

Value of services over the nbn[®] network

Released February 2023

Commissioned by



Research by



Contents

01	Executive Summary	p 5
02	Services over nbn network are critical to the lives of many Australians	p 6
03	Services over the nbn network save users time and money, and boost income	p 11
04	Services over the nbn network create new opportunities for users to enrich their lives	p 20
05	Appendix: Sources of insight	p 27



Australians primarily connect to the internet at home through services over the nbn network

74% Australia adults are connected to services over the **nbn**



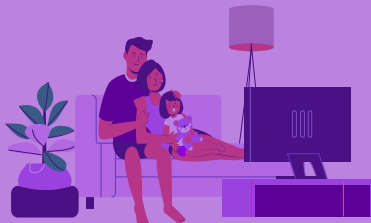
Since January 2020, we have seen a



20% increase in average weekly downloads



34% increase in average weekly uploads



Services over the nbn network help users to save time, save money and boost income

Users save **120** hours per year by doing activities over the **nbn** network

Users save **\$2,580** per year in avoided costs such as travel by doing activities over the **nbn** network

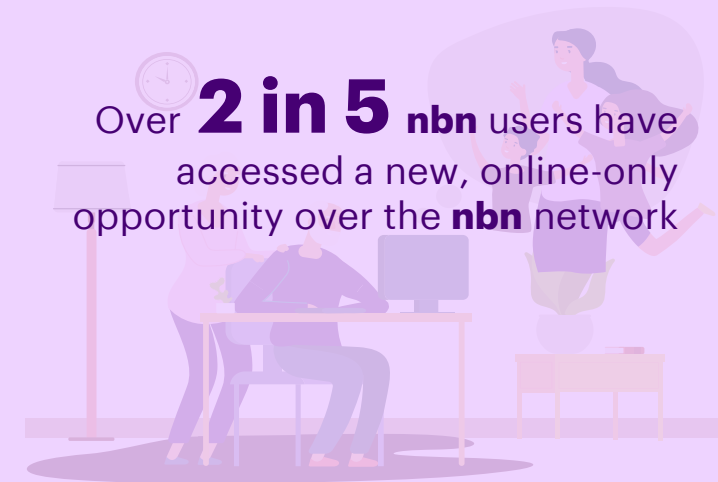
Nearly **1 in 5** **nbn** users boosted their income by working remotely over the **nbn** network

Australians rely on services over the nbn network to enrich their at-home activities



For those who study or access entertainment at home, over **9 in 10** rely on services over the **nbn** network to do these activities

Over **2 in 5** **nbn** users have accessed a new, online-only opportunity over the **nbn** network



01

Executive Summary



Executive summary

The **nbn** network is critical to the lives of many Australians

The **nbn** network is the main way Australians access the internet at home. Most Australians are connected to the **nbn** network, with more than 7 in 10 Australians being connected to a service over the **nbn** network at home.

The **nbn** network is the preferred way for Australians to connect to the internet at home,¹ as it is better for data intensive activities like streaming videos, working from home and online gaming.

We are placing increasing value on the **nbn** network. Our use of services over the **nbn** network is well above pre-pandemic levels, with average downloads up 20% since January 2020.

Australians consider services over the **nbn** network to be an important tool in their everyday lives. Even under financial pressure, we are unlikely to compromise on our **nbn** home internet plan.

Services over the **nbn** network help users to save time, save money and boost income

Services over the **nbn** network support users to do activities online instead of in-person, such as remote work and study, online shopping and banking and accessing entertainment and government services.

Online activities make our lives more convenient. The average **nbn** user saves 120 hours a year, through avoided travel time and efficiency gains (e.g. avoided queue time).

By supporting online activities, services over the **nbn** network reduce user car trips and associated emissions. The average **nbn** user is estimated to avoid over 2,000 car vehicle-km each year by doing activities online.

Online activities save us money. The average **nbn** user saves \$2,580 a year, through avoided travel costs, savings from online alternatives to in-person activities, and avoided lunch and clothing costs from remote work.

Services over the **nbn** network supports 1 in 5 users to boost their income through remote work.

Increasingly, services over the **nbn** network create new opportunities for users to enrich their lives

Over time, Australians have become increasingly connected to the internet and are using more data than ever.

This is because internet platforms and applications have grown in richness and capability. Australians now use the internet in many ways to do what they love – for example, we use AR and the metaverse to connect with family and friends.

Many users rely on services over the **nbn** network to do activities which enrich their lives. For example, of users who spend time on self-development at home, over 9 in 10 rely on services over the **nbn** network to do so. Without services over the **nbn** network, more than half of these users would find self-development to be less enjoyable or convenient.

Services over the **nbn** network also support 2 in 5 users to access new opportunities online, such as TedTalks and online gaming.



02

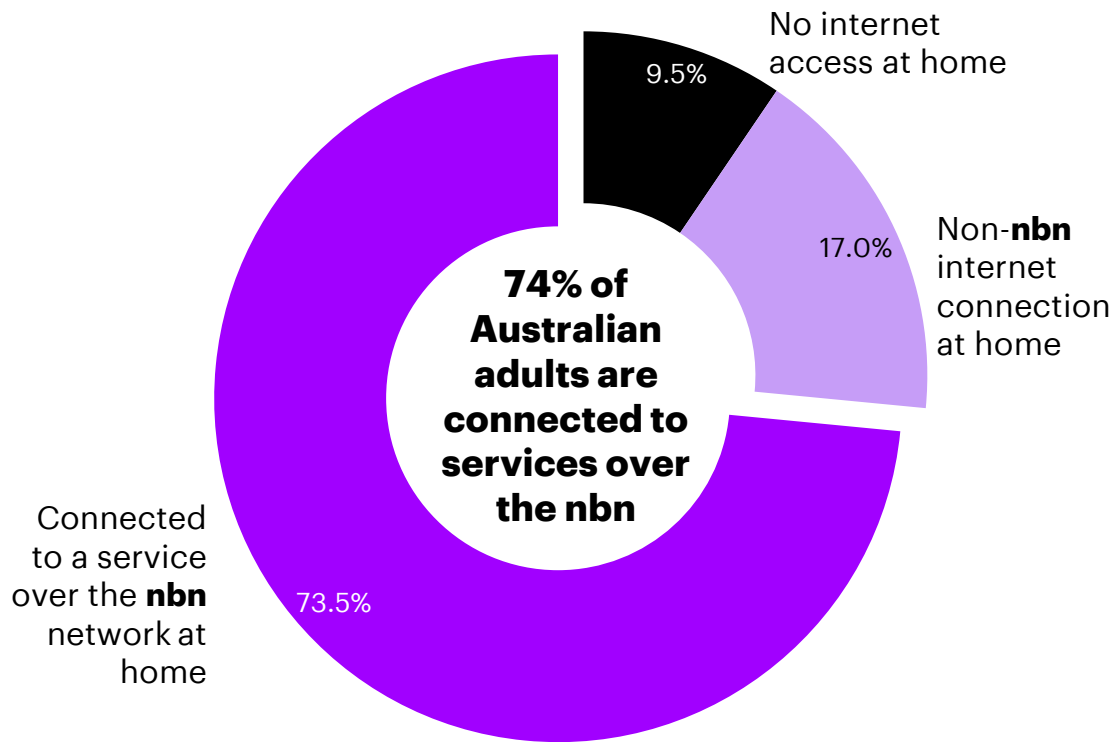
**Services over nbn
network are critical
to the lives of many
Australians**



The nbn network is the main way Australians connect to the internet at home because it is preferred for data intensive activities

90% of Australian adults say that they have a home internet connection, and nearly three quarters of these have an nbn connection¹

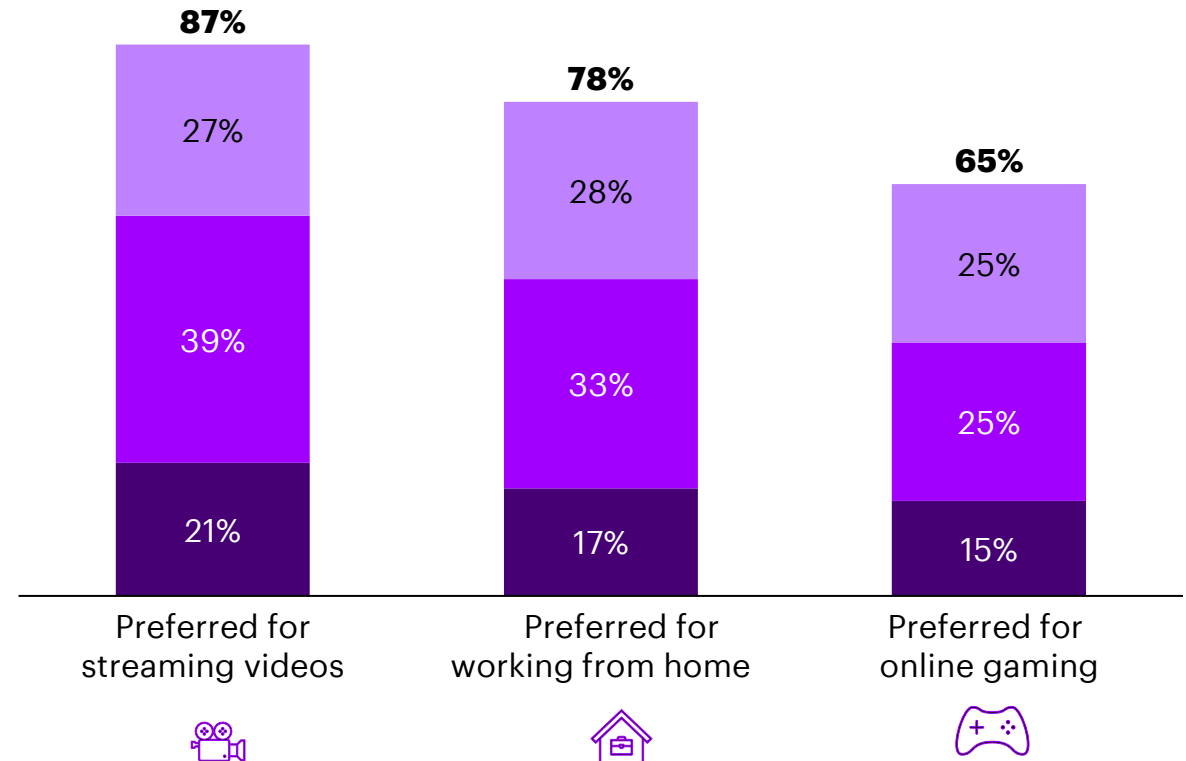
% Australian adults



...because it is better than mobile alternatives for streaming videos, working from home and online gaming

% survey respondents, Survey question: "I have an nbn powered internet plan at home because it is..."

Legend: Somewhat Agree (light blue), Agree (medium blue), Strongly Agree (dark blue)

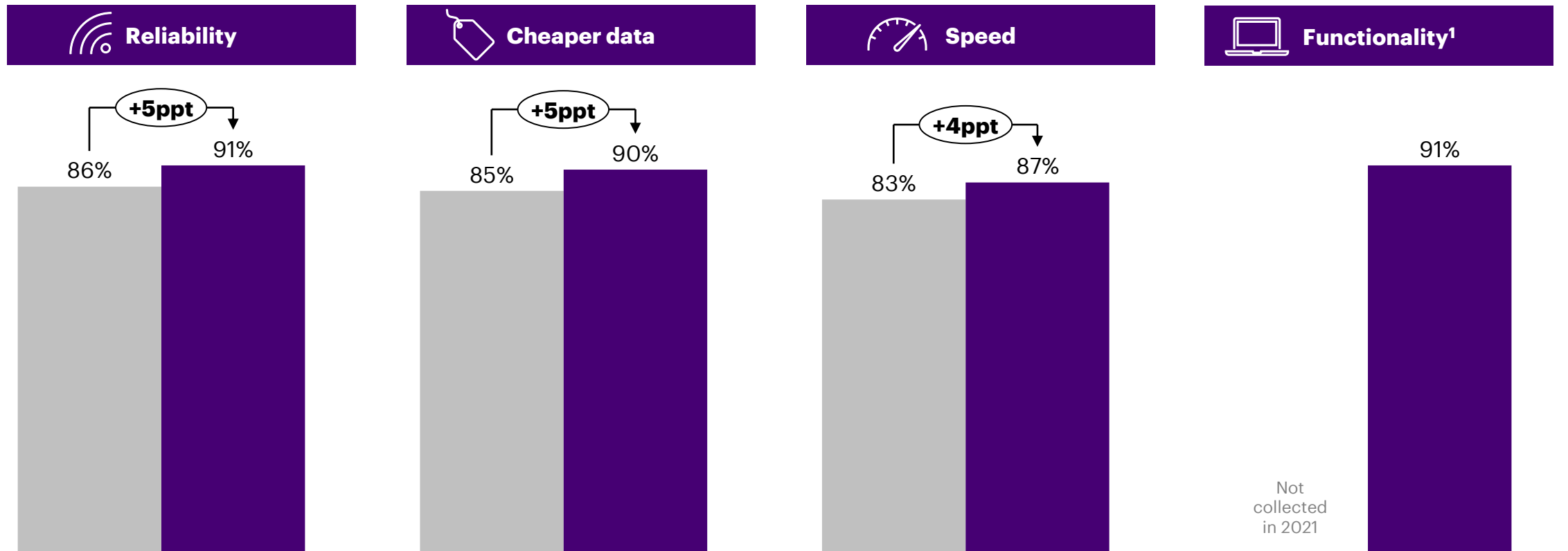


As we use the internet for more data-intensive activities, nbn users continue to prefer services over the nbn network over mobile alternatives

9 in 10 users prefer services over the nbn network for functionality, reliability, cheaper data and speed

2021 2022

% respondents; Survey question: To what extent do you agree with the following statements? "I have an nbn powered plan at home because it is better in terms of..." A: Strongly agree, agree, somewhat agree"



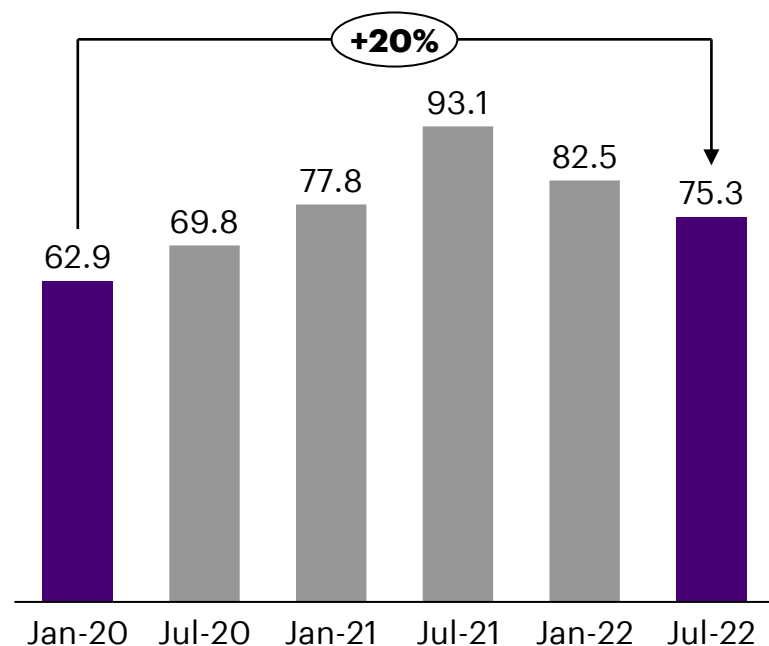
The use of services over the nbn network is well above pre-pandemic levels, with average downloads up 20% since January 2020

Average downloads and uploads are up 20% and 34% respectively since the onset of the pandemic

Average weekly uploads and downloads per service, GBs



Weekly downloads

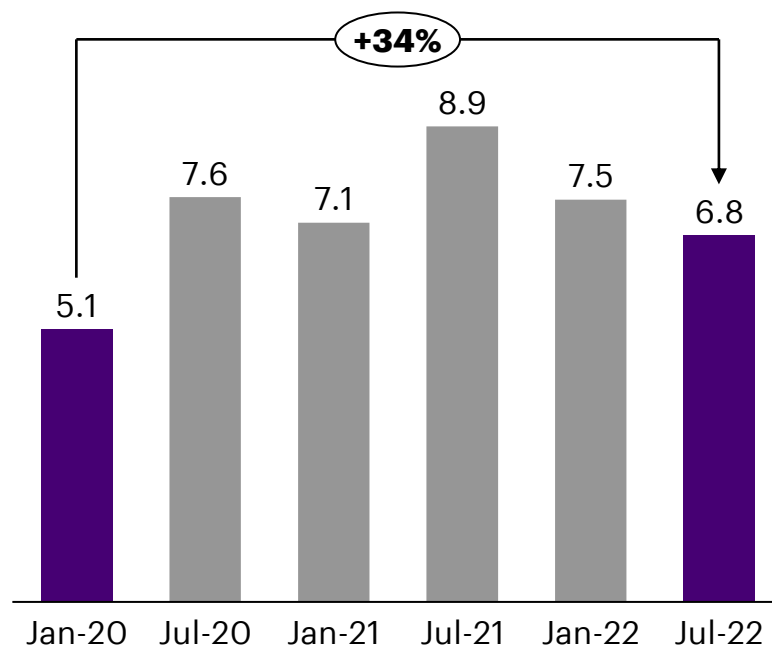


Pre-pandemic

Post-pandemic



Weekly uploads



Pre-pandemic

Post-pandemic

Australians' use of services over the **nbn** network peaked during 2021, as strict lockdowns compelled many to work, study and socialise online.

However, usage of services over the **nbn** network remains well above pre-pandemic levels.

Between January 2020 (pre-pandemic) and July 2022 (post-pandemic), average weekly downloads have increased by 20%. Average weekly uploads have increased by 34% across the same period.

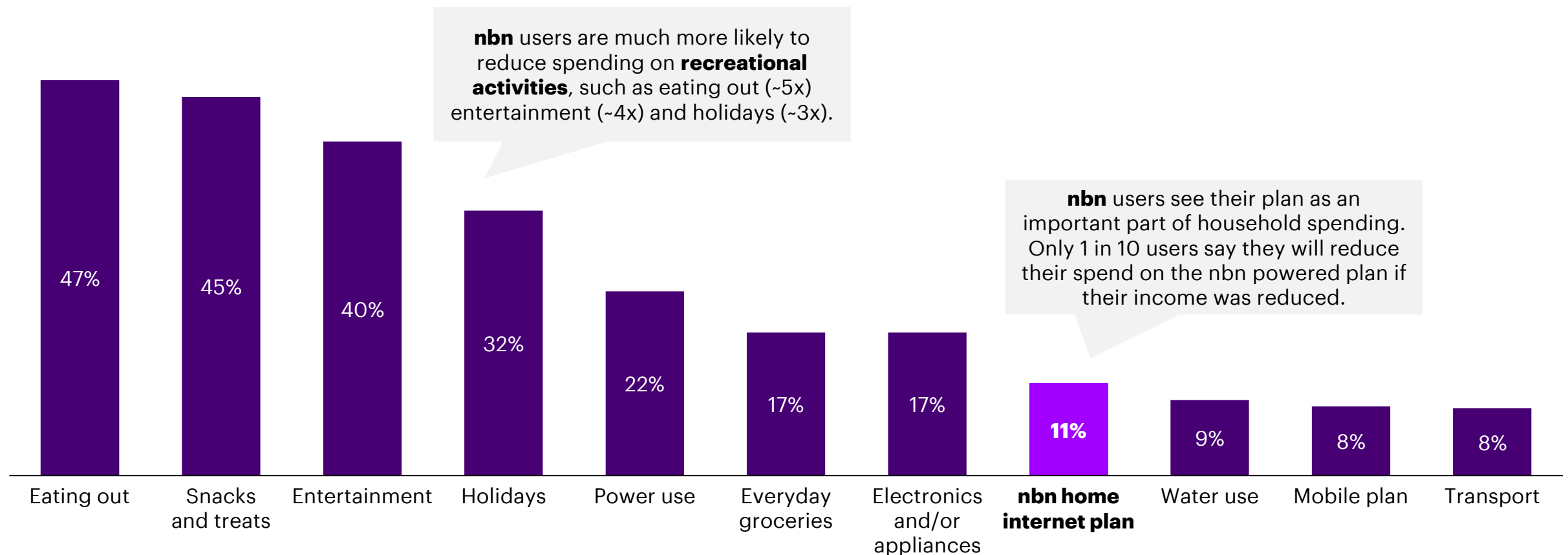
Average weekly downloads and uploads were higher in January 2022 than in July 2022, when the pandemic was ongoing. However, data usage remains elevated in July 2022 – even since lockdown restrictions were lifted.

As evident by the increased levels of uploads and downloads sustained over the last two years, the **nbn** network has become even more valuable to Australians than it once was.

Users consider services over the nbn network to be important and are unlikely to compromise on their nbn home internet plan

Under financial pressure, nbn users are more likely to prioritise their internet plans and reduce spending on other items

% of respondents;¹ Survey question: If your household income was reduced by \$1,000/month, how would you most likely reduce spending? (Select 3)



03

Services over the nbn network save users time and money, and boost income

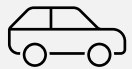


Services over the nbn network help users to save time, save money and boost income

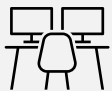


SAVE TIME

The average **nbn** user **saves 120 hours** per year by using the **nbn** network



Avoided travel time
80 hours per year
= **This equates to over 2,000 avoided vehicle-km per user per year**



Productivity benefits from working from home
15 hours per year



Efficiency gains from doing a task online instead of in-person
25 hours per year



SAVE MONEY

The average **nbn** user **saves \$2,580** per year by using the **nbn** network



Avoided travel costs
\$1,800 per year



Savings from cheaper, online alternatives to in-person activities
\$530 per year



Avoided lunch and clothing costs from working from home
\$250 per year



BOOST INCOME

Nearly **1 in 5 nbn users** have boosted their income by working remotely over the **nbn** network



Additional paid hours of work
11% of users



Access a higher paying job
5% of users



Started a new business
7% of users
81% of work-from-home small business owners rely on nbn-connected digital tools

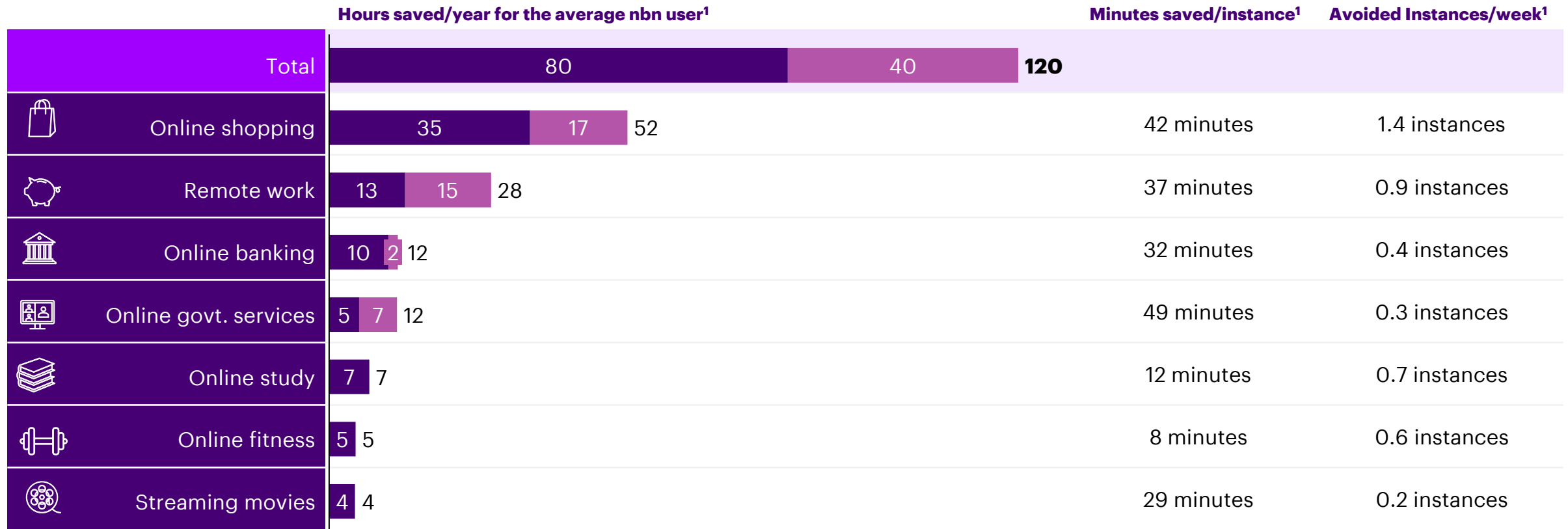


The average nbn user saves 120 hours a year by doing activities over the nbn network instead of in-person

Key time saving activities are online shopping and remote work

Average hours saved per year by doing activity online over the nbn network (compared to in-person), minutes saved per instance and instances per week

Time efficiencies (light purple) Avoided travel (dark purple)



Notes: 1. Average hours saved per year is calculated by deriving average minutes saved per instance and average instances per year from the Accenture/nbn consumer survey. This is expressed per nbn user surveyed and is based on survey responses, based on 52 weeks a year. It is based on survey respondents reported frequency of doing online alternatives for each activity (for example, online banking compared to banking in person) given they said they would travel by car if they did do this activity in-person instead. When online frequency is likely to be higher than in-person frequency of an activity an upper limit was imposed. This was 7 days/week for work, 5 days/week for shopping, 14 times/week for fitness, 1 trip/fortnight for each of banking and govt. services and 7 trips/week for study and 1 trip/month for going to the movies as an alternative for streaming online. Sources: Accenture/nbn consumer survey, n=2,001; Accenture analysis.

The average nbn user does 6 fewer car trips per week by doing things online, avoiding greenhouse gas emissions

nbn users report they are reducing their motor vehicle-km by doing activities via the nbn network relative to in-person

LHS: Average number of avoided car trips per nbn user surveyed. RHS: Estimated number of avoided vehicle-km per nbn user



Avoided car trips per week per nbn user¹



Avoided motor vehicle-km per nbn user²



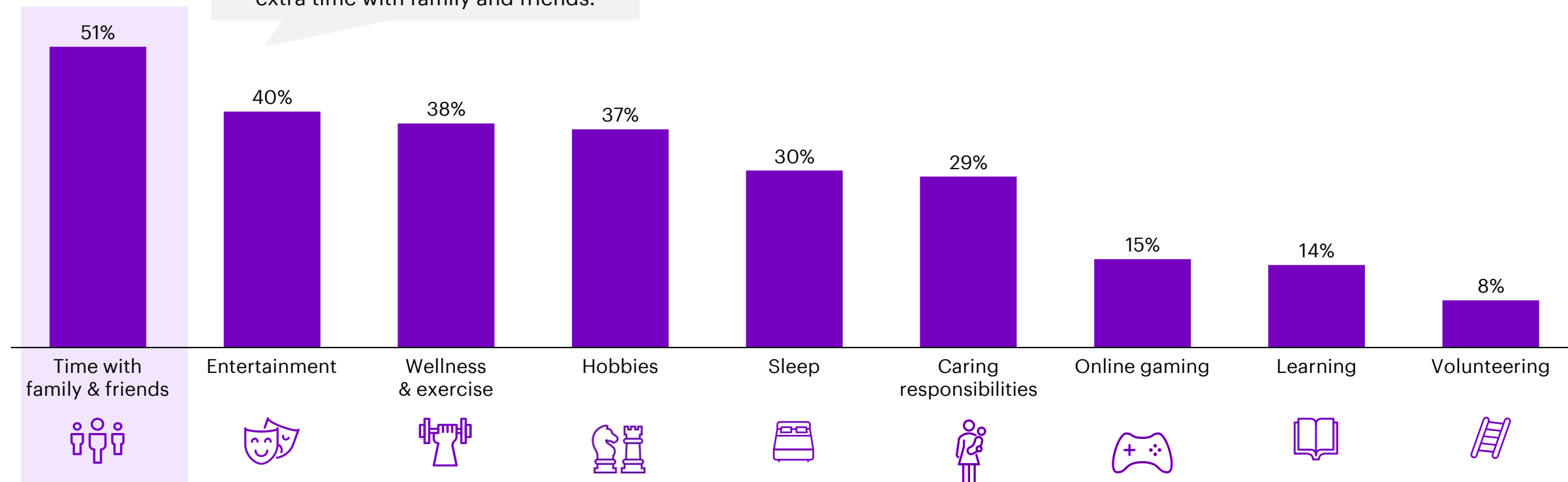
Notes: 1. Based on survey respondents reported frequency of doing online alternatives for each activity (for example, online banking compared to banking in person) given they said they would travel by car if they did do this activity in-person instead. When online frequency is likely to be higher than in-person frequency of an activity an upper limit was imposed. This was 7 days/week for work, 5 days/week for shopping, 14 times/week for fitness, 1 visit/fortnight for each of banking and govt. services, 7 visits/week for study and 1 visit/month for the movies. One visit or instance is assumed to involve 2 car trips (1 trip to get there and 1 trip to get home). 2. Estimated number of km per trip based on ABS 2016, Market Grunt 2019, RBA 2021. 3. National transport commission 2021. Source: consumer survey, n=2,001; Accenture analysis.

Over half of users spend time saved through services over the **nbn** network with friends and family

By saving users time, services over the **nbn** network supports users to spend more time on the activities that matter most

% survey respondents; Survey question: You have stated that the **nbn** network saves you time. What do you do with this time instead? Select all that apply.

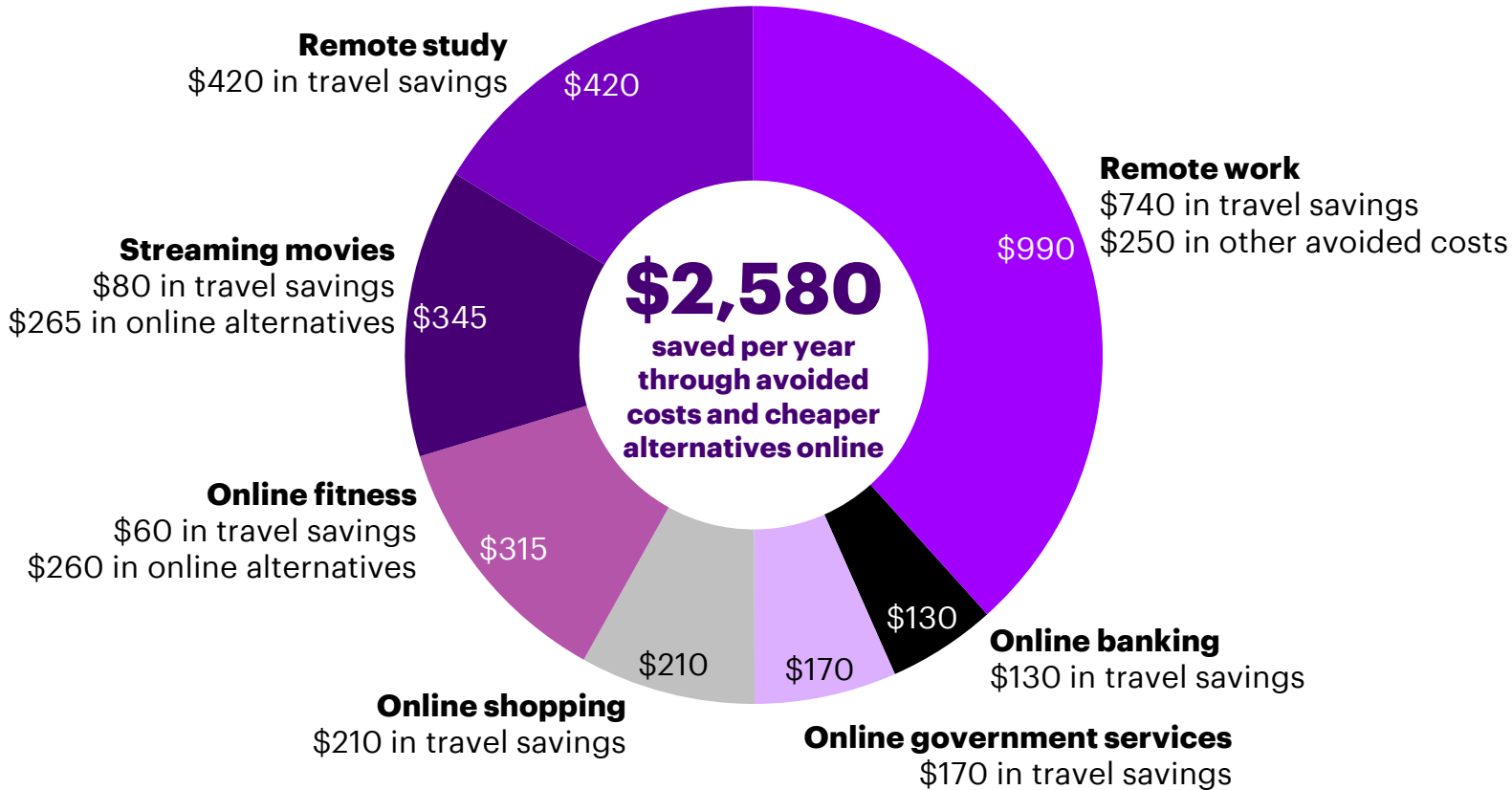
Services over the **nbn** network save users time. Over half of users spend this extra time with family and friends.



The average nbn user saves over \$2,500 a year in avoided costs by doing activities online instead of in-person

The average nbn user saves over \$2,500 per year, largely due to remote work and streaming movies ¹

Average \$ saved through avoided costs per year for a typical nbn user



The average nbn user saves over \$2,500 a year by doing activities online, using services over the nbn network.

Through our survey of over 2,000 nbn users, we identified the number of times a year the average user does an activity online instead of in-person.

Previously, we used this data to estimate how much time the average user saves from avoided travel time and increased efficiency (see page 13).

Here, we use this data to estimate how much money the average user saves each year from:

- **Avoided travel** – based on number and mode of avoided commutes
- **Online alternatives** – based on average cost of a movie ticket and gym visit (for those with gym memberships)
- **Other avoided costs** – based on average spend on lunch while at work and work-specific clothing.

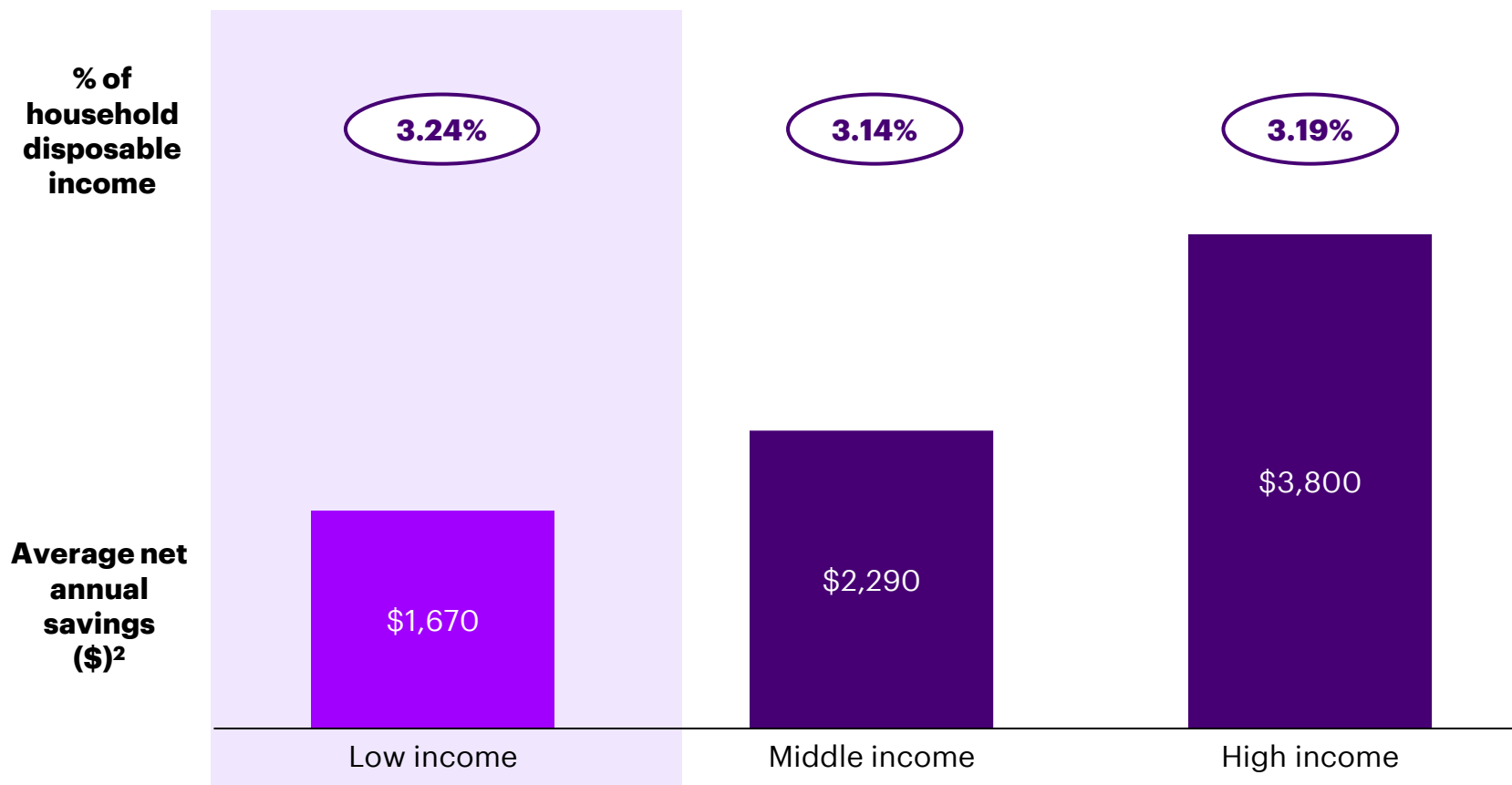
The costs included are not exhaustive. Other costs may include avoided childcare, avoided leave and more.

Notes: Cost savings are calculated by deriving average number of avoided car commutes per week and mode of commute from the Accenture/nbn consumer survey, applying an average distance to activity and calculating average cost based on average car cost per km (72c/km based on the ATO), average public transport fare or average taxi fare. 1. Cost savings are gross cost savings, and do not factor in the cost of service over the nbn network or additional costs associated with the online activity (e.g. higher utility bills, streaming subscriptions). Sources: Accenture/nbn consumer survey, n=2,001; RBA 2021; ABS 2016; Market Grunt 2019; Ibis World 2021; Expedition Australia 2022, Australian Institute of Petroleum 2022; Budget Direct 2022, Finder 2022; Taxi Calculator 2022, Accenture analysis.

Low income **nbn** users save over 3% of their disposable income by doing activities online – the highest proportional saving of all income groups

Low income households save 3.24% of income – the highest proportional saving of all income groups¹

Average annual savings (\$) and % of average annual household disposable income



The annual savings **nbn** users make from doing activities online instead of in-person varies between income groups.

We used survey data matched to the income brackets of respondents to understand how savings from avoided travel, online alternatives and other avoided costs differ across income groups.

Low income users save less than middle and high income users each year (net the average cost of services over the **nbn** network). However, low income users make the highest proportional saving of all income groups.

Low income users save 3.24% of disposable household income, compared to 3.14% for middle income users and 3.19% for high income users.

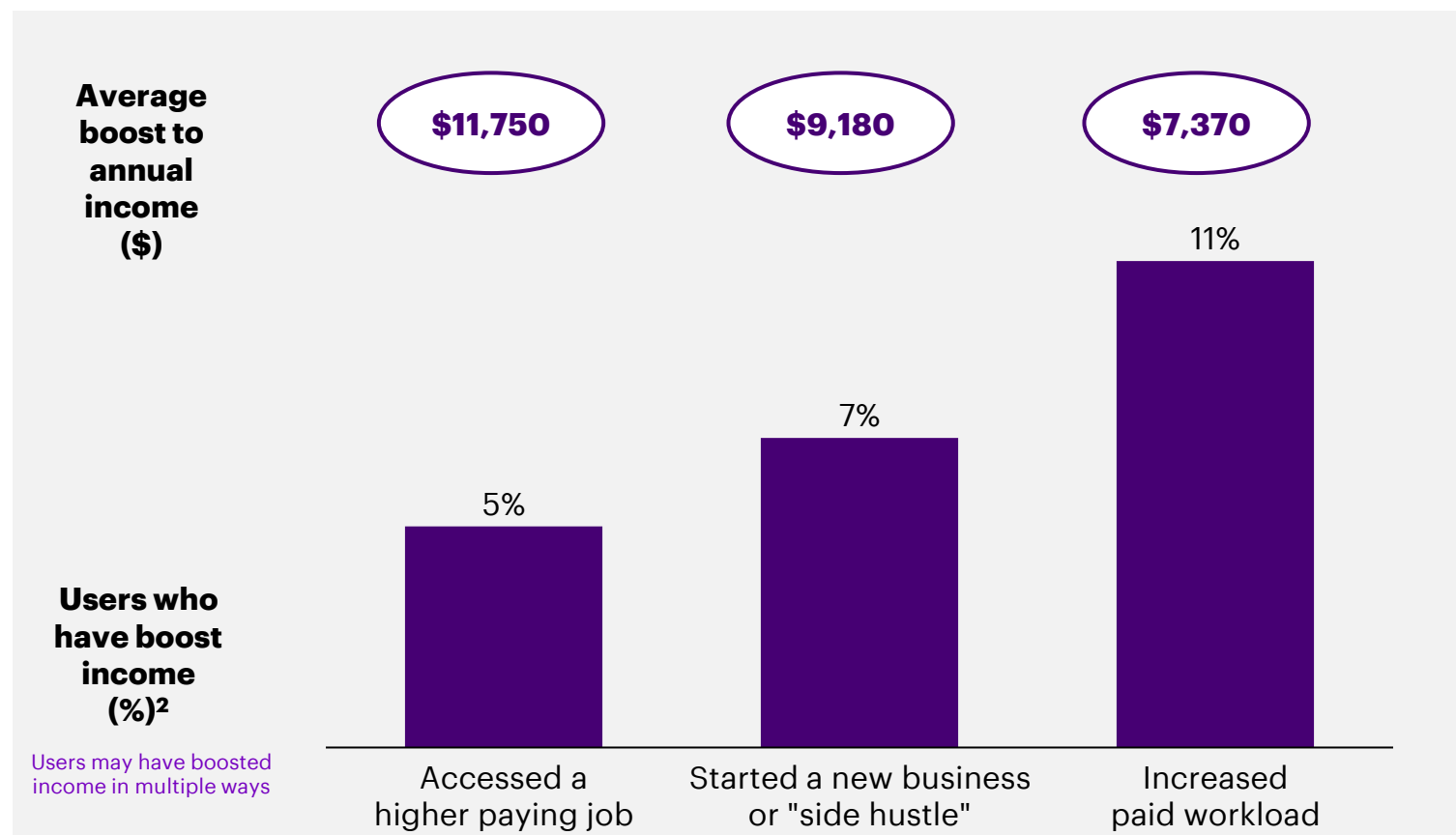
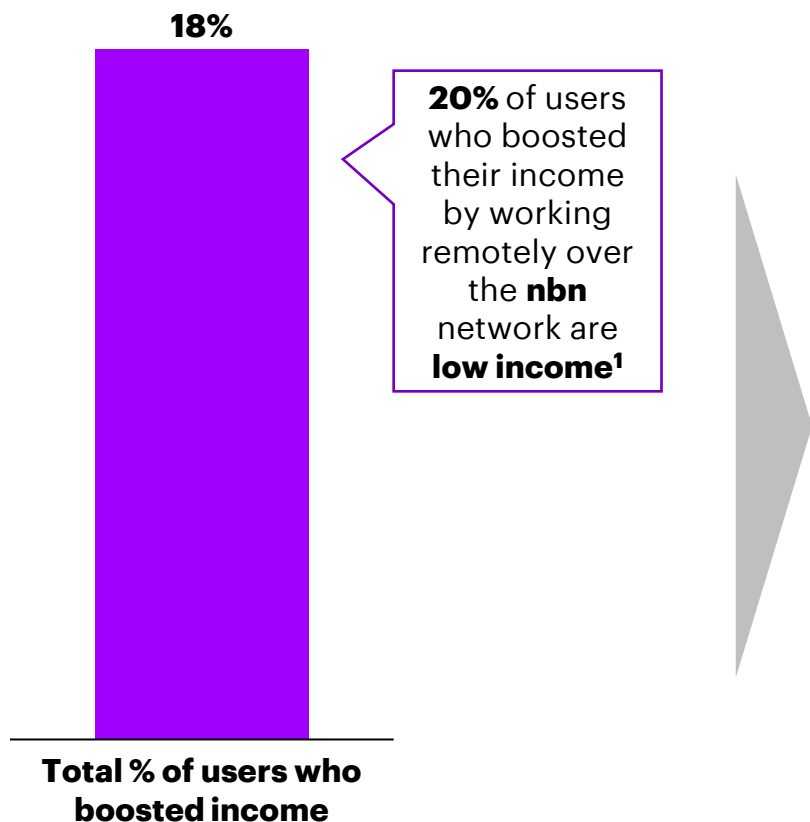
Services over the **nbn** network help all users to save money – but has the biggest impact for low-income users.

Notes: Cost savings are calculated by deriving average number of avoided car commutes per week and mode of commute from the Accenture/**nbn** consumer survey, applying an average distance to activity and calculating average cost based on average car cost per km, average public transport fare or average taxi fare. 1. Low income: <\$52,000 p.a., middle income between \$52,000 and \$104,000 p.a., high income >\$104,000 p.a. 2. Cost savings are net of the cost of service over the **nbn** network, but do not factor in additional costs associated with the online activity (e.g. higher utility bills, streaming subscriptions). Sources: Accenture/**nbn** consumer survey, n=2,001; RBA 2021; ABS 2016; Market Grunt 2019; Ibis World 2021; Expedition Australia 2022, Australian Institute of Petroleum 2022; Budget Direct 2022, Finder 2022; Taxi Calculator 2022, Accenture analysis.

Nearly 1 in 5 users boosted their income by working remotely over the nbn network

Services over the nbn network supported 18% of users to boost their income

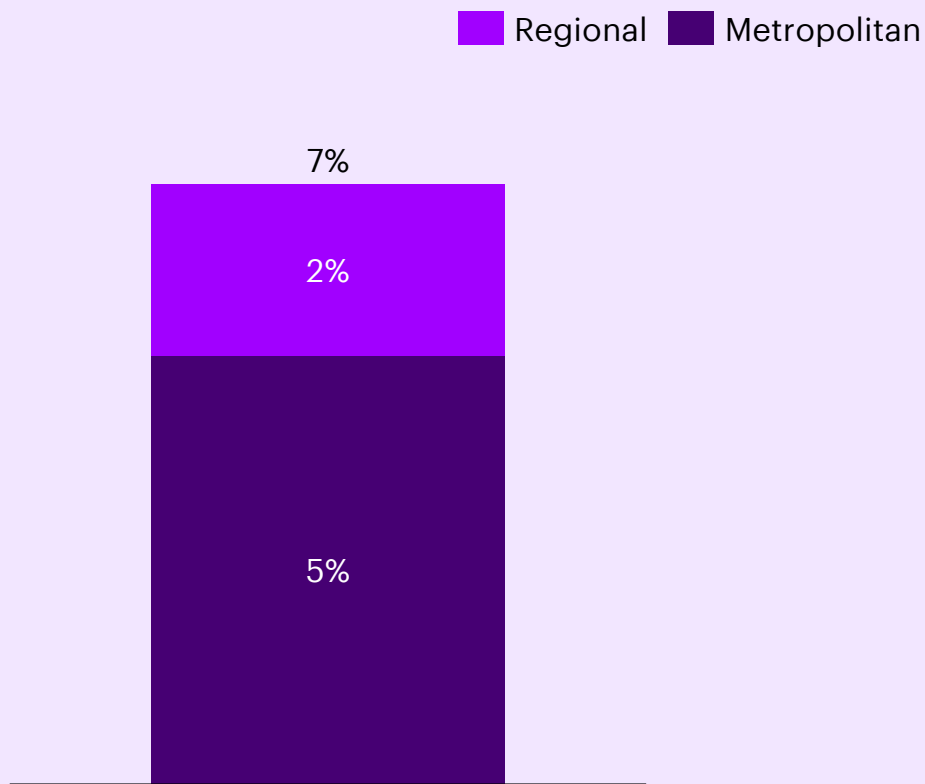
% survey respondents, Qs: By working remotely over the nbn network, have you been able to do any of the following? Select all that apply and How much more are you earning per year due to your increased paid workload, higher paying job and/or new business?



Over 4 in 5 small business owners who work from home rely on nbn-connected digital tools to run their business

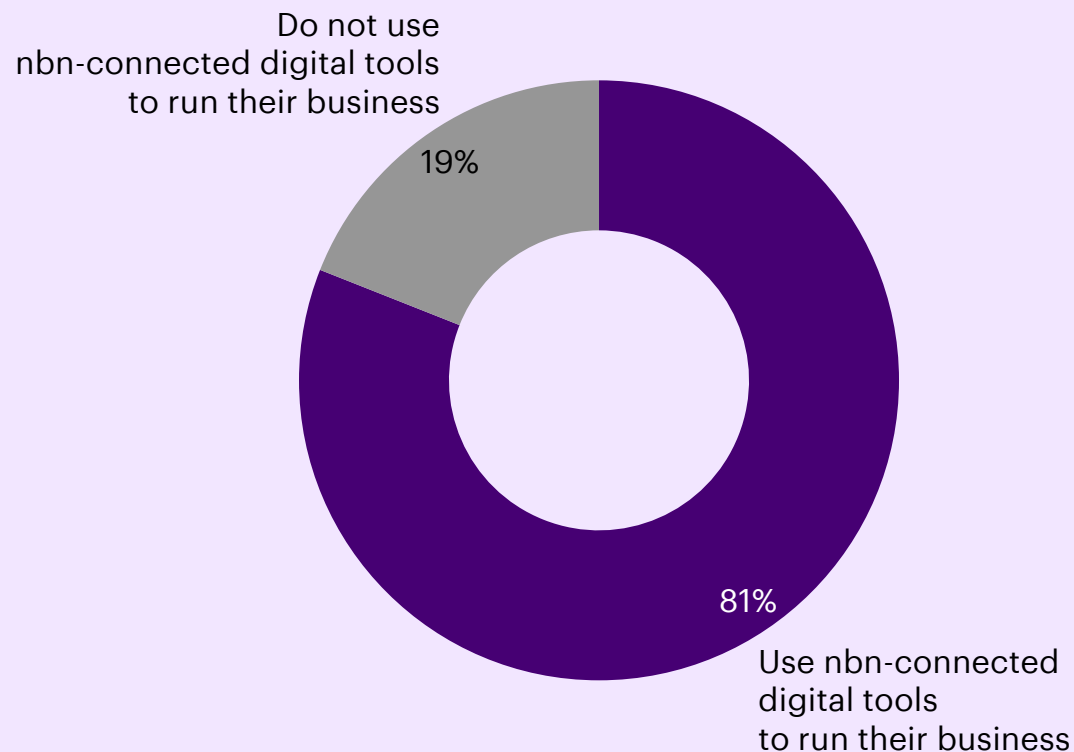
The nbn network enabled 7% of users to start a small business at home

% survey respondents, Q: By working remotely, have you been able to start a small business or side hustle?



81% of at-home small businesses rely on nbn-connected digital tools

% survey respondents



04

Services over the nbn network create new opportunities for users to enrich their lives

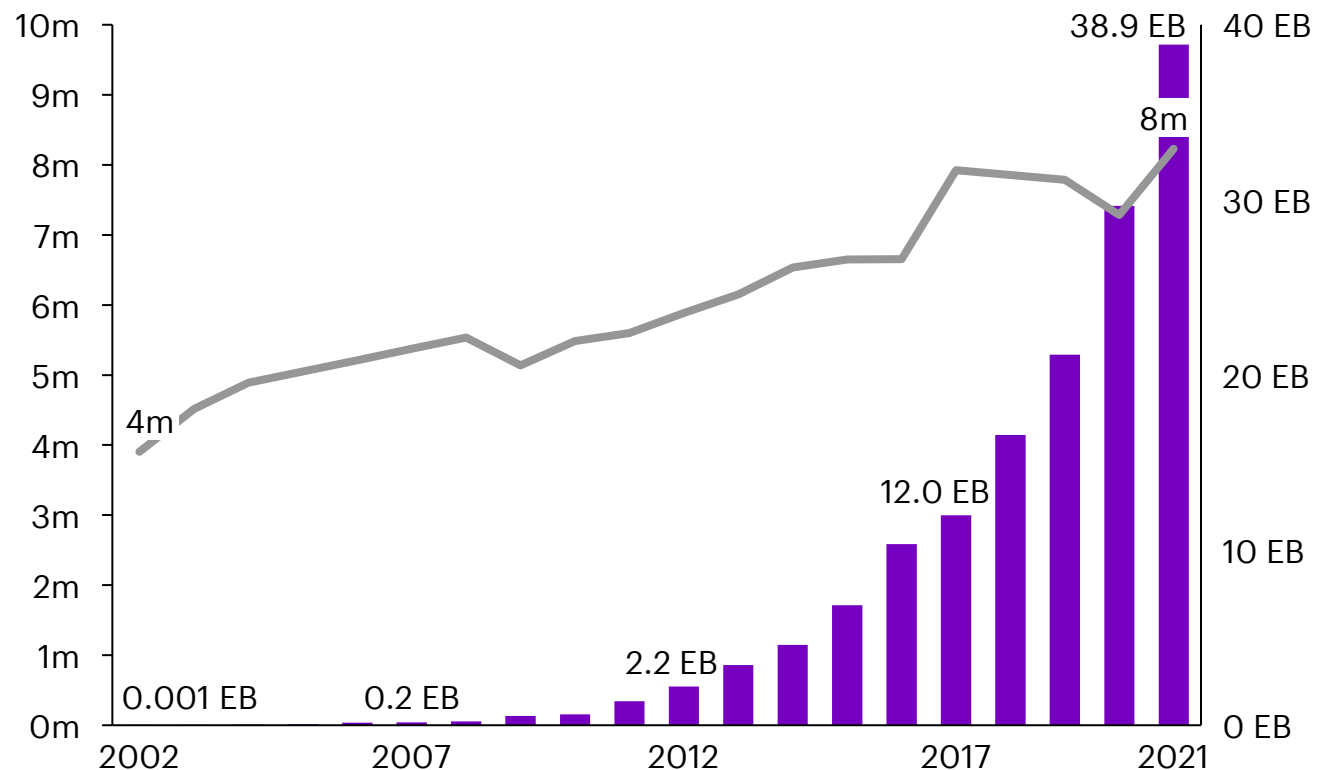


Over time, Australians have become increasingly connected to the internet and are using more data than ever

Since 2002, fixed broadband connections have doubled and downloads have increased 3,000x

Household internet access and data usage of Australians in downloads

- Number of household fixed broadband connections (LHS)¹
- Downloads in EB (Exabytes)² (RHS)



**Growth
(since 2002)**

3,000x
EB downloads

2x
connected
households

The number of fixed broadband connections in Australia has grown significantly since 2002, more than doubling from 3.7m household connections in 2002 to almost 8.0m connections in 2022.

Over this time, national data usage has also grown exponentially, from 0.001EB in 2002 to 38,9EB in 2022 – more than a 3000x increase.

This represents the growing connectedness and richness of internet platforms and media now available to the average Australian.


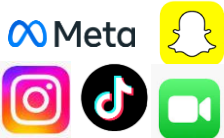







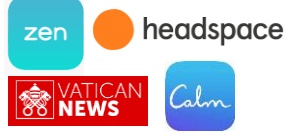
In 2002, the most common purpose for accessing the internet was to email and browse the web. 1GB of data would cover 600 webpages or 350,000 messages.

In 2022, email and web browsing remain the most common activity on the internet. However, this is closely followed by watching videos, audio content and video conferencing. 1GB of data would cover 30 minutes of HD video, or 30 hours of voice calls over the internet.



Notes: 1. Includes household connections, excludes business and government connections. Connections include both **nbn** and non-**nbn** connections, dial-up internet, non dial-up (Analog, DSL, ISDN, Cable, Satellite, Microwave, Fixed Wireless) and excludes mobile wireless connections. Where data unavailable, estimates have been made. 2. Data is measured in Exabytes, 1 Exabyte = 1,000,000 Terabytes. Data has been annualised from quarterly data, assuming constant rate throughout a year. Sources: ACCC, ABS Internet Activity Australia, ABS Household Use of Internet, ACMA, US Mobile, Accenture analysis.

The nature of the internet has changed over time, enabling Australians to access a growing range of ways to do what they love

	2002	2022
Time with family and friends	 <p>Online presence and messaging – MySpace ('03), Facebook ('04) and Gmail ('04) allow people to connect online</p>	 <p>Real-time and varied ways to connect – through social media (Instagram, Tik Tok), video calls, livestreaming, AR (e.g. camera filters), and VR including on the metaverse</p>
Entertainment	 <p>Online content hosting and online games e.g. YouTube ('05), Vimeo ('04), World of Warcraft ('04)</p>	 <p>Simultaneous gaming, livestreaming (of games or media) and chatting made possible by Twitch, Discord, YouTube and games such as Overwatch and PUBG</p>
Education and self-development	 <p>Online webpages and websites supported by search engines e.g. Google Search ('98) and Wikipedia ('01)</p>	 <p>Online courses incorporating text or video content (both live and recorded) that enable real or simulated interactions with course instructors and peers</p>
Hobbies and volunteering	 <p>Sharing personal stories, creative pursuits through blogging and online forums WordPress ('05), Whirlpool ('05)</p>	 <p>Online communities for hobbies on Facebook Groups and Reddit, interactive newsletter and podcast publishing through Substack, and virtual and remote volunteering opportunities.</p>
Self-care, religion and spirituality	 <p>Health and wellness articles (Yahoo Health) and religious texts (Project Gutenberg, popularised '04)</p>	 <p>App-based meditation, sleep management, livestreaming of religious services, and online forums for community groups and interactive apps to access religious texts</p>

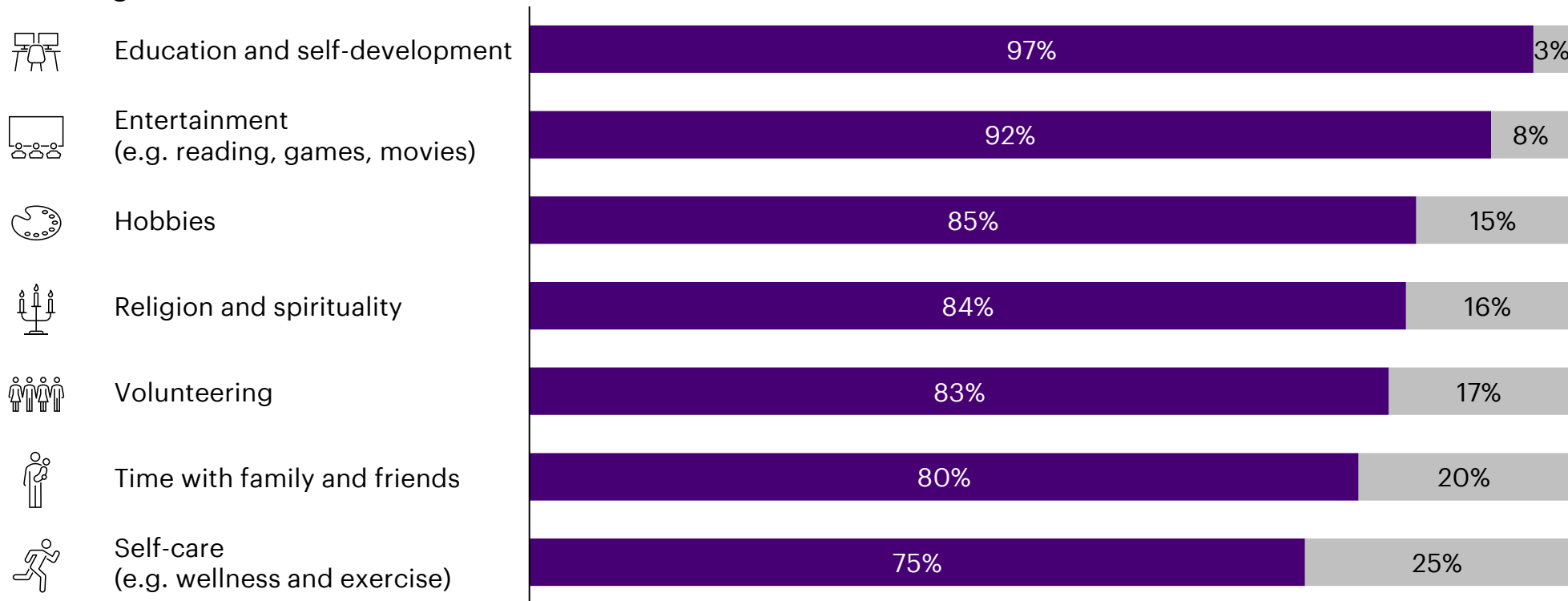
Users rely on services over the nbn network to do activities at home which enrich their lives

Many users rely on services over the nbn network to do enriching activities at home

% respondents who engage in activity at home; Survey question: *To what extent does the nbn network (rather than your mobile internet plan) enable you to do these activities at home, or help you to do them better?*

■ Participants reliant on services over the nbn network¹ ■ Participants not reliant on service over the nbn network

Enriching activities done at home



97% of those who engage in education and self-development at home rely on services over the nbn network to do this activity.



Without a service over the nbn network, these users would do less of these activities or find them less enjoyable

Users are choosing to do enriching activities over the nbn network. Without this option, many would do less of what they love or find it less enjoyable

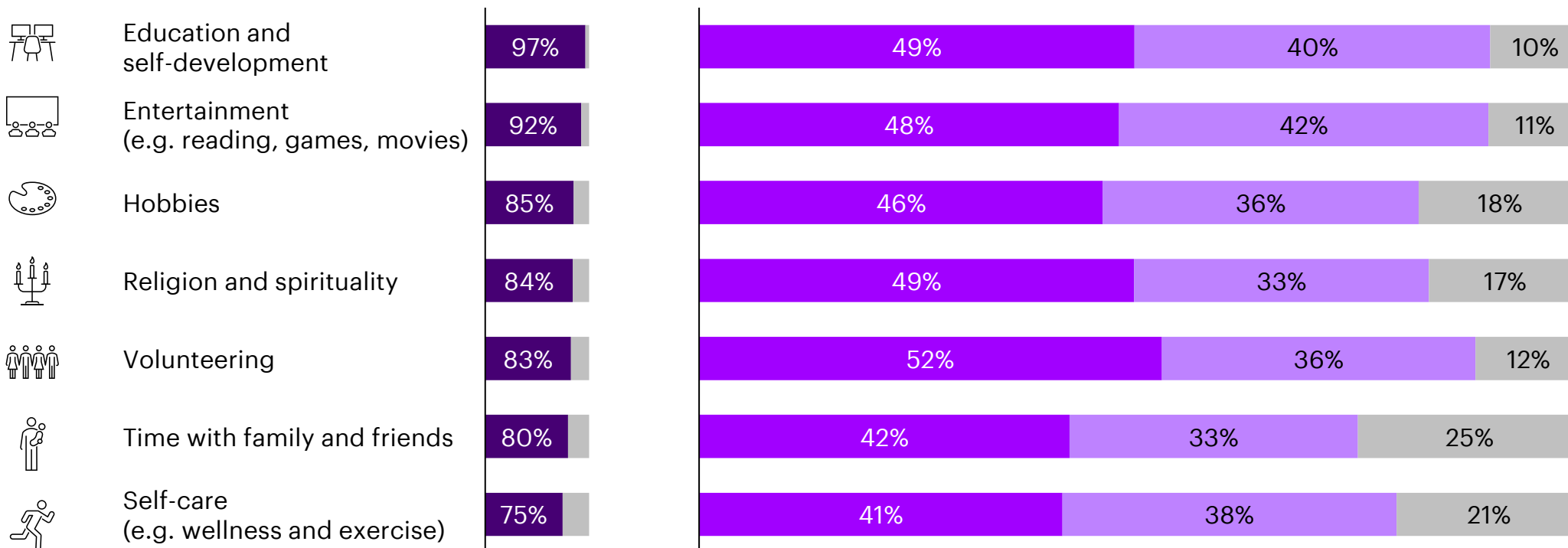
% respondents who rely on the nbn network to engage in the activity at home; Survey question: *How would your ability to do this activity at home be impacted if you did not have a service over the nbn network at home?*

Enriching activities done at home

Reliant on the nbn network (%)

Impact to activity if these users did not have access to the nbn network

■ Less convenient or less enjoyable
 ■ Done less frequently or not at all
 ■ Not impacted



Many engage in education online at home. Without the nbn network, almost of half of these users would find this activity less convenient or enjoyable

The wellness and fitness industry is moving online, supported by services over the nbn network

Innovation in the wellness and fitness industry has allowed new and sophisticated forms of exercise to emerge, including exergaming and online exercise sessions.

- **Exergaming** – this is technology-enabled, gamified exercise. Exergaming has increased in popularity from <10k participants in 2019 to more than 935k participants in late 2021. Examples include:
 - Smart exercise equipment such as treadmills equipped with video screens that allow walking tours during a workout session
 - VR-based fitness games, which can simulate PT and boxing sessions in a virtual environment
- **Online exercise sessions** have also increased in popularity, from 600,000 participants in 2019 to 1.4m participants in 2021. Examples include:
 - Online web-based or app-based video content for guided exercise
 - Live guided exercise classes over videoconferencing

The Accenture/nbn consumer survey found that of those who participate in wellness and fitness at home, three in four rely on services over the nbn network to do so.

For this group, without a service over the nbn network:

- **Almost one in ten** would no longer participate in wellness and exercise at home, and almost **three in ten** would do less of it
- **More than four in ten** would find it less convenient or less enjoyable to do wellness and fitness at home.



3 in 4
users who engage
in wellness and
fitness at home rely
on the nbn network



19X
increase in people
participating in
'exergaming' since
2019

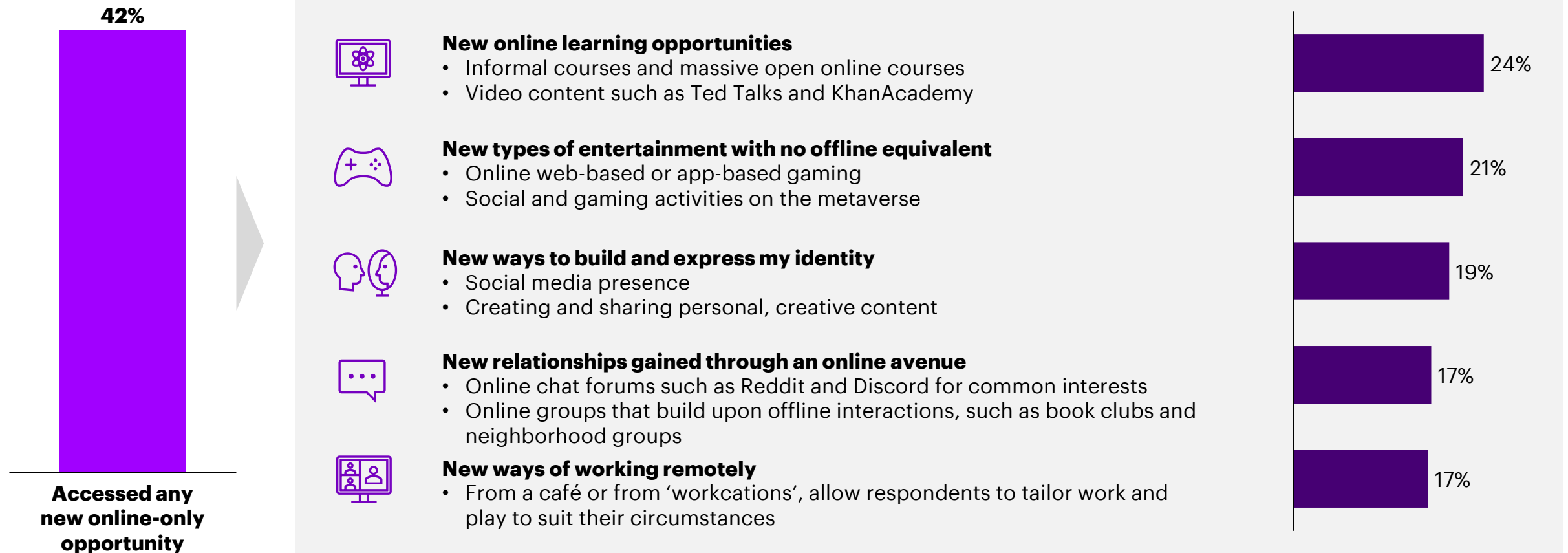


“
A combination of old meets new will become the norm as technology continues to drive evolutions in gym and PT offerings
”

Over 2 in 5 users have accessed new online-only opportunities via services over the nbn network

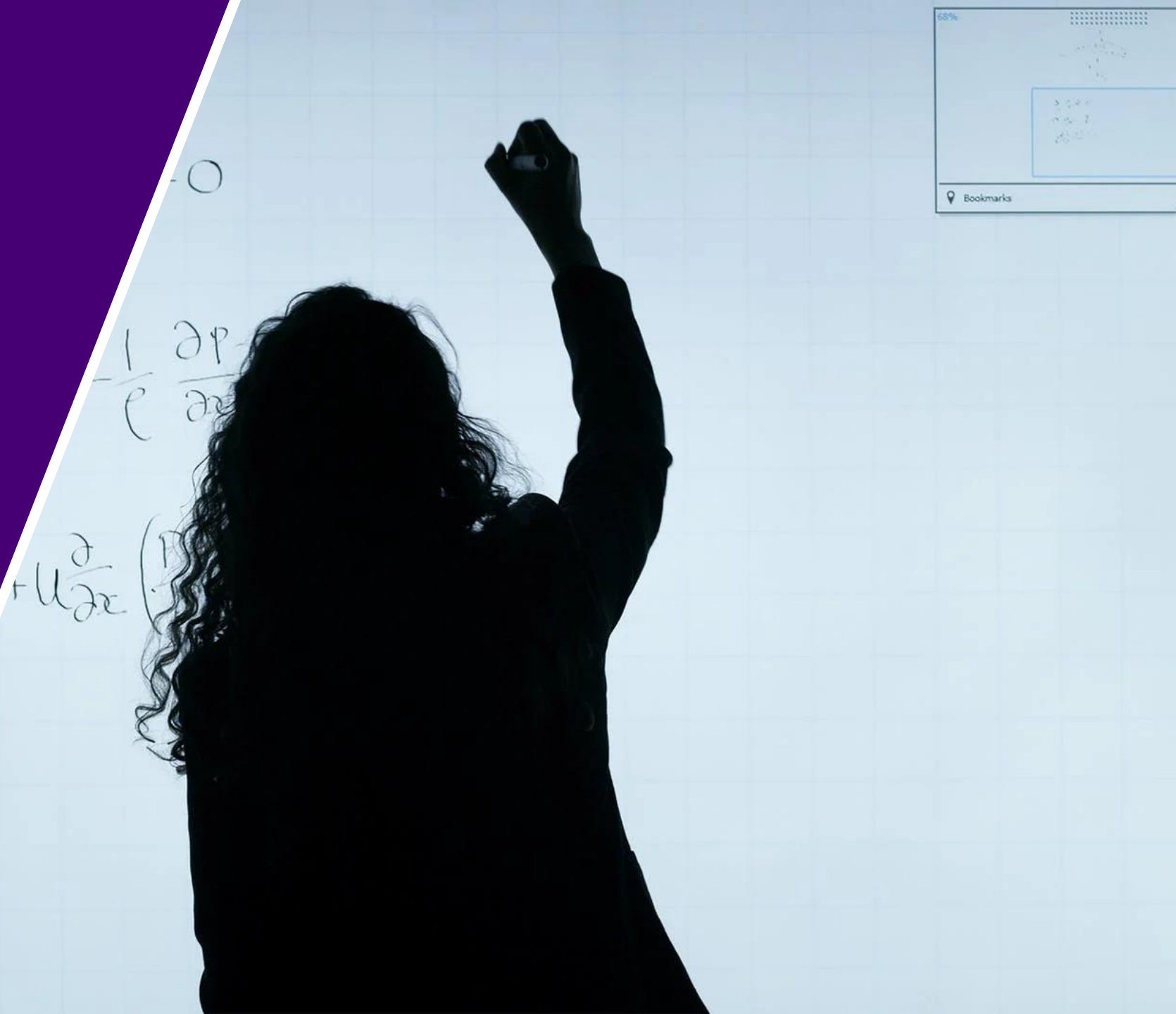
Over 2 in 5 users use services over the nbn network to access new opportunities that do not have an offline equivalent

% survey respondents; Survey question: Have you been able to access new opportunities through the nbn network? Select all that apply.



05

Appendix: Sources of insight



$$-0$$

$$\frac{1}{c} \frac{\partial p}{\partial x}$$

$$+ u \frac{\partial}{\partial x} \left(\frac{\partial p}{\partial x} \right)$$

Data sources used for this report

Note: Analysis for this report was conducted in late-2022. Data used was the latest available at the time, and where relevant the date has been noted against each source below.



nbn

Source:

nbn

Information:

- **nbn** network activity data (downloads and uploads) by service, January 2020 to July 2022



**Accenture
survey**

Source:

Survey of **nbn** users (September 2022)

Information:

- Total survey size: 2,001
- Representative sample of Australian population
- Includes 197 small business owners who work from home over the **nbn** network



**Secondary
research**

Source:

Public data sources and reports

Information:

- ACCC Internet Activity Record Keeping Rules
- ABS Internet Activity Survey
- ABS Socio-Economic Indexes for Areas
- Technological trends in fitness from Australian Sports Commission, *'How Australians' participation in sport and physical activity is adapting to COVID-normal'*, 2022
- Travel to activities:
 - ABS, Commuting to Work 2016
 - Statista, Time of last visit in bank branch in the US 2016
 - Market Grunt, Supermarkets in Australia 2019
 - IBISWorld: Supermarkets in Australia 2021, Gym and Fitness Centres in Australia 2021
 - RBA: How far do Australians need to travel to access cash, 2021
- Emissions from travel:
 - National Transport Commission, Light Vehicle Emissions Intensity in Australia 2021
 - Department of Climate Change, Energy, the Environment and Water, Australia's greenhouse gas emissions, March 2022
- Cost of travel:
 - Expedition Australia, Cost of fuel, 2022
 - Australian Institute of Petroleum, Weekly Petrol Prices Report, Oct 2022
 - Budget Direct, Average fuel consumption in Australia, 2022
 - Finder, Cost of a commute, 2022
 - Taxi Calculator, Australia, 2022
- Images from Pexels and Unsplash

About Accenture

Accenture is a global professional services company with leading capabilities in digital, cloud and security. Combining unmatched experience and specialized skills across more than 40 industries, we offer Strategy and Consulting, Technology and Operations services and Accenture Song — all powered by the world’s largest network of Advanced Technology and Intelligent Operations centers. Our 721,000 people deliver on the promise of technology and human ingenuity every day, serving clients in more than 120 countries. We embrace the power of change to create value and shared success for our clients, people, shareholders, partners and communities. Visit us at www.accenture.com.

Disclaimer

This document is intended for general informational purposes only. The analysis in this report was commissioned by **nbn** and prepared by Accenture on behalf of **nbn**. Views and opinions expressed in this document are based on Accenture’s knowledge and understanding of its area of business, markets and technology. Accenture does not provide medical, legal, regulatory, audit, or tax advice, and this document does not constitute advice of any nature. While the information in this document has been prepared in good faith, Accenture disclaims, to the fullest extent permitted by applicable law, any and all liability for the accuracy and completeness of the information in this document and for any acts or omissions made based on such information. Opinions expressed herein are subject to change without notice. This document may make references to third party names, trademarks or copyrights that may be owned by others. Any third-party names, trademarks or copyrights contained in this document are the property of their respective owners.