IN AUSTRALIA, OF WHICH OVER TWO-THIRDS (79,200) ARE JOBS IN SMALL AND MEDIUM SIZED BUSINESSES



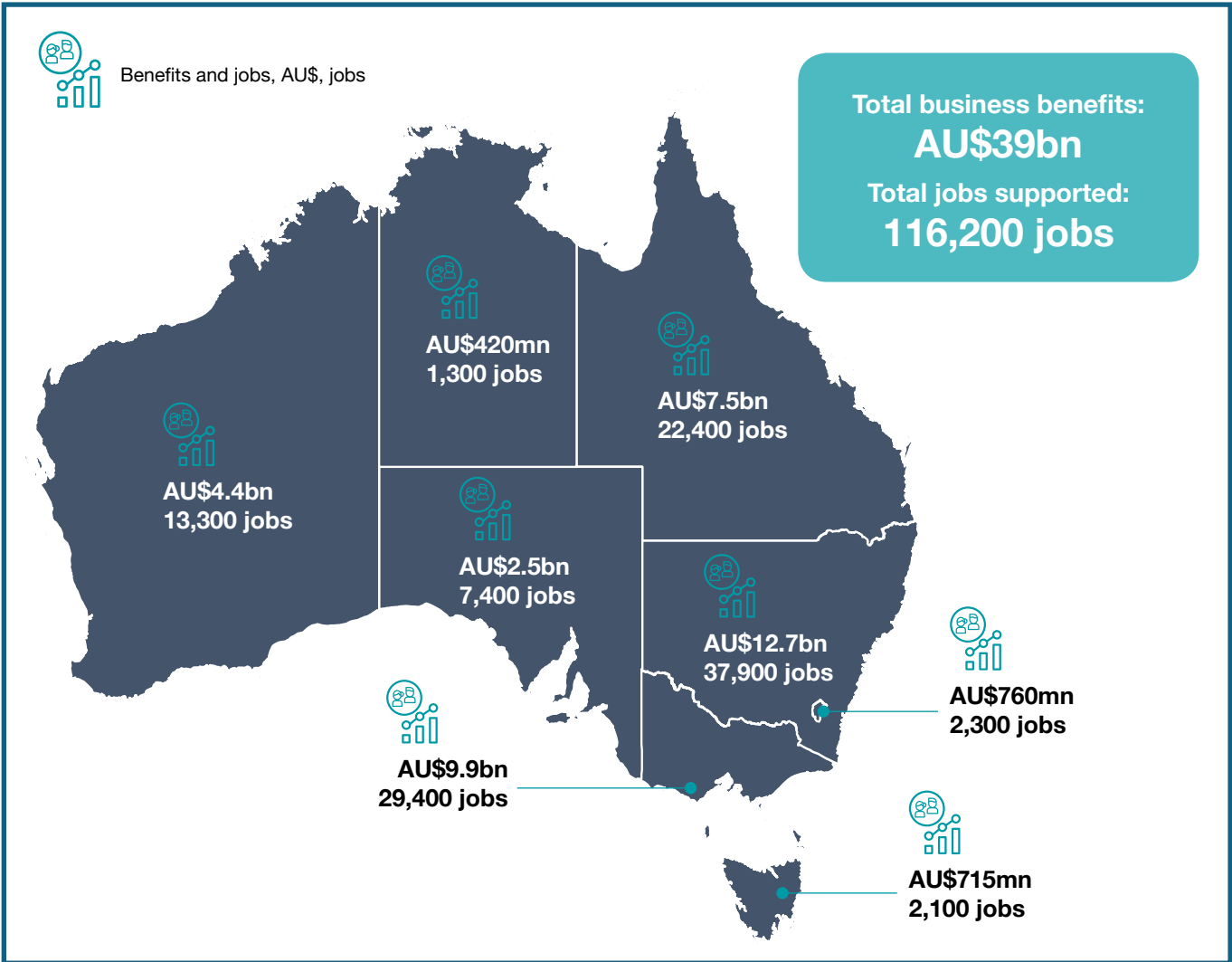
SOURCE: AlphaBeta (2019), Google economic impact: Australia 2019. Available at: https://alphabetabeta.com/wp-content/uploads/2019/09/ab006_google_business_web-1.pdf

1.6 GOOGLE'S BUSINESS BENEFITS AND JOB IMPACTS ARE DISTRIBUTED ACROSS ALL STATES AND TERRITORIES

The benefits of Google's applications and services in terms of increased revenue, time savings, as well as job impact are distributed across all states and territories in Australia. These benefits range from AU\$420 million

and 1,300 jobs in Northern Territory to AU\$12.7 billion and 37,900 jobs in New South Wales. The regional breakdown of Google's total annual business benefits and direct job creation effects are shown in Exhibit 8.

EXHIBIT 8: GOOGLE'S BENEFITS ARE GENERATED ACROSS ALL STATES AND TERRITORIES IN AUSTRALIA



Note: Figures are estimated based on the latest available annual data, (i.e., in 2019, or where available, more recent data spanning a 12-month period between 2019 and 2020). Figures may not sum due to rounding.

SOURCE: AlphaBeta (2019), Google economic impact: Australia 2019. Available at: https://alphabeta.com/wp-content/uploads/2019/09/ab006_google_business_web-1.pdf



CONSUMER BENEFITS

Consumers in Australia benefit from Google's applications through improved access to information, entertainment and enrichment, as well as increased productivity and convenience in their everyday lives. Taken together, Google Search, Google Maps, Google Play, Drive, Photos, Docs and Sheets are estimated to bring about total annual consumer benefits worth AU\$14 billion.¹⁸ In addition, Google Search and Google Maps also bring about significant time savings to Australians. The average Australian user is estimated to save 4.9 days per year through the use of Google Search to find information. Thanks to the trip optimisation feature of Google Maps, the average user of this service in the country is estimated to spend 5.6 hours less travelling on roads each year.

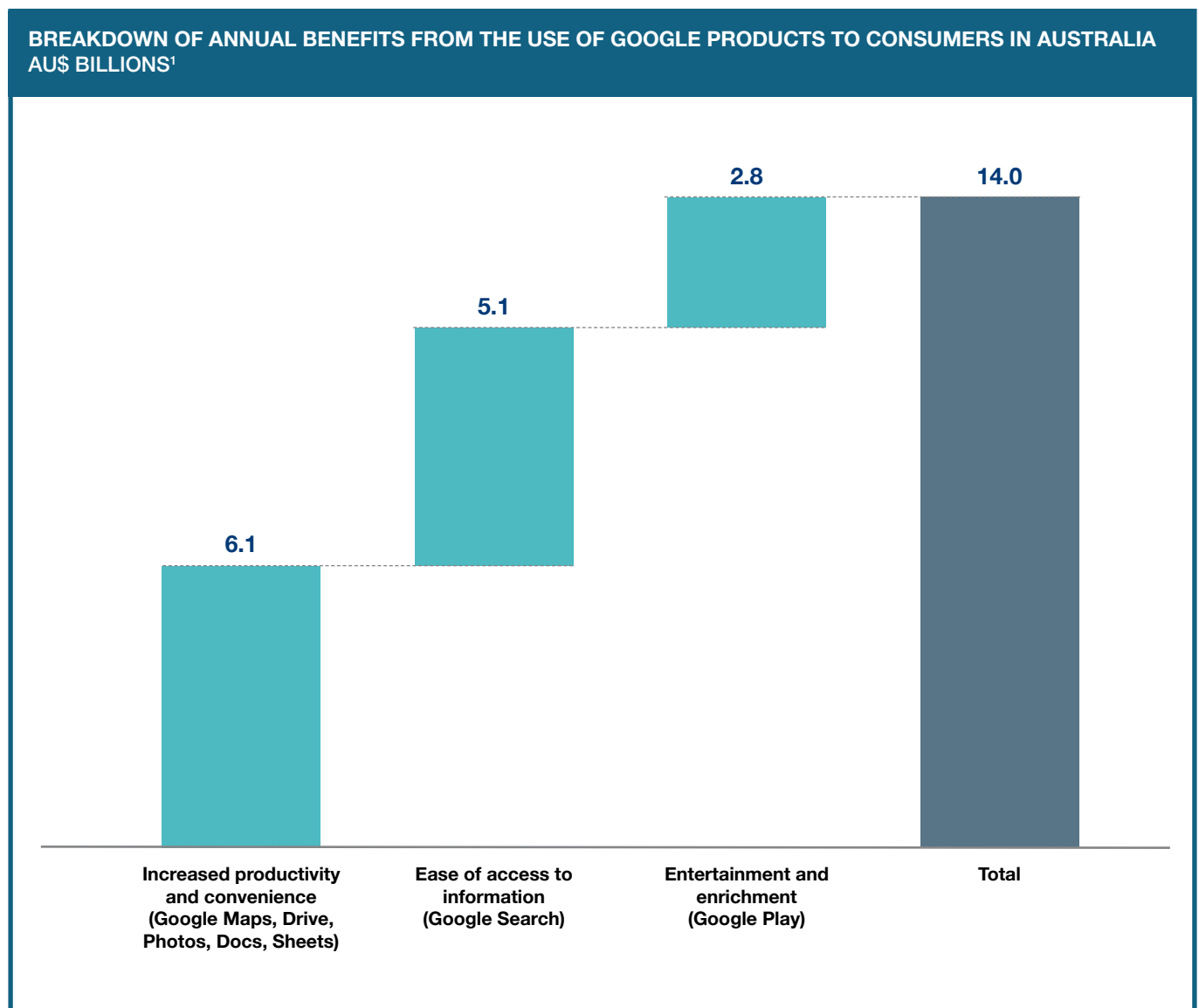
18. This utilises the economic "consumer surplus" concept. Referring to the price the consumer is willing to pay for a product or service and the price that he or she actually pays, this concept is used in economic analysis to reflect the amount of utility that consumers receive from the product or service. Estimates of consumer surplus are based on latest available data (i.e., in 2019, or where available, more recent data spanning a 12-month period between 2019 and 2020). See Appendix for detailed methodology

The consumer benefits supported by Google’s applications come in the form of improved access to information, entertainment and enrichment, as well as increased productivity and convenience in the everyday

lives of Australians. Exhibit 9 reflects the distribution of these benefits across the different types of benefits and applications.

EXHIBIT 9:

GOOGLE IS ESTIMATED TO BRING A TOTAL OF AU\$14 BILLION WORTH OF CONSUMER BENEFITS TO AUSTRALIAN CONSUMERS ANNUALLY



1. Figures may not sum due to rounding.

Note: Figures are estimated based on the latest available annual data, (i.e., in 2019, or where available, more recent data spanning a 12-month period between 2019 and 2020).

SOURCE: AlphaBeta analysis

2.1 CONSUMERS DERIVE A TOTAL BENEFIT OF AU\$14 BILLION FROM GOOGLE'S SERVICES EACH YEAR

The consumer benefits supported by Google are challenging to measure in monetary terms because individuals typically do not pay for the services, meaning there is no ready price proxy for the value they place on these services. In the absence of price indicators, the economic “willingness to pay” principle was adopted to estimate the value of consumer benefits by asking individuals how much they value specific services – also known as consumer surplus. Taken together, the total value placed by consumers on Google’s services (including Google Search, Google Play, Google Maps, Drive, Photos, Docs and Sheets) – which takes into account their perceived functionality and ease of using

these products – is estimated at more than AU\$14 billion per year.

Exhibit 10 provides a breakdown of the total consumer surplus by type of benefits. An estimated AU\$6.1 billion worth of consumer surplus is derived from products that increase productivity and convenience for consumers, including Google Maps, Drive, Photos, Docs, and Sheets. The total consumer surplus supported by Google Search amounts to AU\$5.1 billion per year. Meanwhile, Google Play, which brings consumers access to a range of smartphone applications, digital books, music and films, bring about an annual benefit worth AU\$2.8 billion.

EXHIBIT 10:

GOOGLE'S PRODUCTS BRING ABOUT INCREASED ACCESS TO INFORMATION, MORE OPTIONS FOR ENTERTAINMENT AND ENRICHMENT, AND IMPROVED CONVENIENCE TO CONSUMERS

ESTIMATED ANNUAL CONSUMER BENEFITS FROM GOOGLE PRODUCTS IN AUSTRALIA
CONSUMER SURPLUS (AU\$)

TYPE OF BENEFITS	PRODUCT	ANNUAL CONSUMER BENEFITS
Ease of access to information	Google Search	AU\$5.1 billion
Entertainment and enrichment	Google Play	AU\$2.8 billion
Increased productivity and convenience	Google Maps	AU\$6.1 billion
	Google Drive, Photos, Docs and Sheets	
TOTAL ANNUAL CONSUMER BENEFITS:		AU\$14 BILLION

Note: Figures are estimated based on the latest available annual data, (i.e., in 2019, or where available, more recent data spanning a 12-month period between 2019 and 2020). Figures may not sum due to rounding.
SOURCE: AlphaBeta analysis

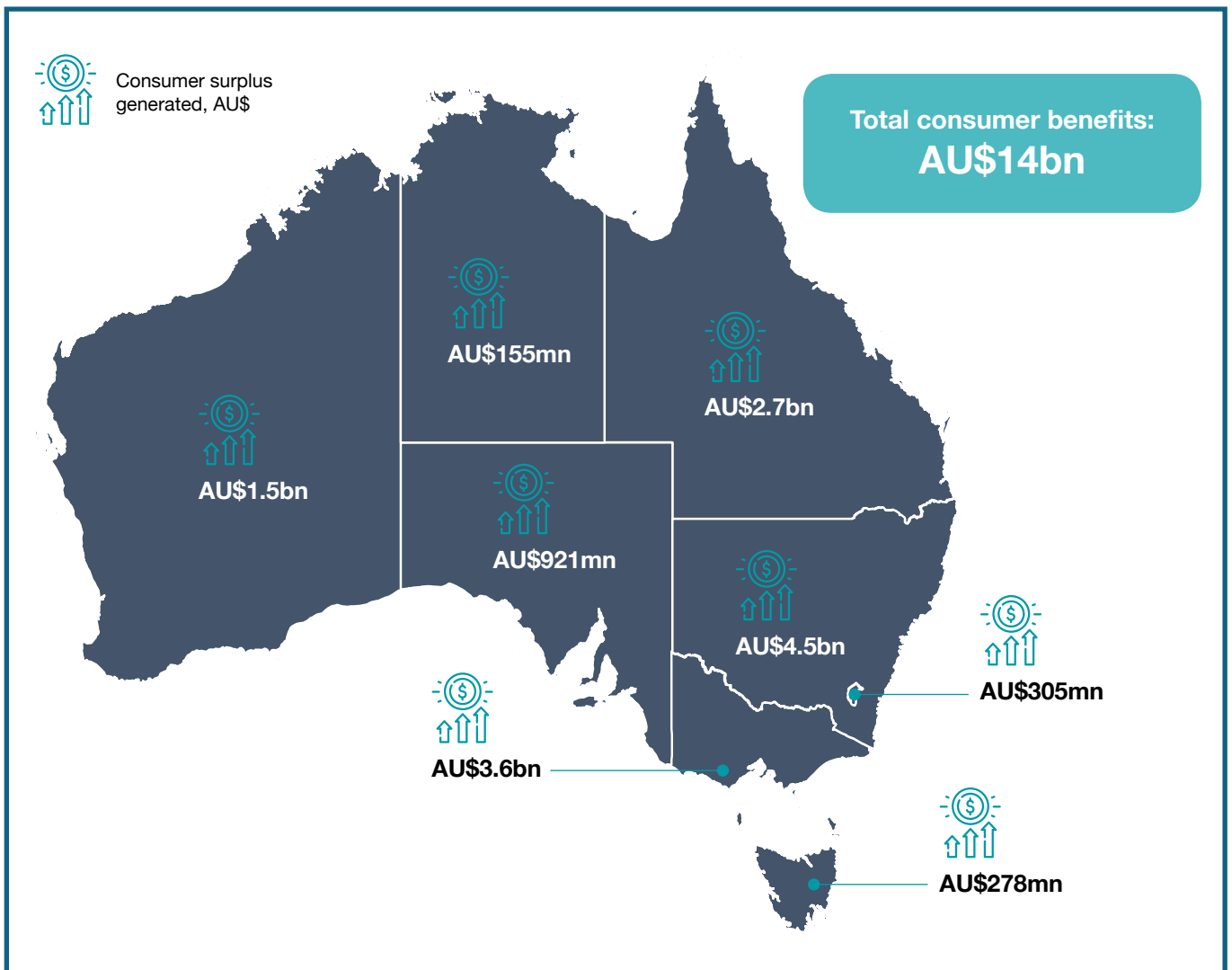
2.2 CONSUMER BENEFITS ARE DISTRIBUTED ACROSS ALL STATES AND TERRITORIES

The consumer benefits brought about by Google's services are distributed across all states and territories. These benefits are estimated to range from AU\$155 million in Northern Territory to AU\$4.5 billion in New

South Wales. Exhibit 11 shows the regional breakdown of the total annual consumer surplus realised by Australian consumers.

EXHIBIT 11:

CONSUMER BENEFITS FROM GOOGLE'S PRODUCTS ARE EXPERIENCED IN ALL STATES AND TERRITORIES IN AUSTRALIA



Note: Figures are estimated based on the latest available annual data, (i.e., in 2019, or where available, more recent data spanning a 12-month period between 2019 and 2020). Figures may not sum due to rounding.

SOURCE: AlphaBeta Analysis

2.3 GOOGLE HELPS AUSTRALIAN CONSUMERS SAVE TIME

Google’s services also help Australian consumers boost productivity and save time in their everyday lives. As compared to offline methods of seeking out information, it is estimated that **Google Search** brings about a significant time saving of 4.9 full days to the average user in Australia each year. This is equivalent to over 118 hours that is freed up for other activities.

Google Maps also brings about greater convenience in the personal commuting and driving journeys of

Australian citizens through the service’s wayfinding and navigation features. Such features optimise these trips using real-time data such as public transport arrival times and road traffic conditions. Thanks to such features, the average Google Maps user in Australia saves about 5.6 hours per year on the roads (Exhibit 12). Note that these time savings differ from those estimated in the business benefits section, as these relate to savings gained on non-work activities (e.g., using Google Search to find information for leisure purposes, and using Google Maps for personal trips).

EXHIBIT 12:

GOOGLE’S APPLICATIONS LIKE GOOGLE SEARCH AND GOOGLE MAPS BRING CONVENIENCE TO CONSUMERS BY HELPING THEM SAVE TIME

ESTIMATED ANNUAL TIME SAVINGS OF GOOGLE SEARCH AND GOOGLE MAPS TO CONSUMERS (AMOUNT OF TIME SAVED PER YEAR)

PRODUCT	 ANNUAL TIME SAVINGS PER USER ¹
Google Search	4.9 days per year
Google Maps	5.6 hours per year

1. These time savings differ from those estimated in the business benefits section, as these relate to savings gained on non-work activities (e.g., using Google Search to find information for leisure purposes, and using Google Maps for personal trips).

Note: Figures are estimated based on the latest available annual data, (i.e., in 2019, or where available, more recent data spanning a 12-month period between 2019 and 2020). Figures may not sum due to rounding.

SOURCE: AlphaBeta analysis



APPENDIX: METHODOLOGY

SIZING GOOGLE'S ECONOMIC IMPACT IN AUSTRALIA

To estimate the benefits of Google's products to businesses, the economic value generated by businesses that use Google's applications and services was calculated. These are in the form of increased revenue (through increased customer outreach and access to new markets), as well as improved productivity (through time savings). The Google applications and services included in this analysis of business benefits include: Google Search, Google Ads, AdSense, Google Maps, and Google Play.

Estimating the consumer benefits supported by Google is a challenging task. This is because individuals typically do not have to pay for the Google's applications and services that they use. There are several established methodologies for estimating the benefits of free services, including consumer surplus based on the consumer's willingness to pay (how much

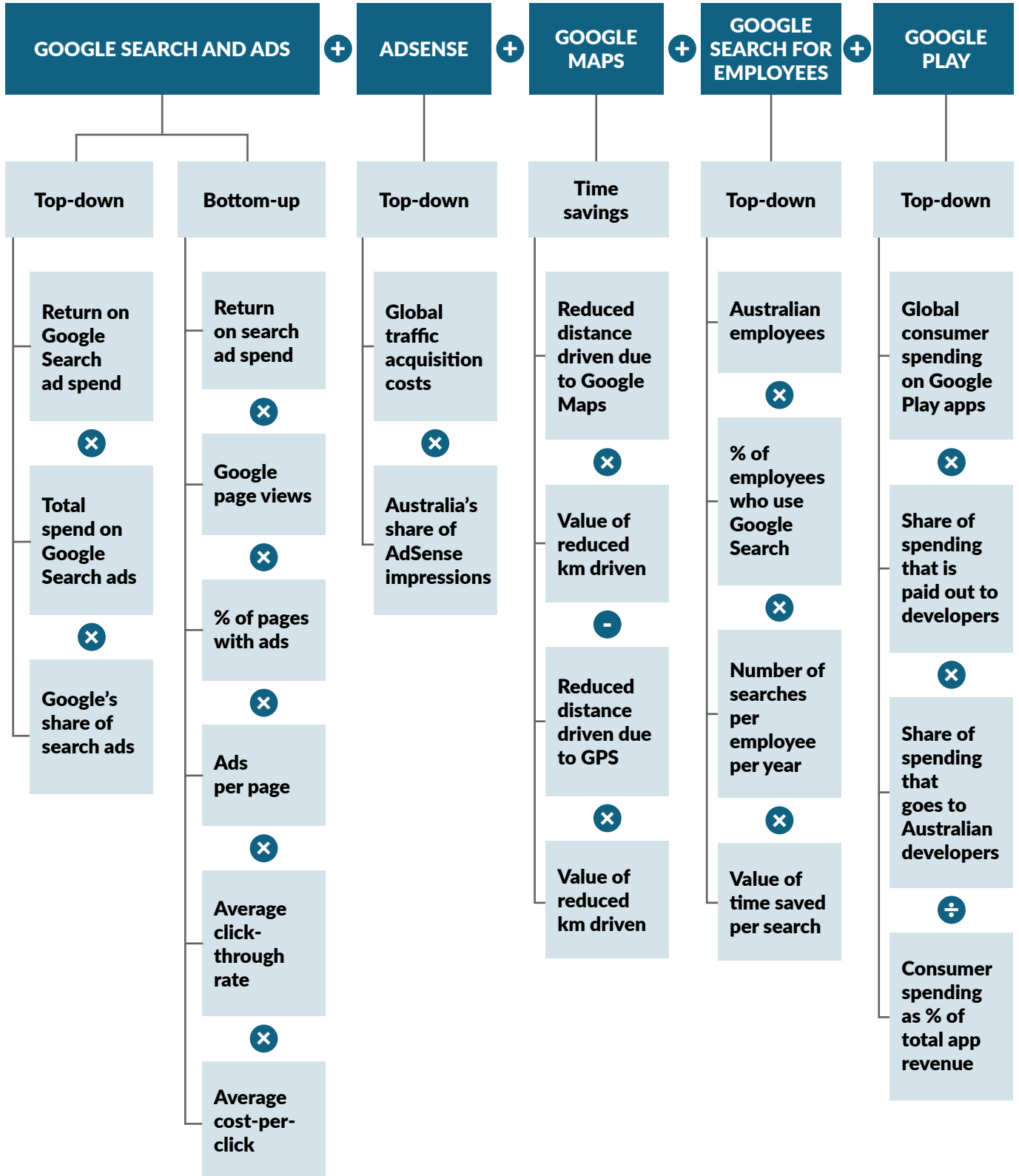
an individual values a Google's application or service) and value of time (how much time an individual saves by using a Google's application or service). This report uses both methods. Primary data used in the analysis was collected from a consumer survey of 535 internet users in Australia. This sample size is statistically significant based on Australia's online population, at a 95 percent confidence level (the level typically adopted by researchers). The survey was conducted online, which was deemed suitable given the intention to survey internet users. The sample was also checked for its representativeness of Australia's internet population based on demographic variables including age, income level, and the geographical location of respondents. The Google applications and services included in this analysis of consumer benefits include: Google Search, Google Maps, Google Play, Drive, Photos, Docs, and Sheets.

BUSINESS BENEFITS

The business benefits supported by Google include the gross revenue, income or savings generated by businesses using Google products. These benefits do not include the flow-on economic effects generated, such as further purchases from their suppliers or the economic activity generated by the employees of these businesses who spend their wages in the broader economy. These

benefits also do not account for activity that may have been displaced by Google, nor attempt to estimate the incremental impact of Google on the Australian economy beyond what would be the case if Google didn't exist but other companies like it did. Exhibit A1 summarises the methodology used for sizing business benefits of Google's products.

**EXHIBIT A1:
METHODOLOGY FOR SIZING BUSINESS BENEFITS FROM GOOGLE**



GOOGLE SEARCH AND ADS

The business benefits of Google Search and Ads were estimated using two methods – a top down approach and a bottom up approach. The top down approach estimated the total size of the search advertising segment in Australia and the proportion of this space that Google represents. The bottom up approach estimated the number of Google page views in Australia, the proportion of these pages that display advertisements, the number of advertisements on each page, the average click-through rate (CTR), and the average cost-per-click (CPC).

To estimate the benefits generated by businesses from using Google Search and Ads, a return on investment (ROI) ratio was applied to the total advertising spend of businesses on Ads, and both estimates were reported.¹⁹ This ROI ratio was developed from a few assumptions:

- Using a large sample of proprietary data, Hal Varian, Google's Chief Economist, estimated

that businesses received US\$2 in revenue for every US\$1 spent on advertising. This finding was published in the American Economic Review in 2009.

- Businesses also receive free clicks because of unpaid Google Search. Using research published in the International Journal of Internet Marketing and Advertising in 2009 by Jansen and Spink, the Google US Economic Impact Study assumed that businesses receive five clicks for every click on a paid advertisement.
- Unpaid clicks are not considered as commercially valuable, so the US Economic Impact Study assumed their value at 70 percent of paid clicks.

Table 1 shows the inputs and sources used for estimating the business benefits of Google Search and Ads.

TABLE 1: INPUTS AND SOURCES FOR CALCULATING BUSINESS BENEFITS OF GOOGLE SEARCH AND ADS

APPROACH	METRIC	SOURCE
Top down approach	Total online search advertising market size	<ul style="list-style-type: none"> • IAB Australia (2020)²⁰ • Statista (2020)²¹
	Google Search's market share	<ul style="list-style-type: none"> • StatCounter (2020)²²
Bottom up approach	Google Search page views	<ul style="list-style-type: none"> • Nielsen (2019)²³
	% of pages that display advertisements	<ul style="list-style-type: none"> • Varian (2014)²⁴
	Advertisements per page on average	<ul style="list-style-type: none"> • Varian (2014)²⁵
	Average CTR for Google Search (Estimate)	<ul style="list-style-type: none"> • AdStage(2020)²⁶
	Average CPC for Google Search (Estimate)	<ul style="list-style-type: none"> • AdStage(2020)²⁷

19. ROI reflects the net advertising benefits that businesses receive from online advertising (i.e. total revenue minus online advertising cost).

20. IAB Australia (2020), "Australian Digital Advertising Market Hits AU\$9.3B In 2019".

Available at: <https://iabaustralia.com.au/news/australian-digital-advertising-market-hits-9-3b-in-2019/>

21. Statista (2020), "Search advertising – Australia". Available at: [https://www.statista.com/outlook/219/107/search-advertising/australia?currency=AU\\$](https://www.statista.com/outlook/219/107/search-advertising/australia?currency=AU$)

22. StatCounter (2020), "Search engine market share Australia". Available at: <https://gs.statcounter.com/search-engine-market-share/all/australia>

23. Nielsen (2019), "Nielsen Digital Landscape Surfing Report". Available at: <https://digitallandscape.nielsendashboards.com.au/surfing-report>

24. Hal Varian (2014), "Economic value of Google" (Presentation).

Available at: <http://cdn.oreillystatic.com/en/assets/1/event/57/The%20Economic%20Impact%20of%20Google%20Presentation.pdf>

25. Hal Varian (2014), "Economic value of Google" (Presentation).

Available at: <http://cdn.oreillystatic.com/en/assets/1/event/57/The%20Economic%20Impact%20of%20Google%20Presentation.pdf>

26. AdStage (2020), Paid Media Q1 2020 Benchmark Report. Available at: <https://www.adstage.io/resources/adstage-benchmark-reports/>

27. AdStage (2020), Paid Media Q1 2020 Benchmark Report. Available at: <https://www.adstage.io/resources/adstage-benchmark-reports/>

TABLE 1 (CONT'D): INPUTS AND SOURCES FOR CALCULATING BUSINESS BENEFITS OF GOOGLE SEARCH AND ADS

APPROACH	METRIC	SOURCE
Top down approach	ROI ratio	<ul style="list-style-type: none"> • Varian (2009)²⁸ • Jansen & Spink (2009)²⁹ • Google (2018)³⁰

ADSENSE

The direct business benefits from AdSense were estimated as the net advertising benefits generated by businesses placing advertisements on publisher sites such as websites, blogs, and forums.³¹ We estimated this figure using Google's published global advertising revenue from Google network's websites and multiplied this by the country's share of global AdSense impressions.³² In addition, we applied an ROI ratio that advertisers earn using display advertising, derived from academic literature.

The benefits of AdSense to content creators were also estimated as the total income that they earn from placing advertisements sourced through Ads next to content on their website. The total income earned by Australian content creators was estimated from Google's global payments to website publishers, also known as their traffic acquisition costs, and applying Australia's share of AdSense impressions to estimate the payments specific to Australia.

Table 2 shows the inputs and sources used for estimating the business benefits of AdSense.

TABLE 2: INPUTS AND SOURCES FOR CALCULATING BUSINESS BENEFITS OF ADSENSE

ESTIMATION	METRIC	SOURCE
Net advertising benefits for advertisers	Advertising revenue from Google Network Member's websites	• Alphabet (2019) ³³
	ROI ratio	• Gupta et al. (2015) ³⁴
Revenue to content creators	Global traffic acquisition costs related to AdSense	• Alphabet (2019) ³⁵
Country's share of global AdSense benefits (applicable to both of the above)	Country's share of global impressions on AdSense	• DoubleClick (2012) ³⁶

28. Varian, H. R. (2009), "Online Ad Auctions". *The American Economic Review*, Vol. 99, No. 2, pp. 430-434.

29. Jansen, B. J., & Spink, A. (2009), "Investigating customer click through behaviour with integrated sponsored and non-sponsored results." *International Journal of Internet Marketing and Advertising*, Vol. 5, No. 1-2, pp. 74-94.

30. Google (2018), *Economic Impact Report*. Available at: <https://kstatic.googleusercontent.com/files/ed56d1f0ea72190c83db9077931ab69a53406ce48b0621788e53b05c909b5e4e358d80b90976f9224368866edc00de1e36c3fb89c569b2452bf20a352500f5c4>

31. This refers to the increase in revenues and sales that can be directly attributed to advertising minus the related advertising expenditure.

32. This methodology does not account for price differences across countries due to the lack of availability of reliable data on cost per impression by country.

33. Alphabet (2019). Form 10-K for fiscal year ended December 31, 2019 - Submission to US SEC.

Available at: <https://www.sec.gov/Archives/edgar/data/1652044/000165204420000008/goog10-k2019.htm>

34. Gupta, S., Pauwels, K., & Kireyev, P. (2015), Do display ads influence search? Attribution and dynamics in online advertising. *International Journal of Research in Marketing*.

35. Alphabet (2019). Form 10-K for fiscal year ended December 31, 2019 - Submission to US SEC.

Available at: <https://www.sec.gov/Archives/edgar/data/1652044/000165204420000008/goog10-k2019.htm>

36. Google DoubleClick (2012). What's trending in display for publishers?.

Available at: <https://www.slideshare.net/RFONNIER/display-business-trends-publisher-edition-google-2012>

GOOGLE PLAY

We estimated the revenue earned by Australian app developers from Google Play based on global consumer spending on Google Play, the share of the spending that is paid out to app developers, and the share of the

spending that goes to Australian app developers.

Table 3 shows the inputs and sources used for estimating the business benefits of Google Play.

TABLE 3: INPUTS AND SOURCES FOR CALCULATING BUSINESS BENEFITS OF GOOGLE PLAY

METRIC	SOURCE
Global consumer spending on Google Play	<ul style="list-style-type: none"> • Sensor Tower (2020)³⁷
Share of the spending that is paid out to app developers	<ul style="list-style-type: none"> • Google (2020)³⁸
Share of the spending that goes to Australian app developers	<ul style="list-style-type: none"> • Caribou Digital (2016)³⁹
Distribution of mobile app revenue between consumer spending and ads	<ul style="list-style-type: none"> • Appota/AdSota (2017)⁴⁰

GOOGLE MAPS

The benefits that Australian businesses derived from Google Maps were estimated by calculating the difference in the value of time saved by businesses using Google Maps relative to a counterfactual scenario where businesses are assumed to have access to GPS technology. We first estimated the value of time saved from using Google Maps based on total kilometres travelled each year by businesses, the proportion of trips that involves the use of Google Maps, the reduction in trip time due to Google Maps, the average trip speed,

and the average hourly wage in Australia. We then estimated the value of time saved using GPS following a similar method, considering the proportion of trips that involves the use of GPS and the reduction in trip time using GPS. This approach did not quantify the avoided vehicle operating costs and externalities associated with travel time and distance savings of Google Maps.

Table 4 shows the inputs and sources used for estimating the business benefits of Google Maps.

37. Sensor Tower (2020), "Consumer Spending in Mobile Apps Grew 17% in 2019 to Exceed AU\$83 Billion Globally".

Available at: <https://sensortower.com/blog/app-revenue-and-downloads-2019>

38. Google (2020). Available at: <https://support.google.com/googleplay/android-developer/answer/112622?hl=en>

39. Caribou Digital (2016), *Winners and Losers in the Global App Economy*.

Available at: <https://www.cariboudigital.net/wp-content/uploads/2016/02/Caribou-Digital-Winners-and-Losers-in-the-Global-App-Economy-2016.pdf>

40. AdSota (2017), *Vietnam Mobile App Advertising and Monetization Report (Q2-2017)*. Available at: https://www.slideshare.net/AdsotaAds/vietnam-mobile-app-advertising-monetization-report?qid=3ab11c21-44c9-4fbb-9cb4-41b57d471f3c&v=&b=&from_search=7

TABLE 4: INPUTS AND SOURCES FOR CALCULATING BUSINESS BENEFITS OF GOOGLE MAPS

ESTIMATION	METRIC	SOURCE
Value of time saved using Google Maps whilst driving (for business trips)	Proportion of online population	<ul style="list-style-type: none"> We Are Social & Hootsuite (2020)⁴¹
	Proportion of online population that use Google Maps	<ul style="list-style-type: none"> AlphaBeta Consumer Survey (2020)
	Proportion of trips that use Google Maps when available	<ul style="list-style-type: none"> Alphabeta (2017)⁴² TNO (2007)⁴³
	Proportion of kilometres reduced through the use of Google Maps	<ul style="list-style-type: none"> TNO (2007)⁴⁴
	Total business kilometres travelled by all vehicles in a year	<ul style="list-style-type: none"> Australian Bureau of Statistics (2019)⁴⁵
	Trip speed	<ul style="list-style-type: none"> Bureau of Transport Statistics (2014)⁴⁶
	Value of time saved per hour (based on average hourly wage)	<ul style="list-style-type: none"> Australian Bureau of Statistics (2020)⁴⁷
Value of time saved under counterfactual (for business trips)	Proportion of cars with GPS devices	<ul style="list-style-type: none"> TNO (2007)⁴⁸
	Proportion of trips that use GPS	<ul style="list-style-type: none"> Alphabeta (2017)⁴⁹
	Proportion of kilometres reduced through the use of GPS	<ul style="list-style-type: none"> TNO (2007)⁵⁰
	Total business kilometres travelled by all vehicles in a year	<ul style="list-style-type: none"> Australian Bureau of Statistics (2019)⁵¹
	Trip speed	<ul style="list-style-type: none"> Bureau of Transport Statistics (2014)⁵²
	Value of time saved per hour (based on average hourly wage)	<ul style="list-style-type: none"> Australian Bureau of Statistics (2020)⁵³

41. We Are Social & Hootsuite (2020), *Digital 2020 – Australia*. Available at: <https://wearesocial.com/au/digital-2020-australia>

42. AlphaBeta (2017), *Google Economic Impact Australia 2015*. Available at: <https://alphabeta.com/our-research/google-economic-impact-australia-2015/>

43. TNO (2007), "Independent research by Dutch research institute"

44. TNO (2007), "Independent research by Dutch research institute"

45. Australian Bureau of Statistics (2019), "Survey of Motor Vehicle Use, Australia".

Available at: <https://www.abs.gov.au/statistics/industry/tourism-and-transport/survey-motor-vehicle-use-australia/latest-release>

46. Bureau of Transport Statistics (2014), *Transport for NSW Annual Report 2014*.

Available at: <https://www.transport.nsw.gov.au/sites/default/files/media/documents/2017/tfnsw-annual-report-2013-2014.pdf>

47. Australian Bureau of Statistics (2020), "Average Weekly Earnings, Australia".

Available at: <https://www.abs.gov.au/statistics/labour/earnings-and-work-hours/average-weekly-earnings-australia/latest-release>

48. TNO (2007), "Independent research by Dutch research institute"

49. AlphaBeta (2017), *Google Economic Impact Australia 2015*. Available at: <https://alphabeta.com/our-research/google-economic-impact-australia-2015/>

50. TNO (2007), "Independent research by Dutch research institute"

51. Australian Bureau of Statistics (2019), "Survey of Motor Vehicle Use, Australia".

Available at: <https://www.abs.gov.au/statistics/industry/tourism-and-transport/survey-motor-vehicle-use-australia/latest-release>

52. Bureau of Transport Statistics (2014), *Transport for NSW Annual Report 2014*.

Available at: <https://www.transport.nsw.gov.au/sites/default/files/media/documents/2017/tfnsw-annual-report-2013-2014.pdf>

53. Australian Bureau of Statistics (2020), "Average Weekly Earnings, Australia".

Available at: <https://www.abs.gov.au/statistics/labour/earnings-and-work-hours/average-weekly-earnings-australia/latest-release>

GOOGLE SEARCH FOR EMPLOYEES

Google Search supports Australian businesses in the form of time savings from employees for work related tasks. To calculate the savings businesses experience, we estimated the proportion of Australian employees that value and regularly use Google Search in their employment, the value of time saved per search

conducted and the number of searches per employee.

Table 5 shows the inputs and sources used for estimating the business benefits of Google Search in terms of time savings for employees.

TABLE 5: INPUTS AND SOURCES FOR CALCULATING BUSINESS BENEFITS OF GOOGLE SEARCH

METRIC	SOURCE
Number of employees in Australia	<ul style="list-style-type: none"> Australian Bureau of Statistics (2020)⁵⁴
Number of searches per employee	<ul style="list-style-type: none"> AlphaBeta Consumer Survey (2020)
Google Search's market share	<ul style="list-style-type: none"> StatCounter (2020)⁵⁵
Proportion of employees that use Google Search at least once a day	<ul style="list-style-type: none"> Public First (2018)⁵⁶
Proportion of employees that value Google Search	<ul style="list-style-type: none"> Public First (2018)⁵⁷
Estimated time saved per search	<ul style="list-style-type: none"> Varian (2014)⁵⁸ Chen et al. (2014)⁵⁹
Value of time saved per hour	<ul style="list-style-type: none"> Australian Bureau of Statistics (2020)⁶⁰

BREAKDOWN OF BUSINESS BENEFITS BY STATE AND TERRITORY

We estimated the breakdown of Google's business benefits by state and territory through various metrics. These metrics provided very similar approximations for each state's share of benefits, however some carry more weight for states that have a larger share of output or number of businesses. To minimise the weighting of such

metrics, we took an average of the metrics listed in the table below.

Table 6 shows the inputs and sources used for calculating the breakdown of business benefits by state and territory.

54. Australian Bureau of Statistics (2020), "Labour Force, Australia".

Available at: <https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/latest-release#key-statistics>

55. StatCounter (2020), "Search engine market share Australia". Available at: <https://gs.statcounter.com/search-engine-market-share/all/australia>

56. Public First (2018), "Google's impact in the UK: At Home, At School, At Work".

Available at: <http://www.publicfirst.co.uk/wp-content/uploads/2018/10/GoogleImpact2018.pdf>

57. Public First (2018), "Google's impact in the UK: At Home, At School, At Work".

Available at: <http://www.publicfirst.co.uk/wp-content/uploads/2018/10/GoogleImpact2018.pdf>

58. Hal Varian (2014), "Economic value of Google" (Presentation).

Available at: <http://cdn.oreillystatic.com/en/assets/1/event/57/The%20Economic%20Impact%20of%20Google%20Presentation.pdf>

59. Chen, Y., YoungJoo Jeon, G., & Kim, Y.-M. (2014), "A day without a search engine: an experimental study of online and offline searches". *Experimental Economics*, Vol 17, Issue 4, pp 512-536.

60. Australian Bureau of Statistics (2020), "Average Weekly Earnings, Australia".

Available at: <https://www.abs.gov.au/statistics/labour/earnings-and-work-hours/average-weekly-earnings-australia/latest-release>



BREAKDOWN OF BUSINESS BENEFITS BY STATE AND TERRITORY

We estimated the breakdown of Google's business benefits by state and territory through various metrics. These metrics provided very similar approximations for each state's share of benefits, however some carry more weight for states that have a larger share of output or number of businesses. To minimise the weighting of such

metrics, we took an average of the metrics listed in the table below.

Table 6 shows the inputs and sources used for calculating the breakdown of business benefits by state and territory.

TABLE 6: INPUTS AND SOURCES FOR CALCULATING THE BREAKDOWN OF BUSINESS BENEFITS AND JOB IMPACT BY STATE AND TERRITORY

METRIC	SOURCE
Share of Gross Domestic Product (GDP) for each state	<ul style="list-style-type: none"> Australian Bureau of Statistics (2019)⁶¹
Share of state final demand for each state	<ul style="list-style-type: none"> Australian Bureau of Statistics (2020)⁶²
Share of businesses in each state	<ul style="list-style-type: none"> Australian Bureau of Statistics (2020)⁶³
Share of population for each state	<ul style="list-style-type: none"> Australian Bureau of Statistics (2020)⁶⁴

61. Australian Bureau of Statistics (2019), "Australian National Accounts: State Accounts".

Available at: <https://www.abs.gov.au/statistics/economy/national-accounts/australian-national-accounts-state-accounts/latest-release#analysis-of-results>

62. Australian Bureau of Statistics (2020), "Australian National Accounts: National Income, Expenditure and Product".

Available at: <https://www.abs.gov.au/statistics/economy/national-accounts/australian-national-accounts-national-income-expenditure-and-product/latest-release>

63. Australian Bureau of Statistics (2020), "Counts of Australian Businesses, including Entries and Exits".

Available at: <https://www.abs.gov.au/statistics/economy/business-indicators/counts-australian-businesses-including-entries-and-exits/latest-release>

64. Australian Bureau of Statistics (2020), "National, state and territory population".

Available at: <https://www.abs.gov.au/statistics/people/population/national-state-and-territory-population/latest-release>

BREAKDOWN OF BUSINESS BENEFITS BY BUSINESS SIZE

We estimated the breakdown of Google's business benefits by business size using the relative size of their internet income. Business size is determined based on the number of employees (i.e. micro businesses are those with less than 5 employees, small businesses are those with 5-19 employees, medium businesses are those with

20-200 employees, and large businesses are those with more than 200 employees).

Table 7 shows the inputs and sources used for calculating the breakdown of business benefits by business size.

TABLE 7: INPUTS AND SOURCES FOR CALCULATING THE BREAKDOWN OF BUSINESS BENEFITS BY BUSINESS SIZE

METRIC	SOURCE
Total income by business size	<ul style="list-style-type: none"> Australian Bureau of Statistics (2020)⁶⁵
Internet income as % of total income by business size	<ul style="list-style-type: none"> Australian Bureau of Statistics (2020)⁶⁶

BREAKDOWN OF BUSINESS BENEFITS BY SECTOR

The breakdown of business benefits by sector was calculated based on the share of businesses using different types of digital products or services. The list

of metrics used to break down the benefits of different Google's applications and services is provided in Table 8.

TABLE 8: INPUTS AND SOURCES FOR CALCULATING THE BREAKDOWN OF BUSINESS BENEFITS BY SECTOR

ESTIMATION	METRIC	SOURCE
Breakdown of business benefits for Google Search and Ads and AdSense	Businesses using social media to develop company image or market products from each sector as % of total	<ul style="list-style-type: none"> Australian Bureau of Statistics (2019)⁶⁷
Breakdown of business benefits for Google Maps (time savings)	Businesses with a mobile wireless broadband connection from each sector as % of total	<ul style="list-style-type: none"> Australian Bureau of Statistics (2020)⁶⁸
Breakdown of business benefits for Google Search (time savings)	Businesses with internet access from each sector as % of total	<ul style="list-style-type: none"> Australian Bureau of Statistics (2020)⁶⁹

65. Australian Bureau of Statistics (2020), "Characteristics of Australian Business".

Available at: <https://www.abs.gov.au/statistics/industry/technology-and-innovation/characteristics-australian-business/latest-release>

66. Australian Bureau of Statistics (2020), "Characteristics of Australian Business".

Available at: <https://www.abs.gov.au/statistics/industry/technology-and-innovation/characteristics-australian-business/latest-release>

67. Australian Bureau of Statistics (2019), "Characteristics of IT in Australian Businesses".

Available at: http://stat.data.abs.gov.au/Index.aspx?DataSetCode=ABS_IT_SUPPORT

68. Australian Bureau of Statistics (2020), "Characteristics of IT in Australian Businesses".

Available at: <https://www.abs.gov.au/statistics/industry/technology-and-innovation/characteristics-australian-business/latest-release#:~:text=The%202018%2D19%20Business%20Characteristics,performance%20indicators%2C%20barriers%20and%20skills>.

69. Australian Bureau of Statistics (2020), "Characteristics of IT in Australian Businesses".

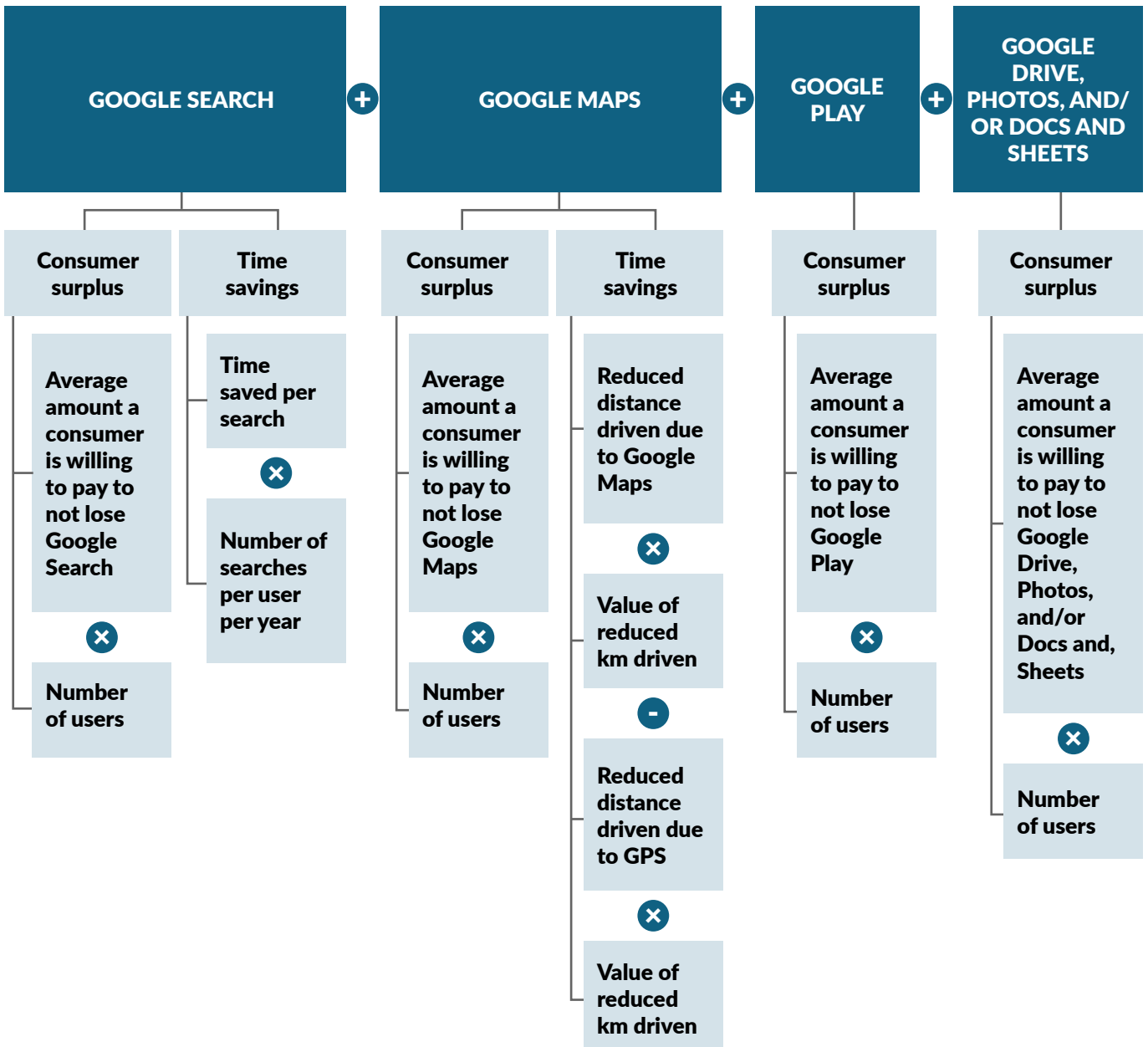
Available at: <https://www.abs.gov.au/statistics/industry/technology-and-innovation/characteristics-australian-business/latest-release#:~:text=The%202018%2D19%20Business%20Characteristics,performance%20indicators%2C%20barriers%20and%20skills>.

CONSUMER BENEFITS

The consumer benefits supported by Google are challenging to measure and calculate because individuals typically do not pay for the services. In the absence of price indicators, we adopted the economic “willingness to pay” principle to estimate the value of consumer benefits by asking individuals how much they value specific services (through the consumer survey) also

known as consumer surplus. We also calculated the time savings accrued to consumers from their use of Google Maps (which optimises their journeys) and Google Search (which increases the efficiency of information gathering). Exhibit A2 summarises the methodology used for sizing consumer surplus and time savings of relevant products.

EXHIBIT A2: METHODOLOGY FOR SIZING CONSUMER BENEFITS FROM GOOGLE



GOOGLE SEARCH

We estimated the benefits of Google Search to consumers using two metrics: consumer surplus and time savings.

To calculate the consumer surplus for Google Search, we multiplied the number of Google Search users with the average willingness to pay obtained from the consumer survey.

To calculate time savings, we applied time saving estimates from an experiment that measured the time taken to conduct a search online versus a search at the library.⁷⁰ This study found that a search that takes 21 minutes in the library takes 7 minutes online. After accounting for the fact that people now ask more

questions due to the ease of online search, we estimated the time saved across Australia by using Google Search.

The number of Google Search users in the country who have made use of Google Search for self-enrichment purposes such as learning new skills or acquiring knowledge in a new topic was also estimated using the consumer survey. To estimate these figures, the share of respondents who stated that Google Search is their most frequently used search engine and who have made use of it for self-enrichment purposes was multiplied by the number of Google Search users in the country.

Table 9 shows the inputs and sources used for calculating the consumer benefits of Google Search.

TABLE 9: INPUTS AND SOURCES FOR CALCULATING CONSUMER BENEFITS OF GOOGLE SEARCH

ESTIMATION	METRIC	SOURCE
Consumer surplus	Amount that consumers value product per year (WTP)	<ul style="list-style-type: none"> AlphaBeta Consumer Survey (2020)
	Online Population (OP)	<ul style="list-style-type: none"> We Are Social & Hootsuite (2020)⁷¹
	Google Search users as % of OP	<ul style="list-style-type: none"> AlphaBeta Consumer Survey (2020)
Time saved per user	Time saved per search	<ul style="list-style-type: none"> Varian (2014)⁷² Chen et al. (2014)⁷³
	Average daily searches per user	<ul style="list-style-type: none"> AlphaBeta Consumer Survey (2020)

70. Chen et al. (2014) A day without a search engine: an experimental study of online and offline searches. *Experimental Economics*, Vol 17, Issue 4, pp 512-536.

71. We Are Social & Hootsuite (2020), *Digital 2020 – Australia*. Available at: <https://wearesocial.com/au/digital-2020-australia>

72. Hal Varian (2014), "Economic value of Google" (Presentation).

Available at: <http://cdn.oreillystatic.com/en/assets/1/event/57/The%20Economic%20Impact%20of%20Google%20Presentation.pdf>

73. Chen, Y., YoungJoo Jeon, G., & Kim, Y.-M. (2014), "A day without a search engine: an experimental study of online and offline searches". *Experimental Economics*, Vol 17, Issue 4, pp 512-536.

GOOGLE MAPS

We sized the benefits of Google Maps to consumers using willingness to pay, where consumers were asked to value their favourite online Google Maps service. We also estimated the time saved by using Google Maps for personal trips.

To calculate the consumer surplus for Google Maps, we multiplied the number of Google Maps users with the average willingness to pay obtained from the consumer survey.

The time saved per user by using Google Maps was estimated by calculating the difference in kilometres driven by consumers using Google Maps relative to a counterfactual where consumers are assumed to have access to GPS technology.

Table 10 shows the inputs and sources used for calculating the consumer benefits of Google Maps.

TABLE 10: INPUTS AND SOURCES FOR CALCULATING CONSUMER BENEFITS OF GOOGLE MAPS

ESTIMATION	METRIC	SOURCE
Consumer surplus	Amount that consumers value product per year (WTP)	• AlphaBeta Consumer Survey (2020)
	Online Population (OP)	• We Are Social & Hootsuite (2020) ⁷⁴
	Google Maps users as % of OP	• AlphaBeta Consumer Survey (2020)
Value of time saved using Google Maps whilst driving (for personal trips)	Proportion of online population	• We Are Social & Hootsuite (2020) ⁷⁵
	Proportion of online population that use Google Maps	• AlphaBeta Consumer Survey (2020)
	Proportion of trips that use Google Maps when available	• AlphaBeta (2017) ⁷⁶ • TNO (2007) ⁷⁷
	Proportion of kilometres reduced through the use of Google Maps	• TNO (2007) ⁷⁸
	Total kilometres travelled by all vehicles in a year (personal trips)	• Australian Bureau of Statistics (2019) ⁷⁹
	Trip speed	• Bureau of Transport Statistics (2014) ⁸⁰
	Value of time saved per hour	• Australian Bureau of Statistics (2020) ⁸¹

74. We Are Social & Hootsuite (2020), *Digital 2020 – Australia*. Available at: <https://wearesocial.com/au/digital-2020-australia>

75. We Are Social & Hootsuite (2020), *Digital 2020 – Australia*. Available at: <https://wearesocial.com/au/digital-2020-australia>

76. AlphaBeta (2017), *Google Economic Impact Australia 2015*. Available at: <https://alphabeta.com/our-research/google-economic-impact-australia-2015/>

77. TNO (2007), "Independent research by Dutch research institute"

78. TNO (2007), "Independent research by Dutch research institute"

79. Australian Bureau of Statistics (2019), "Survey of Motor Vehicle Use, Australia".

Available at: <https://www.abs.gov.au/statistics/industry/tourism-and-transport/survey-motor-vehicle-use-australia/latest-release>

80. Bureau of Transport Statistics (2014), *Transport for NSW Annual Report 2014*.

Available at: <https://www.transport.nsw.gov.au/sites/default/files/media/documents/2017/tfnsw-annual-report-2013-2014.pdf>

81. Australian Bureau of Statistics (2020), "Average Weekly Earnings, Australia".

Available at: <https://www.abs.gov.au/statistics/labour/earnings-and-work-hours/average-weekly-earnings-australia/latest-release>


TABLE 10 (CONT'D): INPUTS AND SOURCES FOR CALCULATING CONSUMER BENEFITS OF GOOGLE MAPS

ESTIMATION	METRIC	SOURCE
Value of time saved under counterfactual (for personal trips)	Proportion of cars with GPS devices	• TNO (2007) ⁸²
	Proportion of trips that use GPS	• AlphaBeta (2017) ⁸³
	Proportion of kilometres reduced through the use of GPS	• TNO (2007) ⁸⁴

GOOGLE PLAY

We calculated the benefits of Google Play to consumers using willingness to pay, where consumers were asked to value their favourite online distribution platform for digital products. Results from the survey of Australian

online population were used.

Table 11 shows the inputs and sources used for calculating the consumer benefits of Google Play.

TABLE 11: INPUTS AND SOURCES FOR CALCULATING CONSUMER BENEFITS OF GOOGLE PLAY

ESTIMATION	METRIC	SOURCE
Consumer surplus	Amount that consumers value product per year (WTP)	• AlphaBeta Consumer Survey (2020)
	Online population (OP)	• We Are Social & Hootsuite (2020) ⁸⁵
	Google Play users as % of OP	• AlphaBeta Consumer Survey (2020)

82. TNO (2007), "Independent research by Dutch research institute"

83. AlphaBeta (2017), Google Economic Impact Australia 2015. Available at: <https://alphabeta.com/our-research/google-economic-impact-australia-2015/>

84. TNO (2007), "Independent research by Dutch research institute"

85. We Are Social & Hootsuite (2020), Digital 2020 – Australia. Available at: <https://wearesocial.com/au/digital-2020-australia>

GOOGLE DRIVE, PHOTOS, DOCS, AND SHEETS

We calculated the benefits of Google Drive, Photos, Docs, and Sheets to consumers using willingness to pay, where consumers were asked to value their favourite online cloud-based file storage and document collaboration service. Results from the survey of

Australian online population were used.

Table 12 shows the inputs and sources used for calculating the consumer benefits of Google Drive, Photos, Docs, and Sheets.

TABLE 12: INPUTS AND SOURCES FOR CALCULATING CONSUMER BENEFITS OF GOOGLE DRIVE, PHOTOS, DOCS, AND SHEETS

ESTIMATION	METRIC	SOURCE
Consumer surplus	Amount that consumers value product per year (WTP)	• AlphaBeta Consumer Survey (2020)
	Online population (OP)	• We Are Social & Hootsuite (2020) ⁸⁶
	Users of Google Drive, Photos, Docs, and Sheets as % of OP	• AlphaBeta Consumer Survey (2020)

BREAKDOWN OF CONSUMER BENEFITS BY STATE AND TERRITORY

We estimated the breakdown of Google's consumer benefits by state and territory through two different metrics, and took an average of these metrics.

Table 13 shows the inputs and sources used for calculating the breakdown of consumer benefits by state and territory.

TABLE 13: INPUTS AND SOURCES FOR CALCULATING THE BREAKDOWN OF CONSUMER BENEFITS BY STATE AND TERRITORY

METRIC	SOURCE
Share of state final demand for each state	• Australian Bureau of Statistics (2020) ⁸⁷
Share of population for each state	• Australian Bureau of Statistics (2020) ⁸⁸

86. We Are Social & Hootsuite (2020), *Digital 2020 – Australia*. Available at: <https://wearesocial.com/au/digital-2020-australia>

87. Australian Bureau of Statistics (2020), "Australian National Accounts: National Income, Expenditure and Product".

Available at: <https://www.abs.gov.au/statistics/economy/national-accounts/australian-national-accounts-national-income-expenditure-and-product/latest-release>

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