Deloitte.

Behaviour unlimited

Mobile Consumer Survey 2018

The Australian cut

1_Peak smartphone

/Usage & addiction
/Entertainment gone mobile
/Unlimited data & 5G

2_A most important purchase

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Introduction

In 2018 it's behaviour unlimited – because when it comes to the smartphone, too much is still never enough.

With the imminent rollout of 5G and increasing demand for unlimited data, we are starting to see the emergence of new consumer behaviours.

This, coupled with the influence of 'digital giants', new technologies (i.e. voice, biometrics), privacy concerns, and the increasing importance of the smartphone in our lives, places us at one of the most exciting times in mobile technology.

About the survey

The Mobile Consumer Survey, now in its fifth year in Australia, is a multi-country study of mobile phone users around the world. The 2018 study comprises more than 54,150 responses across 35 countries. Australian findings are based on a nationally representative sample of over 2,000 consumers aged 18–75, polled online during June 2018.

Key findings

The rate of growth in smartphone penetration has tapered. But despite our worry of phones dominating our lives, we're using them more and more – and our behaviours are shifting. Watching long-form content on our small screens is becoming more prevalent with almost a quarter of smartphone users now using their mobiles to watch live TV and stream films/TV on a weekly basis. We are taking up high data plans too, with 42% of smartphone users surveyed now on data plans of 5GB or more. So are we at peak smartphone usage? Not yet; only 39% of surveyed Australians think they use their phone too often, while only 34% are trying to limit their use without success.

We're holding on to our phones for longer. The percentage of those with a phone less than 18 months old fell from 61% in 2016 to 58% in 2018. And when we do choose to replace our phone, it's sticky business – because the decision on a smartphone and its operating system has far-reaching implications for other connected devices we purchase.

This year, we're pointing the finger at biometrics with a 23% increase in fingerprint utilisation. We're also getting more comfortable with making purchases on our devices, with online purchases via devices up by 15% and one in four respondents continuing to purchase via their device in-store. And despite 84% of respondents being concerned about how their personal data is used, shared, and stored by companies they interact with online, sharing of key personal data is up across all age groups.

Towering over our connected lives are the digital giants. Google, Amazon, and Apple are having a huge influence on how we behave with our smartphones and beyond. This is more prominent than ever where 9% of respondents now own an in-home speaker – a 200% growth over the last year – and 16% are using voice assistants on their mobiles, up from 14% in 2017.

Peak smartphone

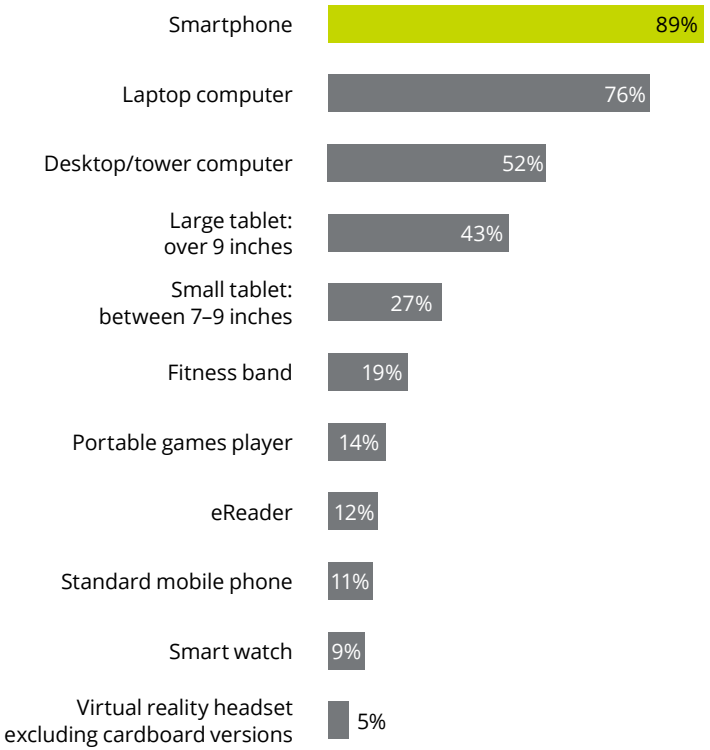
Device penetration for smartphones has reached saturation but it seems our passion for them is insatiable. And with affordable unlimited data plans and 5G over the horizon, expect the uptake of mobiles as a primary entertainment (or content) device to be around the corner.

A question of usage or addiction

Since 2016, the rate of increase in smartphone penetration has tapered – 89% of surveyed Australians now own a smartphone, up from 88% in 2017 and 84% in 2016. In last year's edition of the Mobile Consumer Survey, we suggested the maximum penetration rate for smartphones would lie between 90% and 95%; we are still just shy of that range. Australia remains a smartphone market dominated by Apple and Samsung with 42% and 35% market share among surveyed mobile consumers respectively. However, market penetration is just one measure – comparison of the behaviours of mobile consumers in Australia with other geographies suggest our levels of engagement (or perhaps obsession) with our smartphones have not yet reached maximum potential. We've not yet reached 'peak smartphone' – *the peak level of usage before we expect the vast majority of consumers to begin actively limiting their phone use.*

Graph 1: Device ownership

Which, if any, of the following devices do you own or have ready access to (i.e. that is readily available for you to use)?



Australia remains a smartphone market dominated by Apple and Samsung with 42% and 35% market share among surveyed mobile consumers respectively.

Pushing the limits

Thirty-nine per cent of Australian smartphone users think they use their phones too much. Of those respondents, 26% are usually successful in limiting their use, while 34% are trying but not succeeding.

As a nation, we're generally early adopters of technology but the smartphone came of age for us when our experience with the internet had already been shaped by desktop PCs and laptops. As one of the most developed payments markets in the world[1], our use of mobile payments for everyday tasks, such as paying for our morning coffee, had to change pre-existing behaviours around online bank transfers and contactless payment cards. These and other 'old habits' will, ultimately, determine the speed at which behaviours adapt to the pace of innovation in mobile technology.

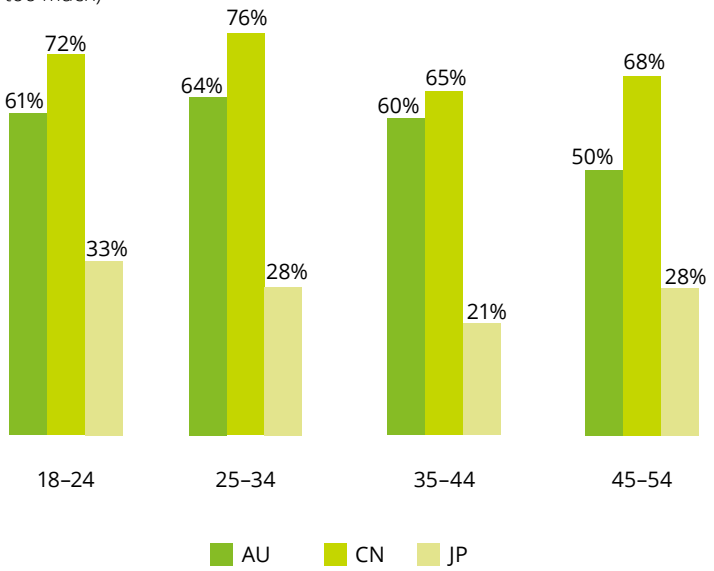
To put this in context, the rise of the smartphone in China occurred without the same entrenched digitally-enabled consumer behaviours. This has created the environment for advancements in mobile technology to shape new consumer behaviours without the challenge of displacing old habits. In our survey, this manifests in different levels of awareness and concern around smartphone use. Fifty-nine per cent of smartphone users surveyed in China think they use their phones too much. While a lower proportion of those users are successful in limiting their use (19%), a higher proportion overall are actively trying to limit use (51% try but fail).

39% of Australian smartphone users think they use their phones too much.

In last year's survey, we saw the largest growth in smartphone penetration among the 'silver surfers' – those aged 55+[2]. Just as our generation differences are evident on the timeline of smartphone adoption, we believe this generational lag in device adoption will cascade into further growth in smartphone usage in the older generations – less than half of Australian smartphone users above the age of 35 are trying to limit their mobile screen time. This generational difference is less pronounced in China where half of all smartphone users surveyed in the 35–44 and 45–54 age brackets are actively trying to limit their use of smartphones, regardless of whether they think they currently use their mobile phones too much. Of survey respondents aged 35+ who have self-identified as someone who uses their phone too much, close to 70% are actively trying to limit their smartphone use.

Graph 2: Limiting mobile phone usage by age group

Do you try to limit your mobile phone usage because you think you are spending too much time on it? (All adults who think they use their phone too much)



Note: CN data only covers adults 45–50

Less than half of Australian smartphone users above the age of 35 are trying to limit their mobile screen time.

Complacency or reality?

Smartphone 'addiction' or obsession is clearly a topical issue – technology companies and regulators around the world are all acting on it. Apple and Google recently showcased advanced parental controls for their devices as well as new features to manage screen time[3]. In China, regulators are cracking down on mobile games and introducing measures to curb screen time for children[4].

While it is no doubt important to address smartphone obsession in children, it may be equally important to ensure older smartphone users are also aware and equipped to control their own smartphone use to avoid a 'do as I say, not do as I do' scenario.

Concern around smartphone 'addiction' has been around for many years, and yet it seems to be on an unstoppable rise. With increasingly complex algorithms to tune apps and websites to our specific interests and contexts, our use of smartphones is unlikely to wane.

Technology companies now focus on a concept of 'time well spent'[5], but is it too little, too late? Is this just the new paradigm for human interaction[4]?

Entertainment gone mobile

An inflection point on our path towards peak smartphone usage will likely come from long-form video content.

As expected, our entertainment preferences are currently split – smartphones are our preferred device for short video, while televisions are our preferred device for streaming films/TV and watching catch-up or live TV. However, a rising number of Australian mobile consumers are using their smartphones to view long-form content on a regular basis – almost a quarter of surveyed smartphone users now use their mobiles to watch live TV on a weekly basis, an increase from 19% in 2017 and 6% in 2016. Similar increases are evident in streaming and catch-up content – 23% of smartphone users stream films/TV series on their mobiles on a weekly basis compared to 18% in 2017, while 19% use their mobiles to watch catch-up TV compared to 15% in 2017.

But how much more is this likely to grow? Well, as a point of comparison, in China, where the mobile entertainment ecosystem is dominant, 61% of smartphone users surveyed watch live TV on a weekly basis – surprisingly, this proportion is only slightly lower for the 45–54 demographic* where 56% of survey respondents use their smartphones to watch live TV on a weekly basis. In China, smartphones are also the preferred device for watching short videos and streaming TV or films for all age groups. For live TV, 33% of Chinese mobile consumers aged 18–24, and 19% of those aged 35 and over, prefer their smartphones to any other screen.

In 2018, other researchers have indicated that the average Chinese consumer spends more time watching content on their smartphones (2 hours 39 minutes per day) than their TVs (2 hours 32 minutes per day)[6].

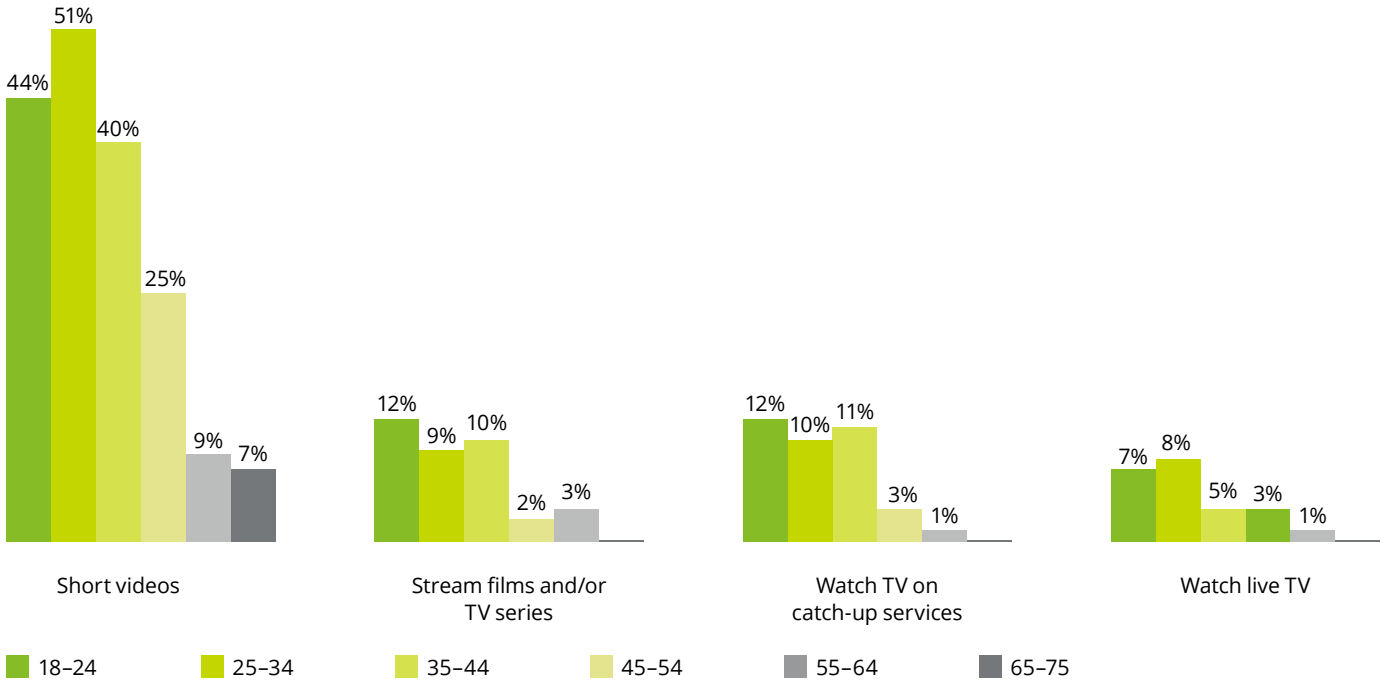
While we may never completely emulate the behavioural dynamics of the smartphone market in China, given the difference in technology environments when the smartphone came of age, it does demonstrate the remaining potential for long-form video on our mobile devices.

*This was the oldest generation that was surveyed in China

Almost a quarter of surveyed smartphone users now use their mobiles to watch live TV on a weekly basis, an increase from 19% in 2017 and 6% in 2016.

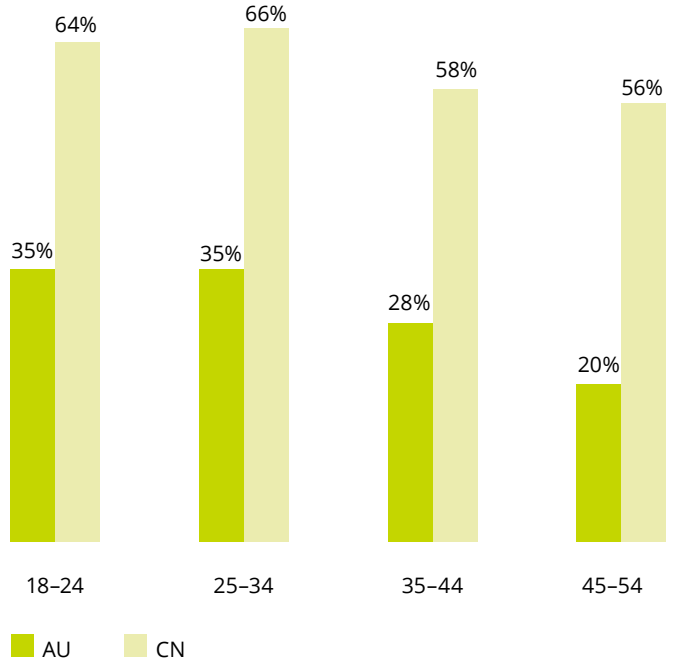
Graph 3: Activities completed on a mobile phone by age

Which, if any, is your preferred device for each of the following activities? (Answers for mobile phone)



Graph 4: Weekly live TV viewing on mobiles by age (Australia and China)

Below is a list of activities that you may do on your smartphone. Please state how often you do any of these. (Answers for 'watch live TV' and 'at least once a week' and 'at least once a day')



Note: demographic data for CN only goes up to 45–50

The 'telco-tainment' trigger

The rise of 'telco-tainment' explored in our Media Consumer Survey 2018[7] – namely, the bundling of omni-device entertainment apps (e.g. Netflix, Stan, Foxtel Play) with telco offerings – may prove the value exchange trigger that draws more consumers towards viewing long-form content on mobile devices.

In addition to paid streaming services, the increasing ease of streaming live TV reached a milestone in July 2018 as the Freeview FV app hit one million downloads. It reported a nine-fold growth in downloads when Chromecast compatibility was added in May 2017 and another inflection point when Apple TV compatibility was added in February 2018[8]. With catch-up TV and live TV now featured on the same Freeview FV app as of May 2018[9], the added convenience of streaming TV to our smartphones provides the robust foundation for further growth in our smartphone usage. A further catalyst for our behaviour will come from the distribution of digital streaming rights for sport. Due to the nature of broadcast rights in Australia, streaming blackouts still exist for some live sport but we are starting to see a shift. When Channel Nine acquired the digital rights to the NRL in 2018, it included the rights to live stream three games each week of the regular season on 9Now alongside the TV broadcast, including also, the right to live stream the Grand Final[10].

In China, we've seen similar behaviour from digital platforms, which have pushed aggressively to secure exclusive subscription video on demand (SVOD) and live-streaming rights to major international sports. Tencent Video owns the rights to the NBA, NFL, NHL, MLB while PPTV owns the rights to EPL, UEFA Champions cup[11].

Keeping in mind that when presented with the choice, 69% of Australian smartphone users surveyed still preferred to watch live TV on their televisions. It's likely that the increase in preference for watching long-form content is happening outside the home – on our commutes or in other settings like at the gym. Given this context, the implications are broad – how might companies insert advertisements to optimise video playback, or drive sharing of content across social media? The different viewing context for consumers also poses questions for the viewing experience – if we are viewing long-form content during our commutes where the smartphone is our only screen rather than at home, where it is our secondary screen, are we likely to be more engaged and not 'multi-tasking' the same way we are when in front of our televisions?

Unlimited data & the 5G factor

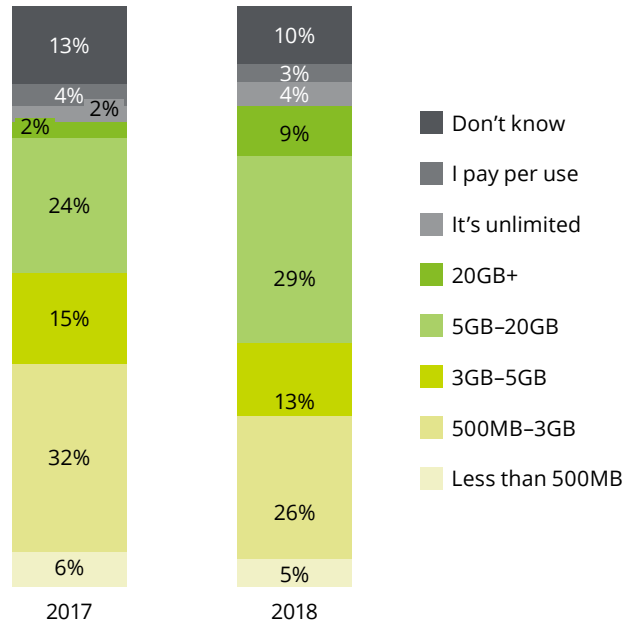
The introduction of unlimited mobile data plans earlier this year will soon begin to trigger changes in consumer behaviour, as well as new headaches for telcos.

Australian mobile consumers are moving towards larger data allowances as the proportion of 500MB – 3GB plans are upgraded to 5GB – 20GB+ plans, with 42% of smartphone users surveyed now on data plans of 5GB or more compared to just 29% in 2017. It's also unsurprising that unlimited plans still only make up a fraction of mobile consumers (4%) as major telcos such as Telstra and Vodafone announced their unlimited plans in May of 2018[12]. Watch this space.

With unlimited data, consumers will be more comfortable 'unlocking' mobile data for their video applications, unleashing a new wave of data consumption on our mobile networks and operators. Mobile operators are responding with network technology upgrades – for example, in July 2018 Telstra showcased its LTE-B broadcast tech for high-definition streaming on its AFL app[13].

Graph 5: Monthly data allowance on a smartphone

What is your monthly data allowance on your smartphone?



5G: saviour or curse?

A 5G network describes the next generation of mobile wireless communication. One that provides consumers with, among other features, mobile internet speeds typically around five times faster than currently available on 4G/LTE and potential peak data rates going up to 20Gbps. Both Optus and Telstra successfully tested 5G on the Gold Coast in August 2018 and announced commercial rollout in Australia in 2019[14].

The potential benefits of 5G networks are astounding – recent economic modelling by the Department of Communications and the Arts' Bureau of Communications Research suggests that 5G networks could contribute up to $2,000 in additional Gross Domestic Product (GDP) per person after the first decade of the rollout, or roughly $50 billion in additional GDP. The challenge ahead for network operators will be to ensure they capture their 'fair share' of those broader benefits. Instead of increasing prices when 4G was introduced, telcos migrated customers to higher value plans with bigger data allowances. But the shift from 4G to 5G is happening against a backdrop of unlimited data, so telco providers will need to find new business models to capture value from 5G-enabled applications.

Thirty-nine per cent of Australians surveyed indicated they would proactively switch to a 5G network as soon as it was available or upon hearing good things. However, the willingness of the Australian consumer to pay for the benefits of a 5G network is yet to be genuinely tested. As a point of comparison, Deloitte's 2018 5G Mobile Technology report surveyed the Australian business community and found that 46% of respondents were not willing to pay more for faster, more reliable telecommunications services. This suggests that those Australian businesses would not move to 5G until it was the same price as 4G or until 4G was no longer available[15].

39% of Australians surveyed indicated they would proactively switch to a 5G network as soon as it was available or upon hearing good things.

The most immediate commercialisation pathway for 5G will be in the home. In Australia and abroad, multiple telco providers have already announced plans for 5G fixed wireless products. This could provide an alternative to home broadband connections with high bandwidth and fibre-like speeds to support the simultaneous use of multiple devices and technologies, without the complexity and cost associated with rolling trucks to every house or high-density building. At a recent strategy update briefing, Telstra's CEO, Andy Penn, suggested that indications of the uptake of mobile only households as a result of a 5G rollout could be in the order of 10–15%[16]. Outside of the home, the full-scale deployment of 5G mobile networks will enable innovative new consumer and enterprise use cases above and beyond what is possible with 4G.

Currently, only 22% of surveyed smartphone users regard their existing mobile network as always 'good enough' during commutes. The step change in functionality provided by full-scale 5G networks – i.e. faster speeds, better reliability, and improved capacity – will go a long way towards addressing current consumer pain points. However, there are still a number of steps that need to line up for a critical mass of consumers and businesses to switch over from 4G. For one, the extensive global standards required to build and deploy advanced 5G networks still have some way to go before being complete, with the ratification of the first set of 5G standards only finished last year[17]. In parallel, device manufacturers are only expected to debut 5G-enabled smartphones at the Mobile World Congress next February, with Apple not expected to launch a 5G-enabed iPhone until 2020[18].

Whether by design or coincidence, the timeline for adoption of 5G mobile networks and devices seems aligned with a broader consumer behaviour shift towards data-intensive, long-form video content on smartphones – with people expecting better quality service during their commute time. This shift in behaviour is likely to lead to an up-tick in the value consumers place on the networks they use. The convergence of unlimited data plans, 5G, and long-form content viewing on smartphones is the 'perfect storm' for peak smartphone use.

A most important purchase

Handset FOMO is decreasing and the cost and effort of replacing a phone is increasing. Is it any surprise then that we're holding onto our smartphones for longer? Adding weight to the smartphone purchase decision, each time we buy we are committing to specific service ecosystems.

More than a phone

iPhone celebrated its 10th birthday with the release of the iPhone X in November 2017 in Australia, but the new phone, new facial recognition, and eliminated home button did little to curb the lengthening replacement cycles for new smartphones. The proportion of respondents with a phone less than 18 months old has fallen from 61% in 2016 to 58% in 2018. Comparatively the 18–30 month category has moved from 23% to 26% (2016 to 2018).

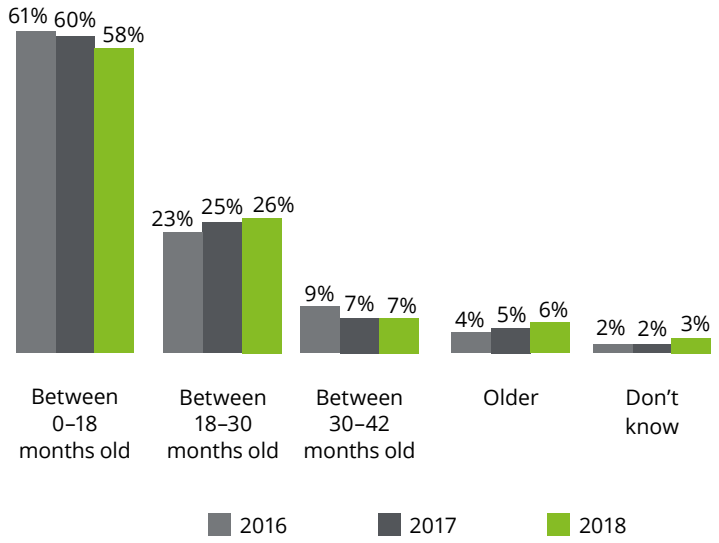
So handset FOMO is seemingly decreasing and there are two main factors affecting this. Upgrading phones is now less about getting access to better cameras, waterproofing, or screen size and more related to practical issues like phones crashing, reduced battery life, or a crack in the screen that's finally become too annoying.

This is demonstrated by the increased aging of phones above 18 months and the reduced importance we place on services like early phone upgrades when signing up to a mobile operator (17% in 2018 versus 19% in 2017). Further, we are increasingly holding onto our spare phones, 36% in 2018 compared to 34% in 2017 highlights the growing reliability of older handsets.

If slightly better cameras, battery life, and changing screens are not swaying consumers to upgrade, the next big upgrade for smartphones is set to be 5G, which will fundamentally change how we consume mobile data[19] and will require new hardware to enable connectivity.

Graph 6: Age of current phone

When did you buy or receive your current phone?



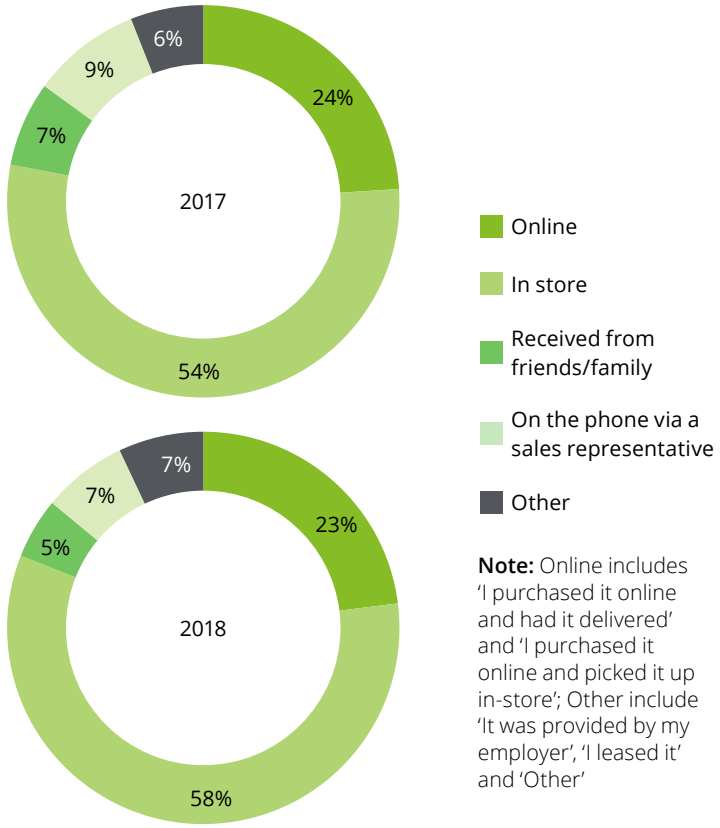
Stickier than we think

Slowing replacement cycles doesn't mean doom for Apple or Samsung as they now have longer periods to nurture customers in their environments and on-sell services and accessories. Apple's services division grew by 30% year on year (May 2018) to USD $9.2bn while its iPhone sales were largely flat, 3% change from previous year to May 2018[20]. As the service suite of hardware providers increases, consumers considering a new smartphone face a broader set of implications. For example, an iPhone purchase can impact where we store our data (iCloud), how we connect our home's devices (HomePod), the music we listen to (Apple Music), the videos we watch (Apple TV), how we monitor our health (Apple Watch), how we pay for goods and services (Apple Pay). A consumer hooked into this ecosystem is much more valuable to Apple than a 24-month smartphone sale. Further, as we become more entrenched in this web of services, the impact a simple handset replacement has on our lives is ever increasing.

To navigate this complexity we are seeking more advice. As handset hardware features have converged and the lives of smartphones lengthen, we want advice and a chance to touch and feel devices before we make a purchase. This is demonstrated by 58% of consumers purchasing their new smartphones in-store (predominantly a mobile operator or electronic retailer), increasing from 54% in 2017, and also by 42% of respondents indicating they want guidance on functionality. This is even more pronounced for older generations with 59% of respondents aged between 65–75 interested in this service versus 34% for respondents aged 18–24.

Graph 7: Mobile phone purchase channel

Which, if any, of the following apply to how you got your current phone? (New phone only)



Note: Online includes 'I purchased it online and had it delivered' and 'I purchased it online and picked it up in-store'; Other include 'It was provided by my employer', 'I leased it' and 'Other'

The true cost of replacement

When the Apple iPhone X launched in 2017, there were reservations about its price point. The USD $999 (AUD $1,579) starting position set a new bar, not just for Apple but for the smartphone market as a whole. Despite this, the iPhone X sold out in minutes and went on to out-sell every other iPhone in the December and March quarters[21], proving a clear appetite from consumers to pay as much for a smartphone as they would for a laptop. This points to the value of a smartphone in the eyes of a consumer – it is fast becoming our main computing device and we're willing to invest more and hold onto it for longer.

While Apple represents the premium end of the market, there is a broader trend of smartphone users willing to spend a bit more – in a recent Gartner study, 70% of smartphone users in the midrange price point (such as the Huawei Nova 3e or Oppo R11) are willing to spend more for a better product within the same category[22].

The decision to buy a smartphone is only getting more expensive – and it is becoming more consequential as our choice of mobile device will ripple across every facet of our lives.

Not limited to hardware

As connected devices become more accessible, the value of a common operating system between devices will amplify, making swapping between ecosystems more costly for consumers.

As our gateway to a broader communication and entertainment ecosystem, the decision on a smartphone and its operating system has far-reaching implications for the other connected devices we choose to purchase.

Forty-eight per cent of iPhone users surveyed have voice assisted speakers compared with 30% of Samsung smartphone users; 53% of iPhone users reported having a smart watch or other wearable compared with 32% of Samsung users. It seems logical that users would prefer devices that easily integrate with their smartphone operating system – e.g. HomePod and Apple Watch for iPhone users. For those users, to exit the iOS ecosystem would likely include the cost of replacing not just the smartphone itself but also the various other connected devices.

48% of iPhone users surveyed have voice assisted speakers compared with 30% of Samsung smartphone users.

Ditching the plans

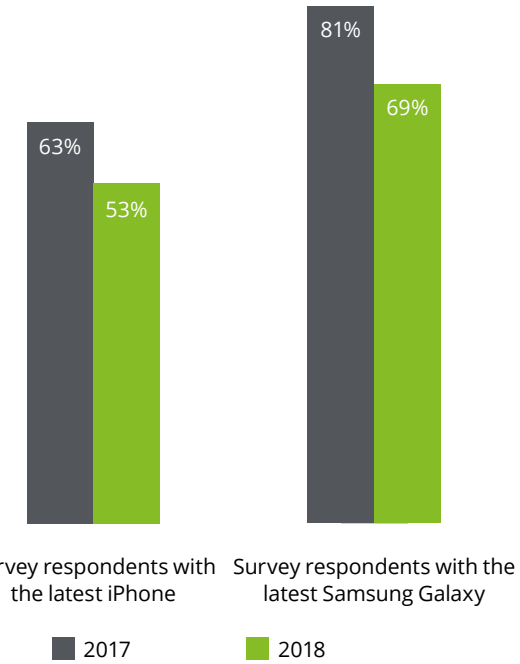
Despite rising prices, more of us are choosing to purchase our phones outright. In 2018, a lower proportion of surveyed smartphone owners with the latest devices in-market from Apple and Samsung reported purchasing their devices through a monthly plan with their mobile network operator. Only 53% of iPhone X owners in 2018 bought their phones through a contract plan versus 63% per cent of iPhone 7 owners in 2017. Similarly, only 69% of Samsung S9 owners in 2018 were on contracts versus 81% of Samsung S8 owners in 2017.

There may be a number of drivers of this – consumers could be turning to SIM-only plans for better value inclusions or to prepaid plans for greater certainty in cost. The desire to avoid 'bill shock' in the form of hidden or surprise costs was the most important feature consumers looked for in their mobile plans with 77% of survey respondents rating it as very important, followed by the total monthly cost. Concurrently, the prevalence of device financing options from manufacturers could be driving an uptick in SIM-only plans with operators.

An alternate view is that the value consumers perceive from their smartphones is now outstripping the total value of the contract – making it an easier decision to buy outright. In the premium segment in particular, the smartphone as a luxury item implies a greater propensity to buy outright, like any other luxury item, potentially financed through personal debt such as credit cards.

Graph 8: Proportion of users on a monthly contract which includes the phone

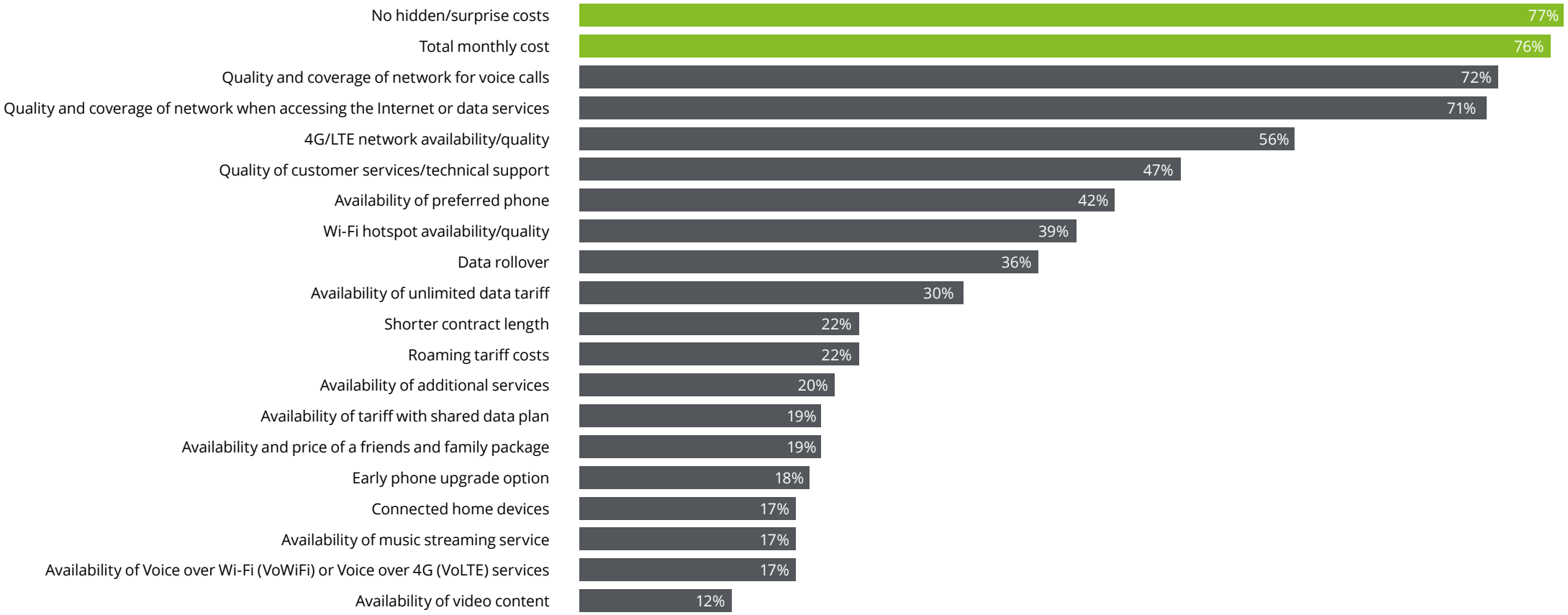
Is your main phone on....? (Answers for 'A monthly contract/post-pay which includes the phone')



Note: Latest iPhone = iPhone X in 2018, iPhone 7/7S in 2017
Latest Samsung = Galaxy S9/S9+ in 2018, Galaxy S8/S8+ in 2017

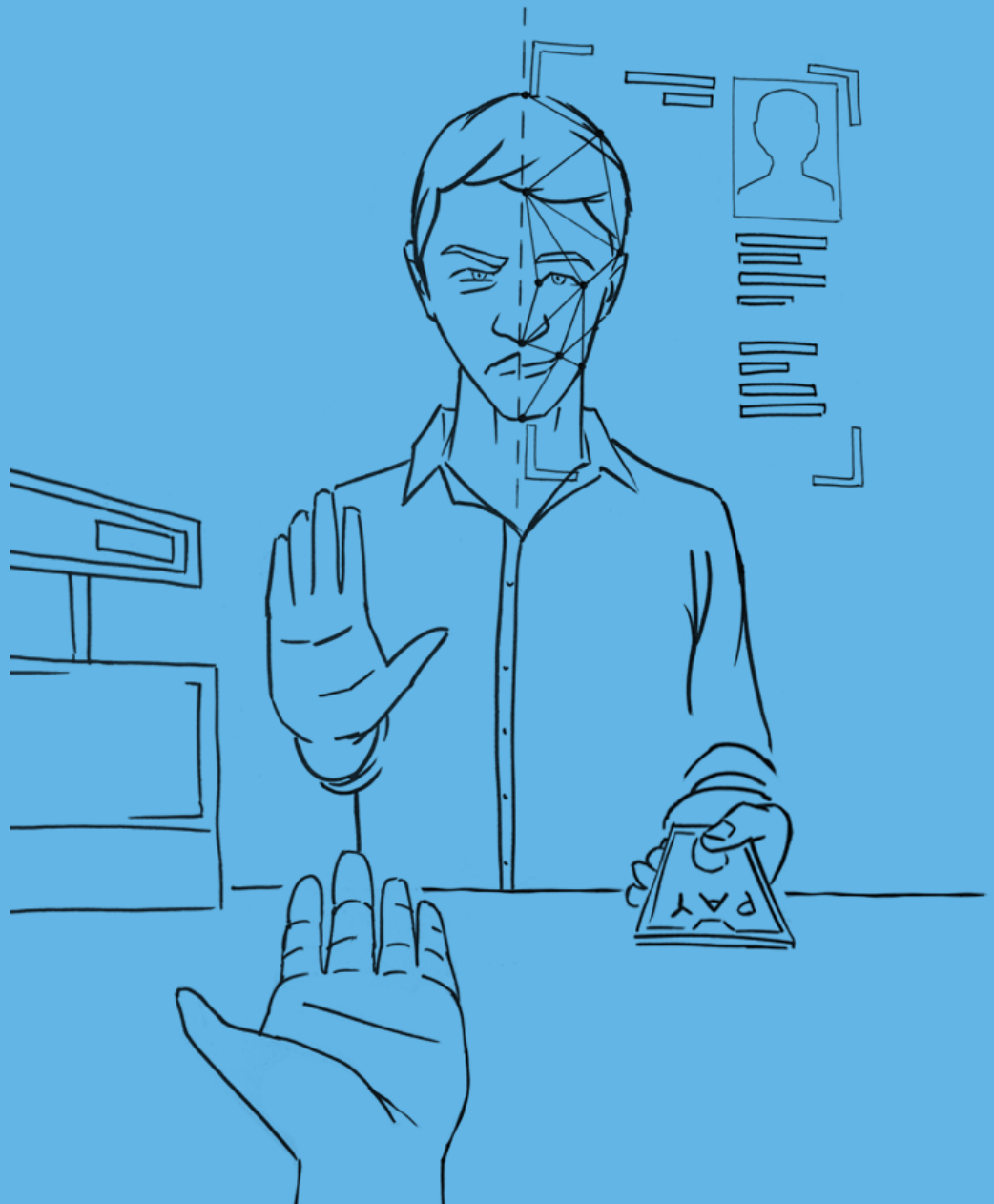
Graph 9: Importance of phone plan service offerings

Which services are important to you? (Those services ranked very important only)



Dichotomy of trust

Biometrics are becoming increasingly common for smartphone users, with fingerprint functionality achieving heavy adoption on compatible devices. And despite growing privacy concerns, we are sharing more than ever. For now at least, the utility derived from our mobile services simply outweighs the cost to our privacy.



Biometrics on point

Move over passwords, fingerprint utilisation increased by 23% from 2017 and roughly four out of five of respondents with fingerprint functionality are using it for authentication.

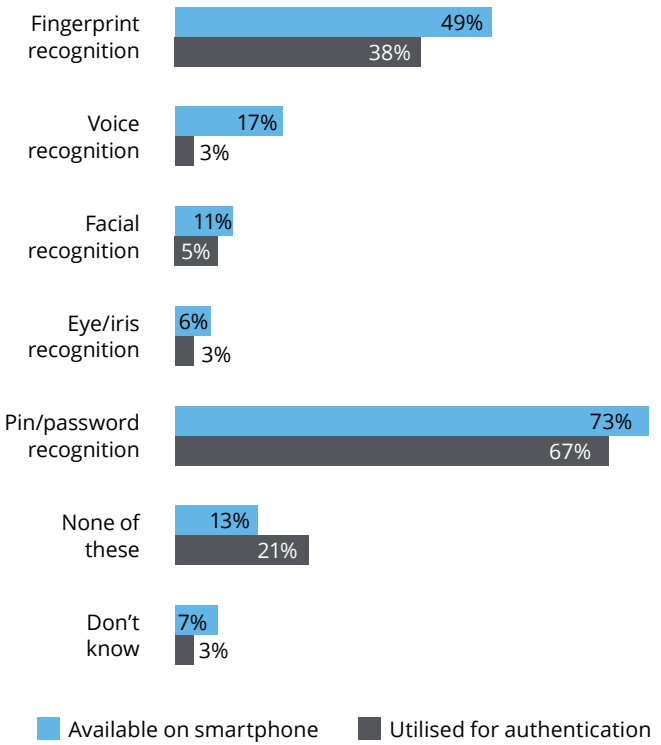
Evolving toolkits

Move over passwords, fingerprint utilisation increased by 23% from 2017 and roughly four out of five of respondents with fingerprint functionality are using it for authentication. While unlocking devices remains the primary use for the function, authorisation of payments and purchases have seen a 53% increase in uptake over the same period.

Other biometric applications are still evolving with only 5% of smartphone device owners using facial recognition as a method of authentication. However, with the latest iPhone release dropping touch ID in favour of Face ID (trademark facial recognition technology)[23], adoption curves for facial recognition will likely start to mirror device penetration curve.

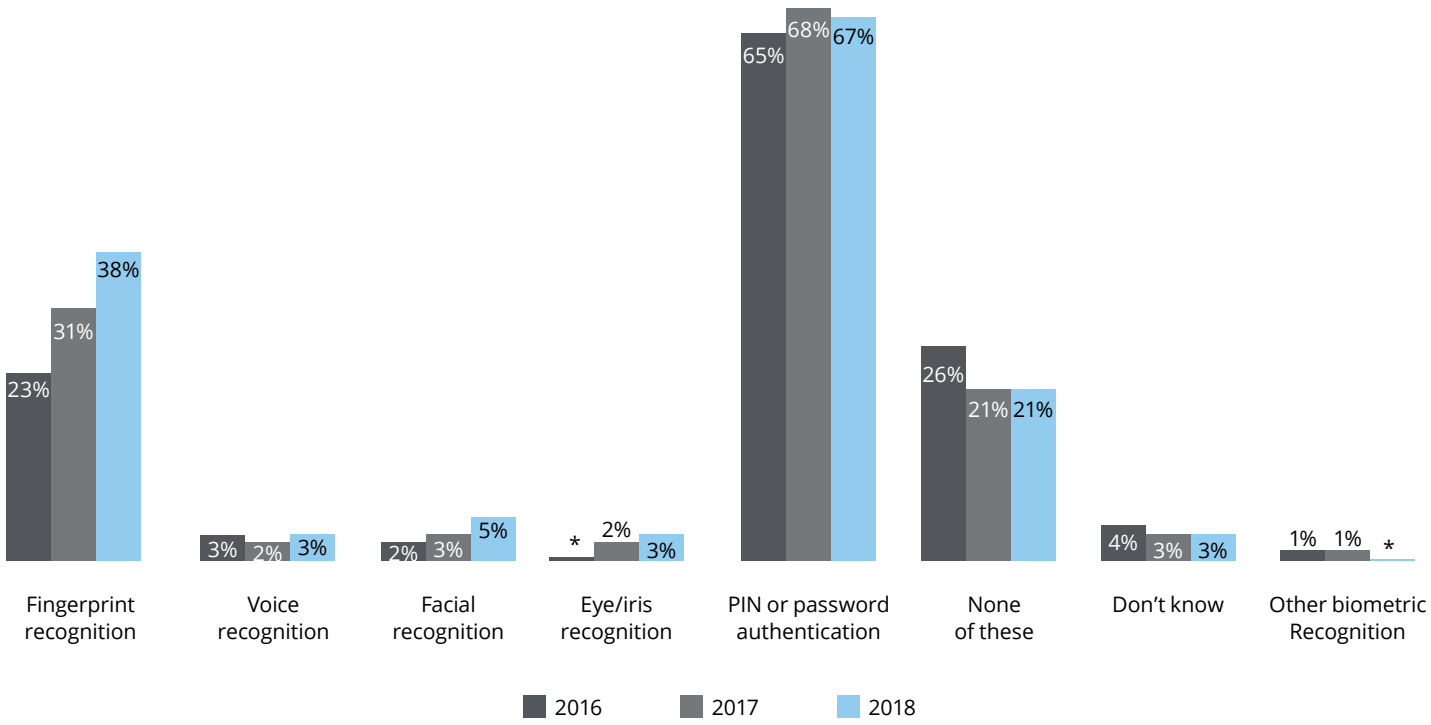
Graph 10: Uptake of biometrics on smartphones

Which, if any, of the following does your smartphone have?;
Which, if any, of the methods listed below have you used to identify yourself when unlocking your smartphone, authorising mobile payments or other transactions?



Graph 11: Methods of authentication used to unlock phone or authorise transactions

Which, if any, of the following does your smartphone have?; Which, if any, of the methods listed below have you used to identify yourself when unlocking your smartphone, authorising mobile payments or other transactions?



* Eye/iris recognition option was not available in 2016, other biometric recognition option was not available in 2018

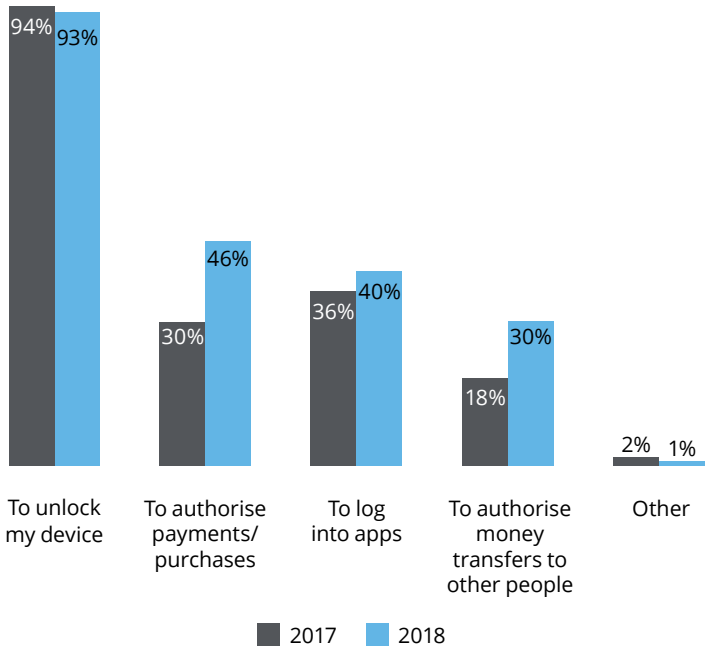
The use of biometrics for authorising payments has soared, up 53%.

The use of biometrics for authorising payments has soared (up 53%) as part of a broader trend that is seeing banking and financial management becoming part of the regular routine for smartphone users, i.e. checking balances, transferring money and authorising payments. Increased comfort in accessing banking solutions via smartphones suggest consumers' adoption of biometrics may be less about the what (sharing of financial information) as it is about who they are sharing with. This includes the 32% of respondents who utilise bank provided payment solutions in-store via their device.

Peace of mind may be one driver of biometric authentication. Highly publicised hacking incidents regularly expose weakness in password authentication while biometrics (namely fingerprint recognition) provides increased levels of assurance when identifying customers. But perhaps the bigger usage driver is the increased ease with which consumers can access and engage with products and services via their mobile devices.

Graph 12: Authentication method used to identify self

How do you use biometrics (e.g. fingerprint, facial recognition, voice recognition) to identify yourself?



What about work?

With 70% of surveyed smartphone users utilising their smartphones for business purposes and 90% of Australian businesses ranking a connected workplace in their top priorities[24], biometric authorisation for online and application authentication offers a number of opportunities. These include management of the employee authentication and experience, including assimilation of office entry cards[25] or enabling a seamless transition from desktop to mobile.

Payments are big money

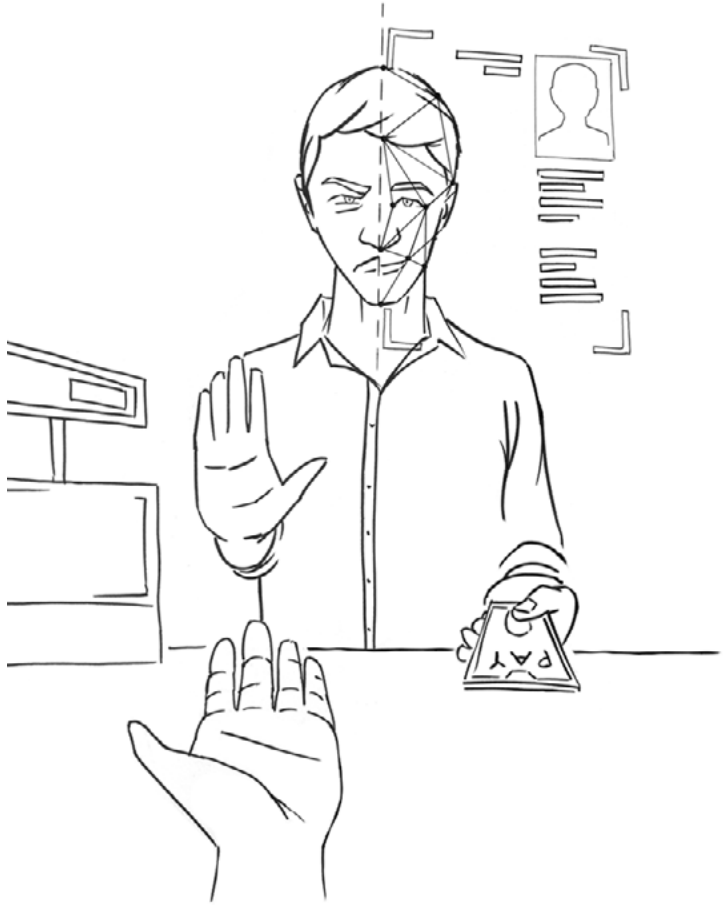
In what is projected to represent 15% of total point of sale transactions globally by 2020[26], contactless payments are becoming big money and Australians are leading the way[27].

Going with the banks

Mobile tap and pay solutions offered by banks have seen growth in adoption. This reinforces investment choices in contactless payment solutions in mobile banking for financial institutions. However, Apple Pay has stagnated over the past year, perhaps due to the fact that three of the four big banks have chosen not to offer the service. Research suggests this could impact customer retention and acquisition, with one in five iPhone users (part of Australia's 8.6m iPhone user base[28]) indicating compatibility with Apple Pay would be an influencing factor for product selection[29].

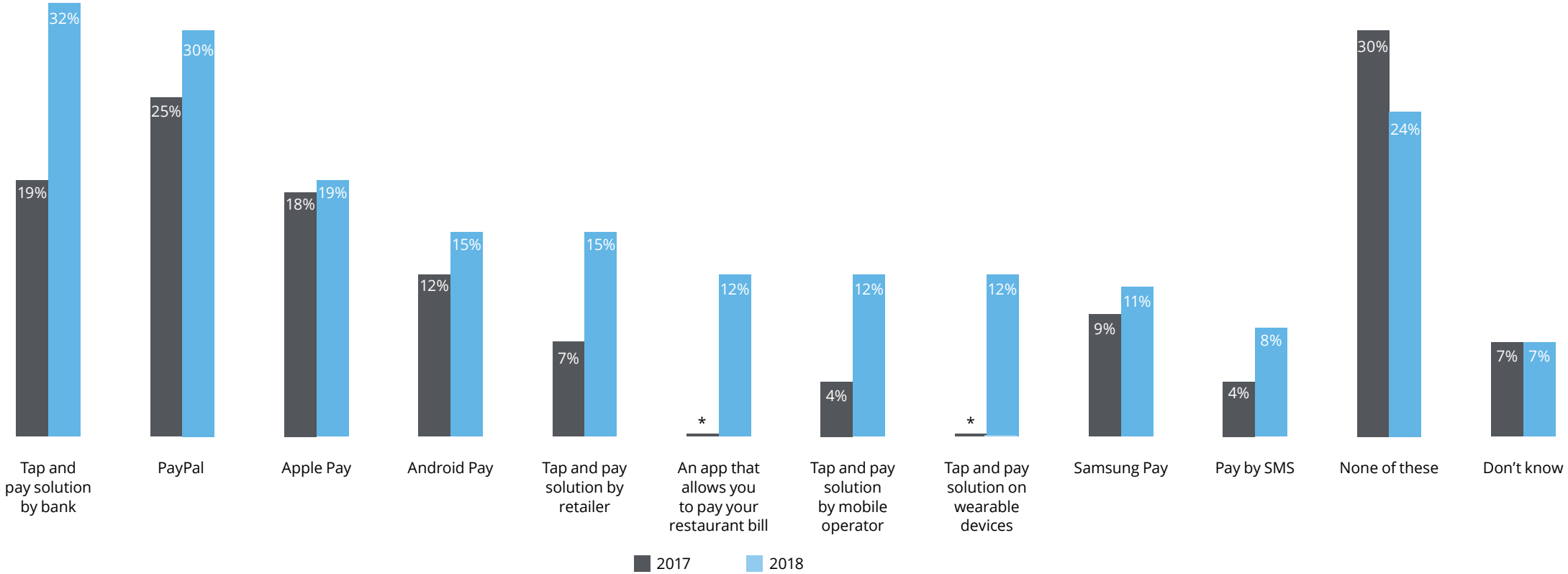
Coupled with growing device replacement lifecycles and increasing platform loyalty (iOS vs. Android), winning the battle for the digital wallet of choice could return high dividends[30].

The consumer trend towards contactless in-store payments is established and growing. The use of smartphones for in-store payments, however, has plateaued adding weight to our 2017 survey findings[31] which identified security concerns (42%) and a lack of perceived benefit (40%) as the reasons for consumers sticking with cards at the cash register. The growing uptake in smartphone biometric authentication could be the key to the payment chain by offering increased security and the convenience of multiple cards in one smartphone 'wallet'.



Graph 13: Payment methods used on smartphones for in-store purchases

Which of the following mobile payment solutions have you used on your smartphone for each of the following?



Base: All adults 18–75 who have used their phone to make an in-store payment

* Response option not provided in that year's survey

Moving to mobile

For browsing and purchasing online, our overall device preference is still our laptop or desktop at 55% compared to mobiles at 25%. However, user preferences to browse via mobile and purchase via their mobile increased by 13% and 26% respectively, year on year. Those aged between 18–24 and 25–34 are far more likely to use their mobile phones when purchasing products online by 76% and 78% respectively, with the next closest age group (35–44) at 61%. The 18–24 age group differentiates itself even further, with 7% indicating this is a daily habit.

A marketplace app (e.g. eBay or Amazon) is the most commonly used platform to purchase products or services online through a smartphone, suggesting a combination of variety and repeatability provide the winning edge. This is consistent with our 'destinations of choice' findings on content consumption and platform preferences in our recent Media Consumer Survey[32].

While in-store mobile payments are increasingly friction-free, when shopping online users typically revert to traditional 'methods' of credit card and online money transfer rather than in-phone functionality, suggesting this is an opportunity for providers to improve the customer online shopping experience through faster payment processes using biometric authentication.

Privacy paradox

A list of well publicised global hacks and scandals are among the likely drivers of increasing public cynicism about how companies handle personal data shared online. As with all exchanges of data, there is a value exchange between the consumer and the enterprise, i.e. privacy for utility, and our data suggests utility still outweighs the cost to privacy.

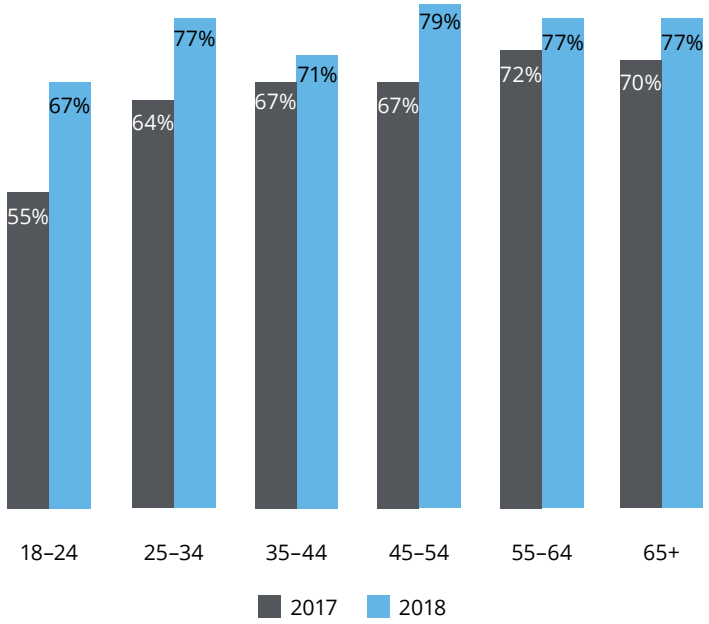
Widespread privacy concerns

An overwhelming majority of Australians surveyed (84%) are concerned about how companies use, store and share their personal data and 76% (15% increase from 2017) of smartphone users believe that companies share their personal data with third parties all or most of the time. Sixty-seven per cent of 18 to 24 year olds (up from 55% in 2017) are becoming more aware, though still haven't caught up to the older generations with 78% of those aged 45 and up believing that their data is being shared with third parties.

Over the last two years we have seen a number of consumer rights challenges (Facebook/ Cambridge Analytica), high profile hacks (Yahoo, Uber, XBOX, Playstation), and cyber attacks on Australian businesses (up 25% from 2016[33]), so it is unsurprising that consumers are concerned. This concern has particular implications for the digital channels and social network players, with the Australian Community Attitudes to Privacy Survey[34] finding that 83% of Australians believe risks are greater when dealing with an organisation online compared to other means and only 17% of Australians feel comfortable with social networking companies keeping databases of information on their online actions.

Graph 14: Percentage that believe companies, all or most of the time, share personal data with third parties

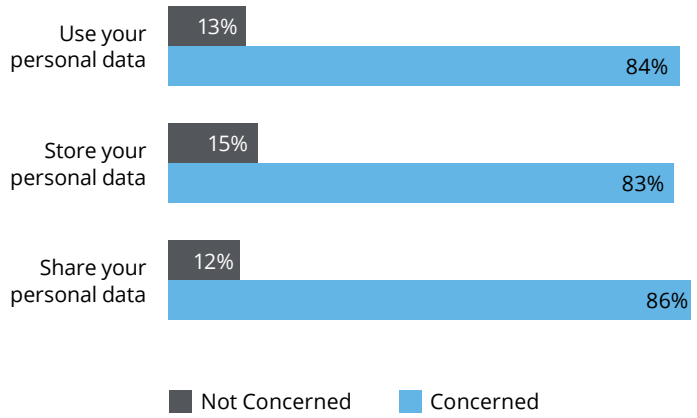
Do you believe that the companies you interact with online share your personal data with third parties (e.g. social networks sharing data with retailers)?



Base: All adults 18–75 who have a phone or smartphone

Graph 15: Concern interacting with companies online

To what extent, if at all, would you say you are concerned about how companies you interact with online...?



Yet the sharing rises

Increased concern and awareness hasn't translated into changed behaviour – with sharing of key personal data (email, name, phone number, photos, address) up across all age groups compared to 2017. There's also been no discernible behaviour change when it comes to reading terms and conditions – 52% always or almost always don't bother to read them, unchanged from 2017. Fifty per cent of us don't clear our browsing history and 43% don't adjust privacy settings on social media sites.

There are network effects at play, be it your social networks (enter FOMO) or your ecosystem networks (Apple vs. Android). Choosing to prioritise personal privacy and to control and protect personal data come at a high price.

The consumer appears cornered on privacy. The choice seems to amount to 'give us your data or you disconnect from the world around you'. One might point to Apple, with its strong and longstanding position on privacy and data sharing, as an example of market forces doing their job. Indeed, Apple iPhone users appear to believe their phones better protect their personal data, as 56% accept terms and conditions without reading them in comparison to 47% of Samsung users. It seems likely that if the value exchange between privacy and utility was sub-optimal, space would exist for new competitors. However, faced with data-hegemony of a few digital players, regulators are starting to step in to protect the cornered consumer. We are seeing legislation in various forms which attempts to give consumers back the power to control their data. Whether they choose to exert that control is another question.

Digital giants shaping our connected lives

In 2018, the ‘global digital giants’ continue to dominate and influence our connected lives, from entertainment, to security, to health. Google, Amazon, and Apple, in particular, are battling it out across the voice assistance domain, betting that owning the voice interface, and in particular the intelligence behind it, may eventually carry similar market power to that of Google in online search.

Voice: a little louder now

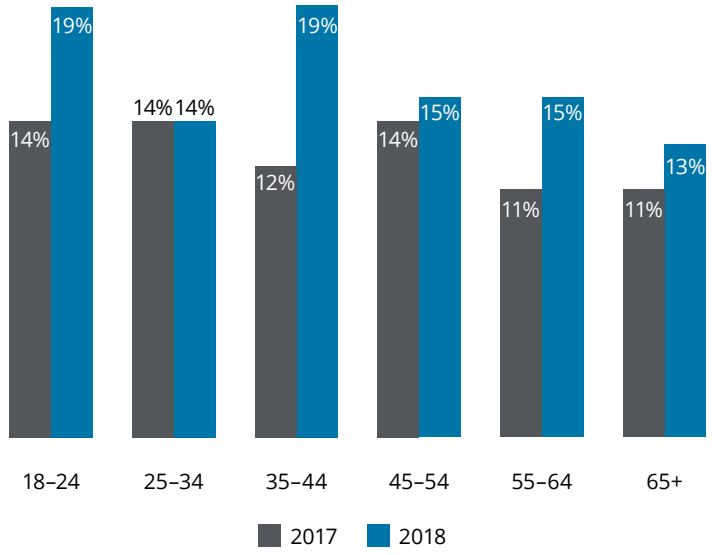
One of the most material shifts in Australian mobile behaviour over the past year is our use of voice assistant technology in our smartphones and other devices in their ecosystems. Voice assistant speakers are starting to establish themselves in our homes, carving out a position alongside the smartphone as a 'remote control' for our daily lives. The ability of in-home speakers to interact with our other connected devices will drive significant competition among 'digital giants' to win through seamless plug-ins to the most attractive ecosystems. Buying into the right ecosystem when purchasing your mobile phone therefore has a greater flow on effect now than ever before.

Voice assistant speakers have seen a 200% growth in the last year, moving from 3% of consumers who own one or more in 2017 to 9% in 2018. Combined with the 16% of Australians who are already using voice assistants on their mobiles, compared to 13% last year, it's easy to see how Apple, Google, and Amazon are currently shaping how we communicate with connected devices.

In the last 12 months, the number of devices and number of digital ecosystems have increased, giving Australians more ways to engage with voice assistants. Almost half of Australians surveyed indicate they are aware of the voice assistant software on their device. There was also a spike in the overall adoption of voice assistants – voice is on the rise.

Graph 16: Voice assistant usage on any device by age

When was the last time you used the voice assistant on the following devices? (View of those who have used a voice assistance ever)



Smartphones favour certain operating systems and assistants, so it makes sense that Apple, with 42% penetration in the Australian smartphone market, leads the pack.

When it comes to mobiles, voice assistants such as Siri have been available on iPhones since 2011[35]. Android manufacturers have more recently built in third party software – such as OK Google in 2015, and Samsung Bixby in 2017[36]. At home, or rather in-home, Google Home launched in Australia in July 2017, quickly followed by Amazon Alexa[37] in January this year, with these devices most popular amongst 25–34 year olds, who have an adoption rate of 13%.

Smartphones favour certain operating systems and assistants, so it makes sense that Apple, with 42% penetration in the Australian smartphone market, leads the pack. Siri is available across Apple's ecosystem, allowing the assistant to transact seamlessly across devices. Siri has undergone many iterations over the past seven years, with increasingly powerful processing to pick up variations in voice volume, accent, and tone.

Meanwhile, natural language processing and cultural learning has since been built into several voice assistant products to ensure they are adaptable across regions. Amazon Alexa has even been 'taught' to pause, take breaths, and whisper to interact more naturally in a family environment[38]. However, the domains the machines are taught to respond to are still narrow, giving Google the advantage of already knowing the top 10/100/1,000 questions people ask on the search engine, and therein developing a more focused set of responses. The next frontier for voice assistants will be conquering the follow up question, with second order questioning capability becoming an R&D priority for manufacturers.

Connected homes are now relying on voice assistant speakers to activate devices around the house – giving speakers that tie in with connected ecosystems an advantage. Unlike in the US, Google Home was one of the first in-house voice assistants released in Australia, gaining it a solid market presence over competitors. On devices excluding a smartphone, Amazon's Alexa was used by 5% of respondents versus Google at 15%. With both highly active in the market, the Christmas period this year is set to reveal Australia's in-home assistant of choice.

Becoming a habit

Not only are Australians engaging with voice assistants, it's becoming a part of our daily lives. Forty-two per cent of survey respondents are aware they have voice assistants on their smartphone. Of this group, 54% are using their voice assistants on a weekly basis. While fewer Australians have voice assisted speakers (only 9%), this audience is much more active in their use, with 47% having used the device in the last day and 20% in the last week.

From checking the calendar to ordering the groceries, we are beginning to rely on our voice assistants (read: 'personal assistants') for many day-to-day tasks.

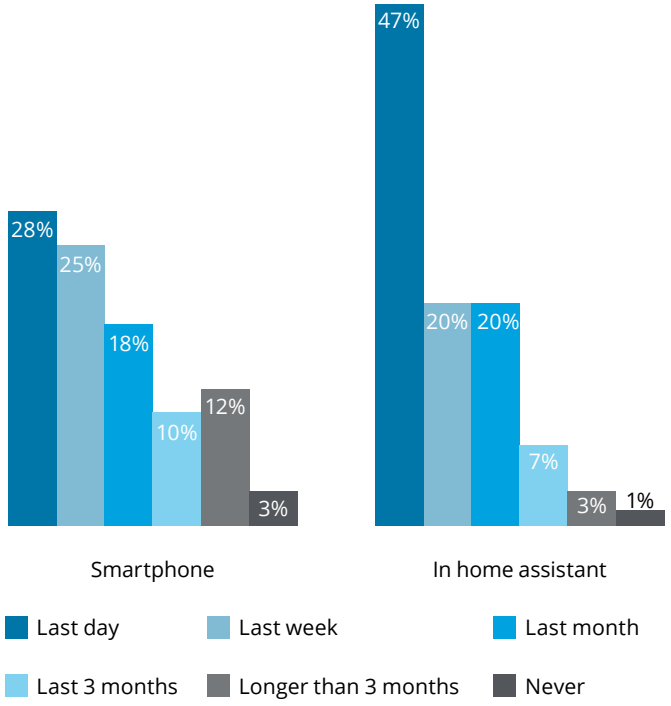
This year's Media Consumer Survey[39] explores the significant marketing implications for brands. For example, search engines allow consumers to view multiple brands and options when re-stocking the pantry, while a single command to a voice assistant to 'order some more Earl Grey' will produce a single result – a sale to the default or top ranking/paying brand.

One of the top ten activities for smartphone voice assistants is to check bank balances. This function was only available from January this year, but Westpac has leapt onto the wave of momentum by launching Siri enabled payments in September[40].

Voice is even becoming a part of the way we operate in broader society, with public use of voice assistants applied in hospitality and throughout public health. Amazon Alexa has won a contract to be installed in Marriot hotels, supporting guests with information on check out times, restaurant bookings, and room service[41]. Alexa also underpins the recently launched DeloitteASSIST, an Artificial Intelligence (AI) enabled patient communication solution for hospitals that helps patients request assistance without the need to press a button[42].

Graph 17: Voice assistant on smartphone versus in-home assistant

When was the last time you used each device (smartphone and in-home assistance only)



Connected home

This year has seen a lag in connected home devices. With the exception of voice assisted speakers, smart home devices such as appliances, smart security systems, smart lighting, and smart thermostats have had no movement in adoption from 2017, all remaining below 10%. Comparatively, connected entertainment devices such as smart TVs and TV video streaming devices continue to experience growth, moving from 42% to 46% and 17% to 23% respectively between 2017 and 2018. Connected entertainment demonstrates how a seamless connection experience and continued demonstration of value, e.g. new content and services, is the foundation connected devices need for mainstream adoption.

Utility and value

As with any connected device, consumers exchange data and privacy for utility and value, e.g. we provide fitness bands with access to our heart rate in return for monitoring services, which allows us to improve and better measure our fitness outcomes. A challenge faced particularly by smart home appliance providers is the demonstration of this utility to consumers.

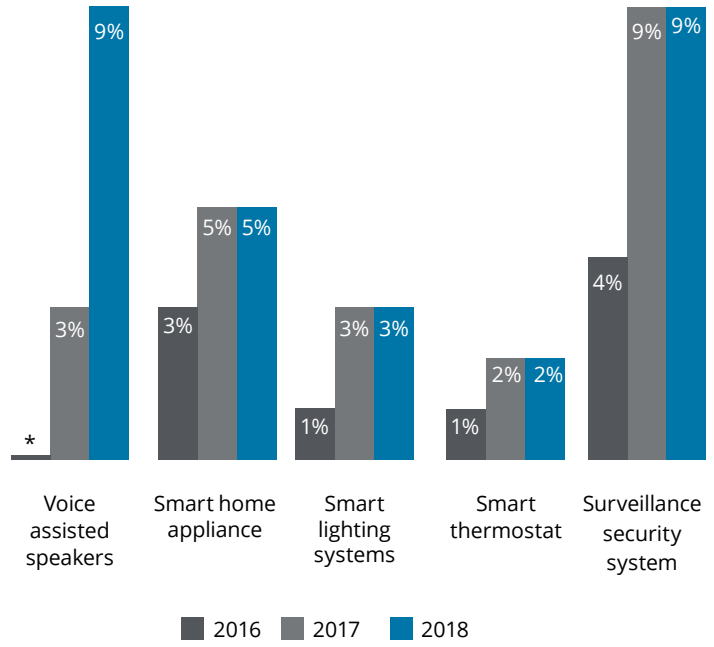
Brands like Samsung and LG have been introducing smart refrigerators with a price tag of $5,000[43], easily three times that of regular fridges. In return, consumers have received features like inventory control and camera functionality. However, a lot of the value attached to this data has flowed back to the Original Equipment Manufacturers (OEMs), allowing them to better understand consumer behaviours to inform product design and creating options for new business models in the future, e.g. subscriptions to automatically top-up perishable items. On top of this, consumers who make the jump are experiencing reduced reliability and new malfunctions, such as firmware updates, while trying to unlock the house-door or turn on the kettle. The true challenge for brands focused on utility is delivering customer experiences that seamlessly address core needs and pain-points versus 'nice to haves'.

Record high electricity prices, may be the trigger required to accelerate the adoption of smart home devices. Residential electricity prices have increased by 63% above inflation[44] over the last decade, more than four times the average price increase across other sectors. Major energy retailers are rolling out disaggregation solutions that allow households to understand energy use by appliance without having to install sensors on every device[45]. This could help reduce an estimated 4.1 hours of energy used per day in summer to cool an empty home – potentially reducing 40% of consumers' bills[46].

With most home devices having replacement cycles of 5–15 years the ultimate opportunity exists for brands in two spaces: new home developments especially those seeking Green Star ratings, and by targeting the 25–34 age bracket, who are twice as likely to own devices such as smart home appliances and lighting systems compared to the survey average.

Graph 18: Voice assistant device ownership

Which, if any, of the following devices do you own or have ready access to?



* Response option not available in 2016

Smart not just connected

Fundamentally, what may be holding smart home devices back is that consumers want smart not just connected; instead of having standalone apps for each device, consumers want something that seamlessly connects and works autonomously in the background[47].

Smart home speakers like Amazon Echo, Apple HomePod, and Google Home may be the answer. They have experienced rapid growth over 2018, with the market expected to hit $30bn by 2024[48]. Amazon as a market leader, now integrates with more than 20,000 devices from 3,500 brands[49].

Google Home is working to catch up, combining ease of integration (currently compatible with more than 5,000 devices[50]) with Google services and products, for example, by offering incentives such as a six month subscription to YouTube premium for every Google Home Hub[51]. These smart home hubs provide the foundation for connected homes, delivering ease of integration and removing the need to rely on standalone apps. With one simple word, 'goodnight', your lights turn off, your thermostat turns down, and your doors lock.

Smart TVs and TV video streaming devices saw an increase in adoption at 10% and 35% respectively.

Key to entertainment

On demand entertainment remains the most popular connected home use case and continues to grow. In particular, smart TVs and TV video streaming devices saw an increase in adoption at 10% and 35% respectively. Game consoles saw a modest rise in the last year of 3%. This category continues to grow while other connected devices have stalled, e.g. smart appliances, flattening in 2018. A number of factors differentiate entertainment devices.

Smart TVs and streaming devices, e.g. AppleTV, Chromecast etc., have benefited from the proliferation and growing popularity of SVOD services, with 39% of respondents having access to SVOD (e.g. Netflix, Stan), 61% of which are those aged between 18–24.

With the rise of Netflix and other streaming services since 2015, connected home entertainment devices are our channels to access the rich ecosystem of on demand entertainment. This means consumers see streaming as a basic function of a TV and a requirement for an in-home entertainment experience.

In parallel to the rise of SVOD, we have hit the 10 year anniversary of popular smart TVs with Samsung releasing one of its true smart TV's 'PAVV BORDEAUX TV 750' back in 2008[52]. With TVs having a replacement life of 8–10 years[53], and non-connected TVs being phased out, smart TVs have become the norm.

This can be evidenced by the faster growth among older age brackets who have typically shown a slower adoption rate of new in home entertainment, with smart TV adoption increasing almost twice as fast as all survey respondents (19% vs 10%) for 55–64 year-olds.

We use smart TVs more than any other connected home device, with 81% of survey respondents using smart TV daily. Combine that with the average Australian consuming around two hours of video streamed content daily[54], smart TVs have a firm hold on our living rooms, bedrooms and daily lives.

The continued growth of connected entertainment devices and explosion in SVOD means the relevance of finding the right content for the right medium is more important than ever. The growth of content is not slowing either in-terms of titles or providers (with Disney Play is coming out in 2019). Our Media Consumer Survey 2018 revealed that more than 4 out of 5 consumers value extensive libraries of TV shows and movies but 75% of us want to search through all their content in one place[55]. With Netflix already knowing so much about our viewing preferences, the company is in a strong position to enhance its recommendation engine and personalisation capability to greatly improve the consumer's viewing experience.

Connected health

Despite strong growth in the last three years, this year adoption of wearables has been flat, with fitness bands falling to 19% from 20% and smart watches remaining at 9%. Dynamics in the wearables space are shifting. The functionality we've seen so far is merging into existing devices and new categories are emerging with exciting features. Fitness bands are reaching saturation as second generation devices aren't markedly different from first generation ones, and much of the basic health tracking functionality is being absorbed by smart watches and smartphones. But this space is just heating up, with digital giants like Apple accelerating the advancement in technologies such as voice assistance, battery life, smarter AI, and moving wearables from a domain focus on fitness to health.

In health monitoring, the next wave of wearables has room to grow: expect features like blood glucose, UV exposure and blood pressure monitoring, intelligent bandages and more. These devices will not just be about tracking, but about sensing patterns and managing lifestyle diseases, e.g. diabetes and hypertension[56]. The transition to a health ecosystem will include integration with Electronic Health Records – allowing for better health management and access to data, but also opening privacy concerns. Apple has been pursuing this space aggressively, launching HealthKit in 2014, followed by ResearchKit and CareKit, allowing researchers and developers to build apps that tap into mobile and wearables functionality to manage long term health care conditions[57]. These development kits mean consumers can collate and analyse their own data, sharing it with a party they choose. With one in two Australians having some form of chronic condition, e.g. cancer, diabetes, cardiovascular disease[58] and 4m Australians over 65 (expected to be over 8m by 2050)[59], the upside potential of wearables in monitoring these conditions is significant. Wearables need to be careful in this pursuit as they move towards health and fall into new areas of regulation and scrutiny. This requires devices to be highly accurate and sensitive to ensure our hospitals don't get flooded by Apple Watch owners with false positives (misdiagnosed alerts).

Winning the wrist

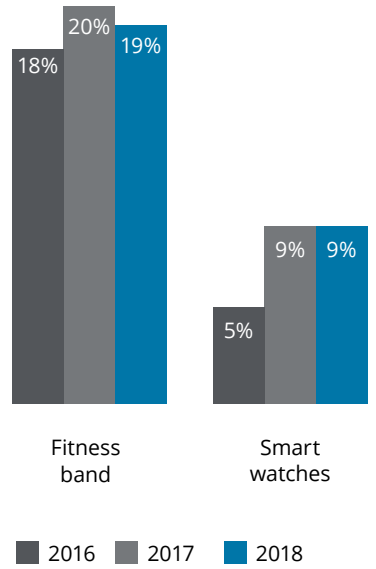
Smart watches may be overtaking fitness bands as they link into an app ecosystem (e.g. Apple) and have absorbed much of their functionality[60]. They also serve as an extension of the smartphone, offering the possibility to interact with the phone more discreetly (e.g. declining a call) and reducing phone screen usage. They are primarily popular with the younger cohorts: 16% of those aged 24–35 have a smart watch almost twice that of the average of 9%. However, the addition of health features such as Apple's recent announcement of ECG and fall detection may make them more popular with older demographics.

Smart watches must strike a balance between functionality and fashion – with size and aesthetics key considerations that may limit more advanced sensors. The enterprise smart watch space – where size and aesthetics would be a lesser concern – remains largely unexplored and could include GPS tracking, biometric access, and other useful functions.

16% of those aged 24–35 have a smart watch almost twice that of the average of 9%.

Graph 19: Voice assistant device ownership

Which, if any, of the following devices do you own or have ready access to (fitness band and smart watch only)



Note: Only includes a selection of devices

A voice in your ear

The emergence of voice control is also affecting the wearables space as we see increasing growth of no-touch user interfaces such as voice and gesture control. In-ear wearables are likely to be boosted by the growth and improved precision of voice assistants – like a having a smart home speaker 'on the go'. These devices will increasingly blend sound and calling with live translation, voice assistance, noise cancelling, and a range of other features[61]. Apple's AirPods, an early version of these devices, have been an overwhelming success – 98% customer satisfaction[62] and strong sales – with enhancements such as noise cancelling, water resistance, and increased range planned for 2019[63]. Google is going toe to toe with Apple launching Pixel Buds that offer unique services like live translation of 40 languages.

Although the updates in 2018 may seem minor, a few elements are a clear step in the evolution towards ambient computing – when devices all around us will communicate seamlessly with us and each other. The combined experience of a smart home speaker, smart watch, smart phone, and hearables will allow us to effortlessly interact with technology no matter where we are or what we are doing. Accordingly, while 2018 saw Australian consumers put a 'pause' on wearables, the next generation of devices and their enhanced applications in health and connection to voice will provide a strong foundation for new growth.

Check out the Australian Mobile Consumer Survey website here:

deloitte.com/au/mobileconsumer

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