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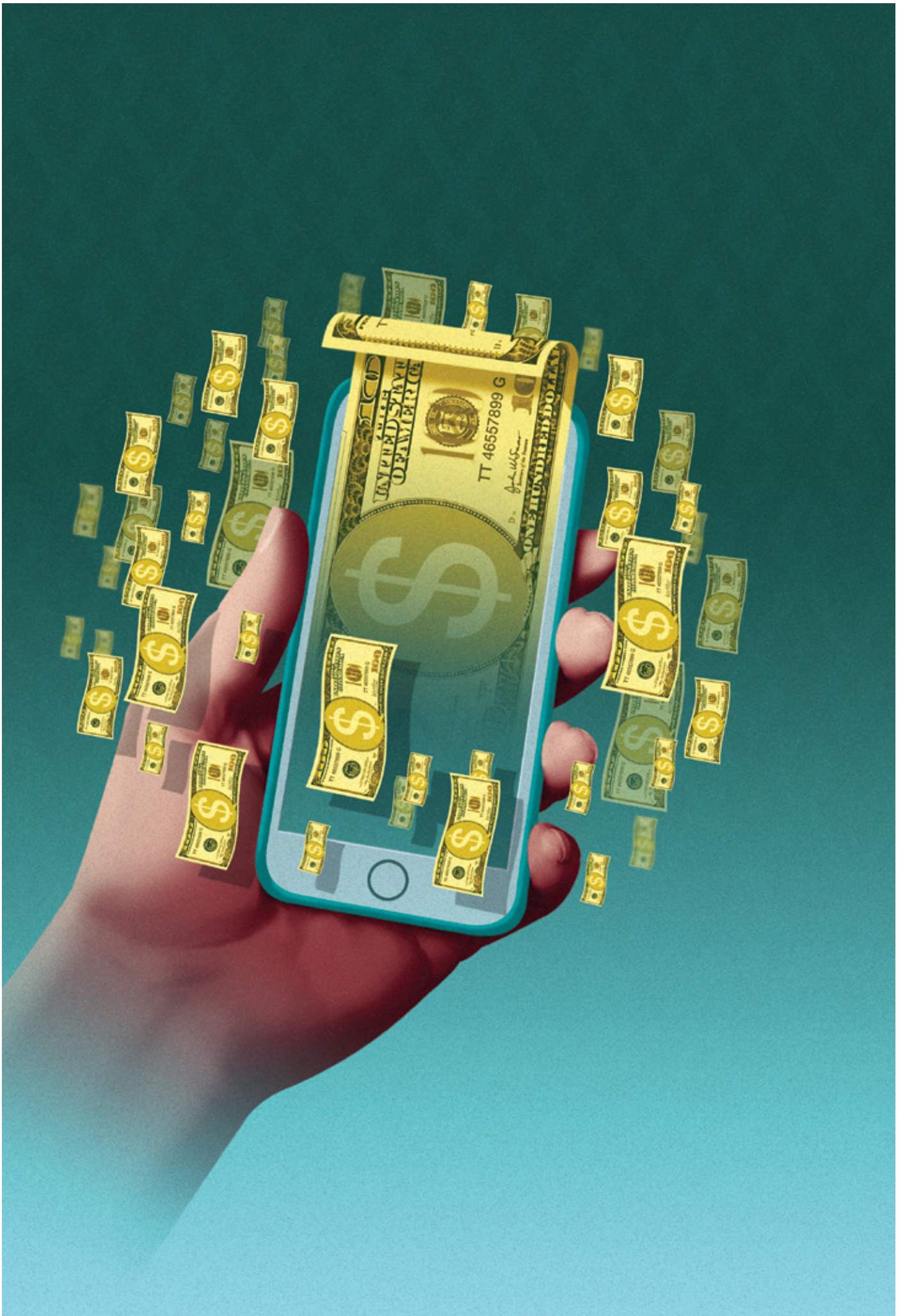


**Technology, Media, and
Telecommunications**
Predictions 2020

Deloitte Australia is pleased to share this summary of our 2020 Technology, Media and, Telecommunications Predictions report.

Our annual Predictions provide insights into ‘the smart future’: the technologies and trends that offer growth and transformation opportunities across the business landscape. This year’s Predictions focus on a range of relevant topics, including edge computing, private 5G, AI, content-delivery and consumption trends, and more.

Download the full report at www.deloitte.com/au/tmtpredictions



The smartphone multiplier: Towards a trillion-dollar economy

WHILE SMARTPHONE SALES are big business, even that market may soon pale next to the sums commanded by the sale of products and services that depend on smartphone ownership—the so-called ‘smartphone multiplier’ market. We predict this market – which includes selfie sticks, ringtones and mobile ads and apps – will be worth approximately AU\$4.1 billion in Australia this year.¹

Apps, mobile advertising, hardware and wearable accessories will account for nearly 80% of Australia’s smartphone multiplier market.

An increasing number of Australians are worried about the impact of mobiles on their wellbeing, yet many are using these same devices to monitor their health.² To address this struggle between smartphone usage and screen time, we expect the adoption of wearables to increase by approximately 5%.³ Fitness band penetration, the most common wearable technology, is now at 22%, an increase of 3% from last year.⁴

Another booming growth area will be where content overlaps with our necessities. Most Australians will do a mental checklist of their three most important items before leaving the house: phone, wallet and keys. But the growing convenience of mobile is rendering these other items increasingly superfluous. While we don’t expect wallets and keys to be absorbed into our smartphones during 2020, we do see new functions accelerating their demise.

Mobile tap payments and the advancement of e-commerce capabilities, alongside artificial intelligence (AI), computer vision and data, has created the potential for a ‘just walk out’ model of shopping.⁵ Additionally, we expect the adoption of digital driver’s licences to apply to one in three individuals who are eligible to drive in NSW by 2020.⁶ Even keys can’t escape the smartphone multiplier market with digital smart locks becoming increasingly common as consumers embrace keyless security.⁷

This trend is reinforcing the ever-growing importance of ecosystems. Consumer offerings must stand as one-stop shops as Australians are committing to a brand early to ensure interoperability across their devices.

For the smartphone multiplier market, the race is on. Will ancillary services win and become their own entities, detaching from the need for smartphones to function? Or will smartphones evolve to replace ancillary products in the future?



Coming to a CDN near you: Videos, games and much, much more

CONTENT DELIVERY NETWORKS (CDNs) will improve media quality, speed, and reliability by bringing content physically closer to the user. By 2022, CDNs are expected to carry 72% of all global internet traffic.¹ In Australia, we expect local CDNs² to outstrip the global average by 10%.

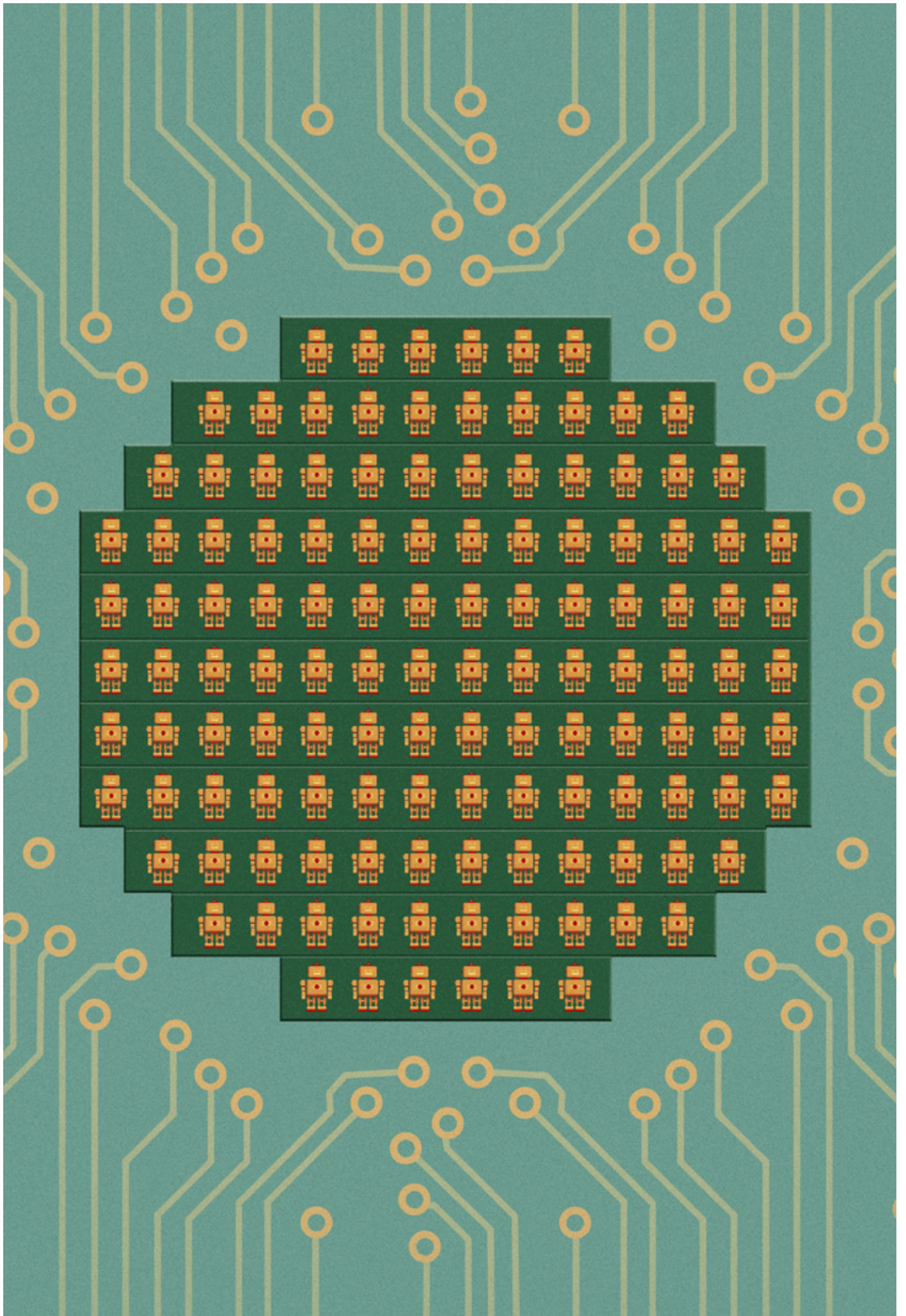
Two-thirds of Australians have access to streaming services and usage has grown 7.9% since last year.³ With the ongoing proliferation of streaming service providers,⁴ backed by the release of 5G from the major telcos,⁵ content providers will need to invest in their CDNs or increase partnership spending to accommodate for Australians' thirst for content, improved quality and complex gaming. Service quality issues will directly impact brand and subscriptions and, with a multitude of streaming options, failure will not be tolerated.

We're also seeing the blurring between networks, CDNs and content providers with the rise of 'telcotainment': where telcos provide their own streaming content, often sports coverage, as a core proposition for consumers. For some of the telcos developing telcotainment propositions, there have been issues with the configuration and capacity of networks to handle live streaming for mobile viewing. Generally, this has come down to the capacity of the CDNs and the cost to upgrade to meet the upper-level of viewing expectations for specific events.

These shifts give CDN providers a prime opportunity to capitalise and grow their position. Growth in sales of 8K TVs in Australia will push streaming services to support higher resolutions through premium offerings, for which backend infrastructure will be critical. We predict CDN suppliers will need to invest up to three times more capital in their backend hardware or risk being consolidated by bigger players.

To keep up with this growth, we predict:

- **CDN providers** – Investment into scale and CDN advances, such as newer compression technologies, will become a defining point of difference between suppliers.
- **Content providers** – Offering higher quality streaming services will put exponential strain and complexity on CDNs. For content providers, decisions will need to be made around continuing to grow their own networks or to partner with leading providers.
- **Consumers** – The ultimate winners in the maturing CDN market will be everyday users of digital media. With digital content providers – such as streaming services, gaming and social media – investing in quality, gone are the days of waiting for a loading bar.



Bringing AI to the device: Edge AI chips come into their own

MANY OF THE apps we interact with today have some level of AI built in already. For most of the 91% of Australians who have a smartphone,¹ the magic in these apps requires a constant network connection to process the information centrally.

But as we continue to see the evolution of new features on smartphones and with new 5G-enabled handsets available this year, Australian consumers will instead start accessing these capabilities through edge AI chips, which perform or accelerate machine learning tasks on the device.

There are no local chipset manufacturing providers in Australia, so much of the innovation surrounding edge AI will be driven from the United States. But Australians are leaders when it comes to embracing new technologies and edge AI will be no different. Although some high-end smartphones already carry the chipset required to process information locally on the device, usage of this technology has much further to grow.

We predict that 66% of the new smartphones sold in Australia in 2020 will carry an edge AI chipset.

The most exciting application of edge AI will most likely happen in the enterprise sector. Australian small businesses, enterprises and the government are often first-movers in adopting new and efficient ways of working. We predict this shift will be felt most readily by businesses in the mining, oil and gas, logistics and supply chain, and automotive and transport sectors.

These industries rely on real-time decision-making, data analytics and resource optimisation, all of which will perform better at scale using edge AI capabilities. Coupled with edge computing (also known as telecom edge, which brings computation and data storage closer to the location where it is needed), edge AI will provide mission-critical capabilities to power drone swarms, fleet-platooning, autonomous vehicles, unmanned aerial vehicles, immersive media and precision manufacturing, amongst other new capabilities.

Businesses that invest in edge AI will not only see benefits across productivity, efficiency and security, but they'll be able to fundamentally reimagine their operations with this technology at the centre. Smart machines powered by AI chips could help expand existing markets, threaten incumbents and shift how profits are divided across industries. For years, AI has promised considerable progress – as it moves to the edge it could finally deliver.



Private 5G networks: Enterprise untethered

WHILE CONSUMER 5G services were launched in 2019, we expect private 5G networks to gain momentum in Australia across 2020 as the next frontier of technological innovation. Private 5G is a local area network (LAN) that uses 5G technologies to underpin a dedicated network within a defined area. This shift will be driven by enterprises and government, which will seek the reliability, coverage and latency benefits that private 5G offers.

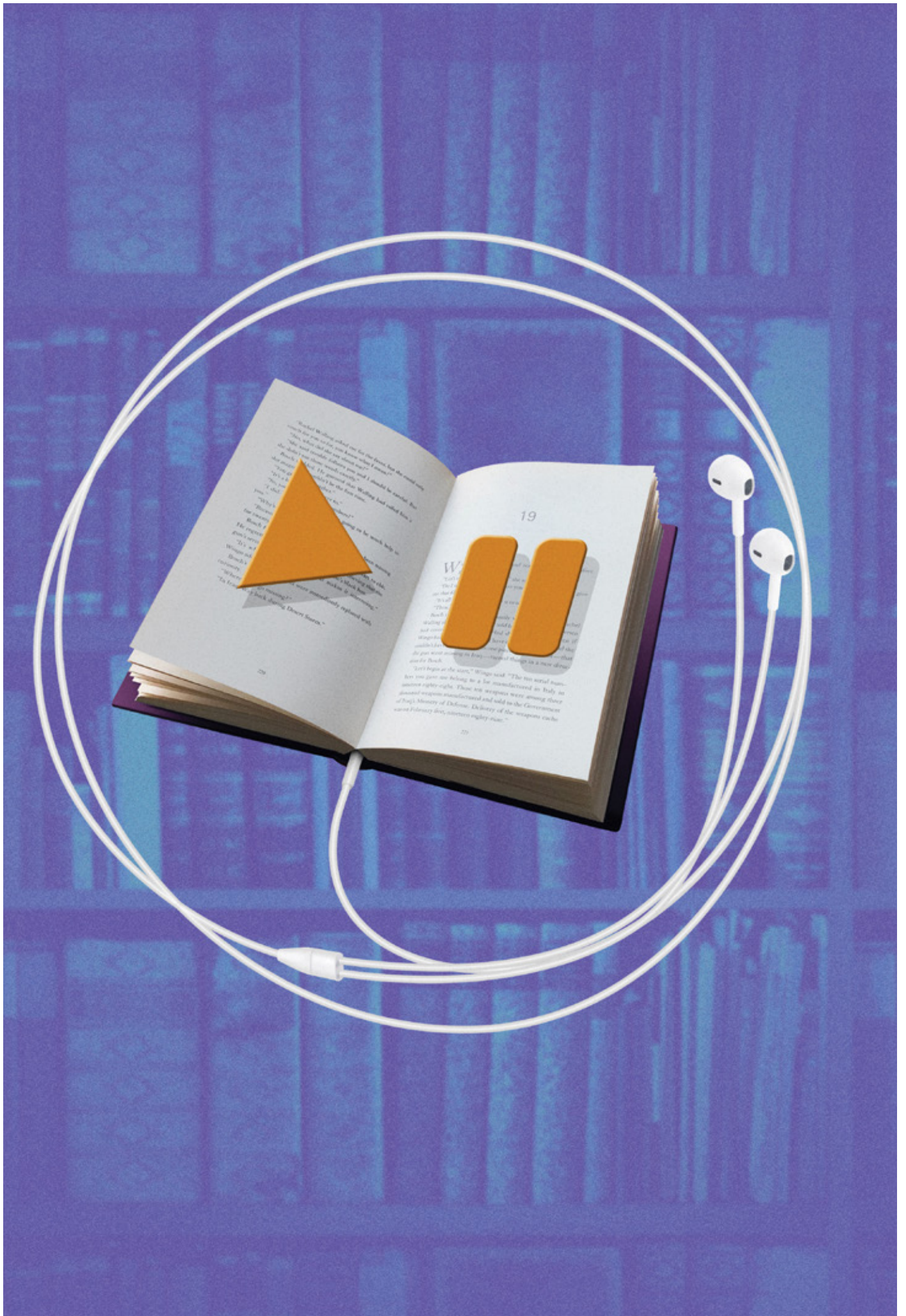
By the end of 2020, we predict more than five enterprises in Australia will have begun trials for private 5G deployments, collectively investing millions of dollars in labour, equipment and research. Mining, utilities, ports and universities are the areas with immediate promise, with 5G enabling high-volume automation and reshaping research in what the future of these sectors may look like.

For this reason, we expect private 5G's value proposition will move from cost reduction to process re-invention, especially in campus-style deployments (such as universities, hospitals and mine sites) and remote-controlled operations (such as agriculture, oil and gas, and ports). For example, in the education sector, The Optus-Curtin Centre of Excellence in AI¹ brings together Curtin's research capabilities and Optus' technology to create a living learning environment. Private 5G can be the next generation of connectivity, bringing a diverse set of education, research and campus use cases to life – for students, visitors, faculty and researchers.

5G will provide the speed and reliability to replace the cable. Further, as companies look to upgrade, expand or replace existing IT systems, 5G will deliver a fully mobile solution. We predict private 5G networks will find a place in the Australian enterprise telecommunications landscape, though for now we see it coexisting with existing mobile technology. This includes network slicing, which does not require private infrastructure and WiFi 6, which promises higher speeds and expanded coverage for enterprise needs.

Australian businesses and enterprises must think and invest in selecting the correct connectivity solution for their needs – from WiFi to private LTE and private 5G – as each of these options has its own characteristics and differentiators. This is increasingly important in a world where drones, self-driving vehicles and professional robots will play a significant role in future business models.

Private 5G can be leveraged as a means to enable cutting-edge use cases to transform businesses, by encouraging enterprises to move to a completely autonomous, self-healing, secure and wireless world. It's a future that Australian businesses and enterprises need to start considering today.



The ears have it: The rise of podcasting

PODCASTS ARE OUTGROWING their niche status to emerge as a substantive market in their own right. Podcasting is still a relatively small player in the overall Australian media landscape, with between 8%¹ and 22%² of over 12-year-olds listening on at least a monthly basis. However, audience uptake is increasing at impressive rates with over 1.6 million Australians now regularly downloading content, an increase of 70% since 2015.³

We expect this growth to continue with Australian podcasting revenue outstripping the 30% rate predicted globally to hit AU\$47 million.⁴

The growth appears to be driven from both the demand and supply sides. Australia's love for mobile devices, our ever-busier lives and our insatiable appetite for entertainment and educational content are creating a strong pull: weekly podcast listeners consume on average four series and six episodes per week, with heavier users consuming more than 11 series and episodes per week.⁵

The genres driving most demand are news and current affairs (36%), followed by comedy (28%) and true crime (25%).⁶ This is reflected in the content creation space. News publishers are using podcasting to go deeper with topic-specific

deep dives, or wider with the dramatisation of investigative work. Meanwhile, independent content creators are focusing on high growth, non-news categories, taking advantage of the low production cost and complexity to enter the market.

Equally, advertisers, agencies and media buyers are also increasing their comfort and sophistication with how they use, measure and integrate the channel with wider marketing efforts. To drive the greatest impact in this space:

- Brands should look at a range of options including audio ads, branded/sponsored content and bespoke content creation.
- Publishers must maximise return by making it easy for brands to buy basic inventory and understand value. They must also support advertisers into branded or sponsored content once they are comfortable. Additional revenue opportunities may also exist in content sales and licensing for those who can master the format and deliver high production values.
- Content creators should target audience scale in order to drive ad-based returns. For those mastering creative and execution, there may also be opportunities for content sales and producing branded content.
- Agencies and media buyers need to develop strategic and creative offerings in the channel. They must start treating podcasting as a standalone channel rather than part of radio and streaming.



High speed from low orbit: A broadband revolution or a bunch of space junk?

WITH ITS LARGE geographical footprint and dispersed population, Australia is well placed for low-earth orbit (LEO) satellite communications. Deloitte predicts when LEO satellite communications launch in Australia (likely the second half of 2021) there will be significant interest and uptake for those customers who do not have high-speed connections by fixed technologies, with more than 50,000 connections expected by 2022.

Following the full deployment of satellite constellations, Deloitte predicts this technology will capture more than 10% of the high-speed broadband market, due to the wider coverage of satellite networks and a low-cost strategy.

We expect the next three to five years will see the scale out of commercial LEO satellite-based offerings to Australian consumers.

The National Broadband Network (NBN) roll out has lifted the expectations of Australian retail and enterprise customers to a minimum need for high-speed internet. However, in parts of the country, most commonly regional areas, a lack of high-speed communication is a barrier to growth, optimisation and investment. Three sectors among Australia's biggest contributors to GDP – mining, energy and agriculture – are geographically dispersed and not able to exploit completely the benefits of the communications revolution across all their sites.

With LEO access, the benefits of cloud computing, data analytics and remote operations may be more fully utilised by these important sectors.

State and federal governments are enacting a 2050 plan for the growth of regional Australia with the development of digital hubs to entice enterprises to move their operations to regional areas. This can only be achieved by bridging the communications divide and ensuring the cost of communications remains competitive.

No Australian organisations have announced they will compete in the LEO communications market; as such, all potential LEO providers will be new market entrants into Australia.¹ These companies will also face significant competition against the existing wired network. It is unlikely this new product will be able to compete on quality, so price will likely be its key differentiator.

Consumers and enterprises will be the ultimate beneficiaries of this increased competition as it will likely drive lower prices and/or increased reliability for those providers differentiating on quality. The arrival of new entrants to the Australian market, while expected to be a relatively small market share, may challenge the profit models of existing providers particularly as it pertains to providing communication services to rural and regional Australia.

Endnotes

THE SMARTPHONE MULTIPLIER: TOWARDS A TRILLION-DOLLAR ECONOMY

1. Assuming global smartphone sales are 1.5 billion, the Australian market share of global smartphone sales is 0.006%, and that the ratio of smartphone sales to smartphone multiplier globally is the same in Australia.
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4. Deloitte, Deloitte Global Mobile Consumer Survey 2019 – Australian Cut, November 2019.
5. Aleks Vickovich, '7-Eleven opens its first cashless and cardless store in Australia — and apparently you'll be able to checkout in seconds via its app', Business Insider, 29 May 2019.
6. Our prediction is primarily driven through the fast adoption and positive customer feedback. Within the first week of adoption, approximately 12% of individuals in NSW who were eligible to do so obtained a digital driver's licence. Additionally, of those who have adopted, 97% provided a positive rating for the new licences. Asha Barbaschow, '12% of NSW drivers opted for digital licence in first week', ZDNet, 6 November 2019.
7. Deloitte, 2019 Deloitte Global Automotive Consumer Study, 2019.

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1. Deloitte, Deloitte *TMT Predictions 2020*, December 2019.
2. The below list is just a sample of mainstream CDN providers in Australia. Most telcos also offer CDN services.
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 - Fastly
 - KeyCDN
 - MetaCDN
 - StackPath
 - MaxCDN
 - Amazon CloudFront
 - Microsoft Azure CDN
 - CDN77
 - Leaseweb

Mike Williams and Desire Athow, 'Best CDN providers of 2020 to speed up any website', TechRadar 30 January 2020.
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4. Australian content and streaming providers:
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 - Foxtel Now
 - Amazon Prime
 - Disney+
 - Apple TV+
 - Hayu
 - 10 All Access
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4. Statista, 'Value of podcast advertising revenue in Australia from 2013 to 2017, with forecasts until 2022', accessed 11 February 2020.
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HIGH SPEED FROM LOW ORBIT: A BROADBAND REVOLUTION OR A BUNCH OF SPACE JUNK?

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