2023-24 Industry View

Australia & New Zealand Telecommunications

NOTE: For Ease of Reading in Workdocs, ‘placeholders’ highlight each section
PLEASE DELETE THESE TO CREATE A ‘PUBLIC FACING DOCUMENT”
THEN: Renumber the Table of Contents.

September 2023

Data Driven

Delivered to you by: aws

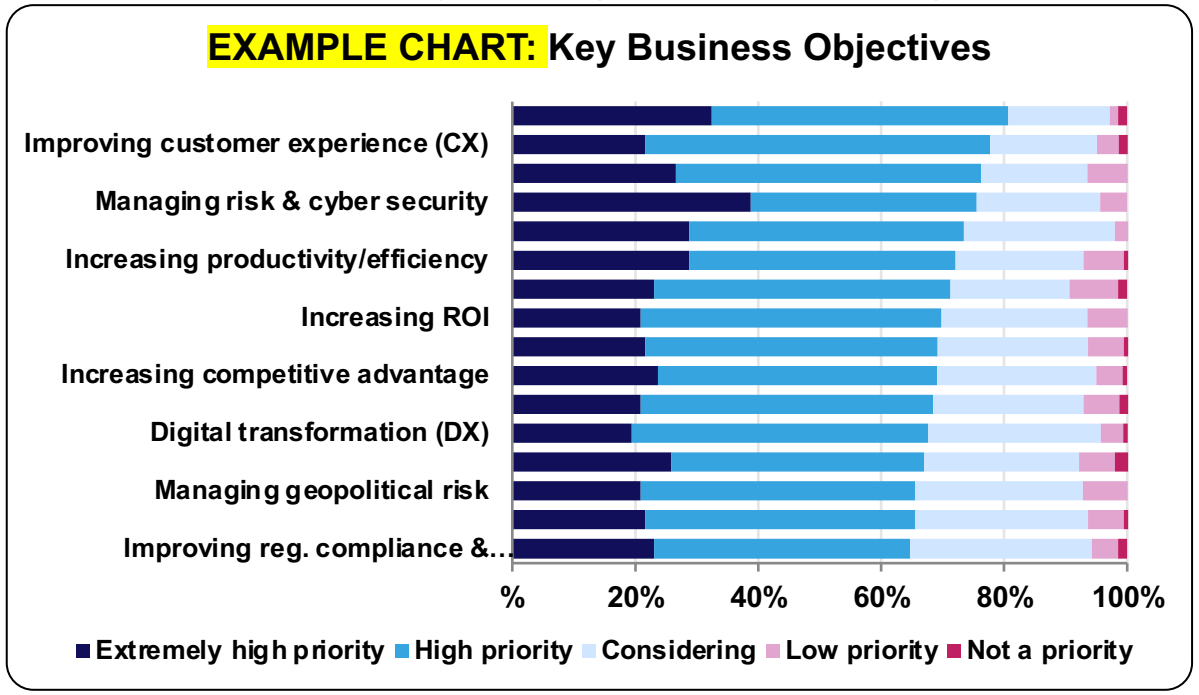
AWS INTERNAL: How our OneTeam can leverage these Industry Insights

AWS INTERNAL: How Sales & Marketing should Interpret the Charts

As you look at the data – think very carefully about how you will use it to **create a story**.

To raise a question, **test a possible concern**, elicit a **response**, identify a **need**, establish **rapport**, get an objection, or just start a **conversation** '…*what do you think about this new report on local B2B and ICT issues in this market?*'

The key is to get them talking!



- **Navy Blue** = the highest priority or significance
- **Pink and Red** = the lowest scores

How to think about the data - use it to build a story:

- **Navy Blue:** They are very focused here.
  Is there an **opportunity to help them focus more** – or get them to move their focus to an AWS Solution?
- **Sky Blue:** This is a secondary but still important focus.
  Is there an **opportunity to help them increase their focus** or do it better?
- **Light Blue:** Thinking about it or not done much yet (POC?)
  This should be viewed as an **opportunity to suggest an AWS solution or augment** existing solutions.
- **Pink & Red:** Low priority or importance.
  Use this to **start a conversation about why** this is not a priority? If it matches an area where AWS has a solution, **start 'educating' your prospect** about why they may want to consider this.

AWS INTERNAL: Translating Industry Insights into the 6-box Drivers

	Telecommunications Industry Overall	Content Production	Broadcast	Streaming/ OTT	Publishing/ News	Radio	Entertainment	Sports	Advertising	Ticketing
Influences			Craig to do							
Challenges										

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TABLE OF CONTENTS

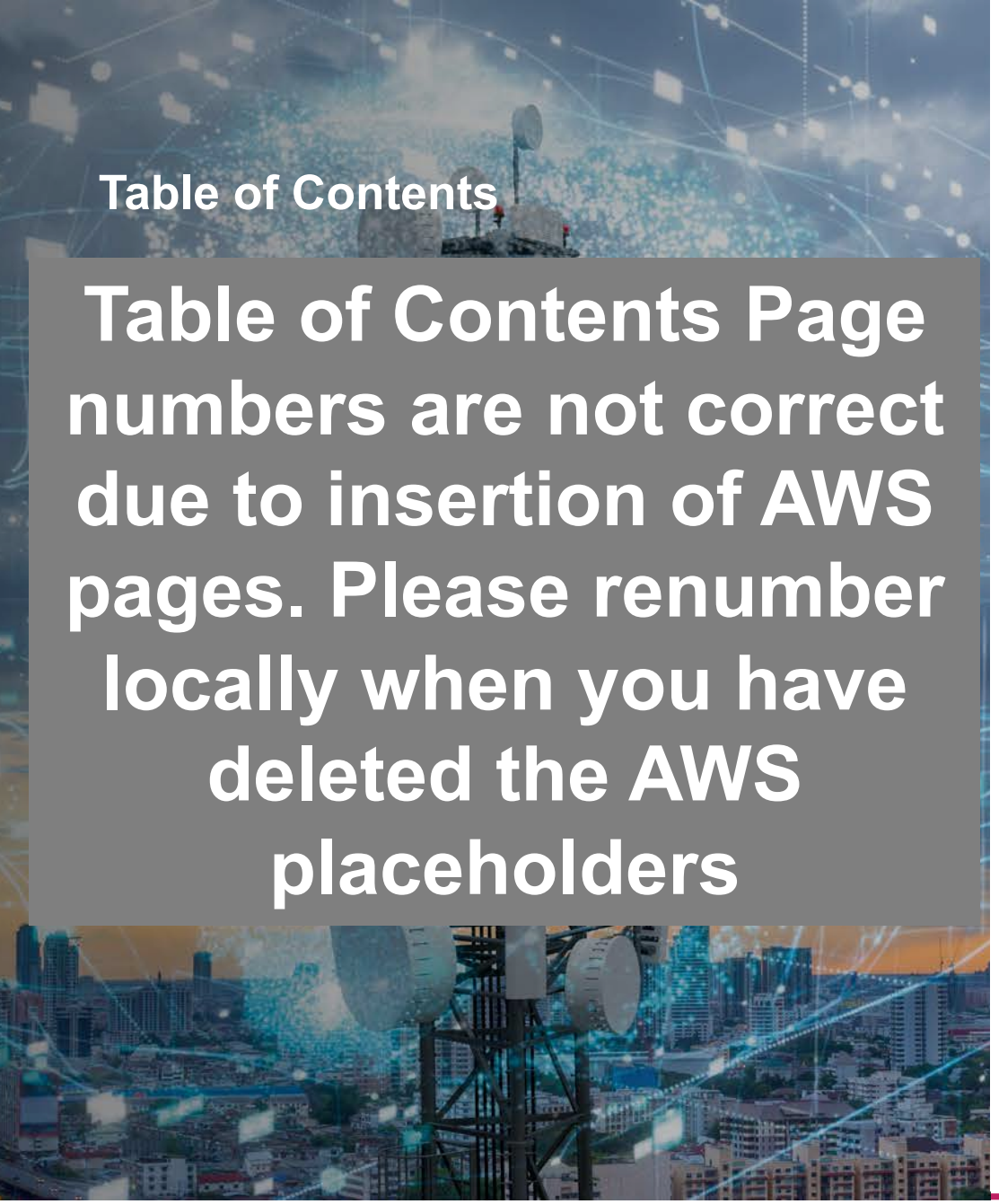


Table of Contents

Table of Contents Page numbers are not correct due to insertion of AWS pages. Please renumber locally when you have deleted the AWS placeholders

Foreword | 08
Global, Local and Industry Economic and Market Trends Shaping the Industry | 09
Executove Summary | 12
ICT Decision Making Responsibility Or Influence | 17
Business Objectives, ICT Challenges, Key Concerns And Budgets | 19
Business Objectives For Telecommunications Businesses | 20
In Their Own Words: Senior Leaders' Biggest Concerns Overall | 22
ICT Challenges For Telecommunications | 23
Impacts On ICT Budgets | 25
Planned ICT Budget Change In The Telecommunications Industry | 26
Digital Transformation In The Telecommunications Industry | 27
Drivers And Expected Outcomes From DX Investment | 28
Actual Outcomes Of DX Investment | 29
Digital Transformation Progress Overall | 32
Planned Investments in Digital Transformation Overall
Planned Investment in Telecomunications Industry Procesess | 33
Planned Investment In Telecommunications-Specific Applications | 34
Telecommunications Enterprise Applications Investment Plans | 35
Source Of Applications Current And Future | 36
Cloud In The Telecommunications Industry | 37
Selection Criteria For Cloud Services | 38
Number Of Cloud Infrastructure/Platform Providers | 39
Cloud Providers/Hosting Current & Future Use | 40
Cloud And Data Centre Planned Investments | 41
Cloud And Data Centre Challenges | 43
Cyber Security, AI/ML & Data Analytics In The Telecommunications Industry | 45
In Their Own Words: Senior Leaders' Biggest Concerns For Cyber Security | 46
Cyber Security Planned Investments | 47
In Their Own Words: Senior Leaders' Biggest Concerns For AI/ML | 48
AI/ML Planned Investments | 49
Data & Analytics Priorities For Implementation & Use Cases | 51
Telecommunications Industry: Hype, Technology Adoption And Approach | 52
Hype Dials For Selected Technologies: Overhyped, Underhyped, Important Or Not? | 53
Technology Adoption Profile | 55
In Their Own Words: Senior Leaders Attitudes To The Future Of Technology And DX | 56
Demographics: Role, Revenue Source, Sub-industry, Age, Gender | 57
Summary of Key FIndings | 60
Research Framework, Methodology & Approach | 62
About AWS And DataDriven And How To Contact Us | 65

Foreword from AWS

DX & ICT Trends in the ANZ Telecommunications Industry

Current initiatives are producing better products and customer experiences, cost optimisation, enhanced risk management, security and resilience and improved employee experience (EX). However, as the road to recovery from Covid and global economic shocks progresses, many challenges need to be addressed.

To accelerate its DX journey the sector requires ongoing leadership team evangelism, change management expertise, recruitment and retention of in-house technology experts and an array of technology partners with cyber security, cloud, AI/ML and data/analytics expertise to ensure effective implementation of DX initiatives.

To help illuminate a way forward, AWS has partnered with independent research and advisory firm DataDriven to deliver this report based on a survey of 40 ANZ Telecommunications Industry decision makers. In a first of its kind report, we focus on their thoughts and attitudes towards technology and digital transformation (DX) across the sector, with a specific focus on their use of cloud, cybersecurity, AI/ML, GenAI and data analytics for key operations as well as sector specific applications. In this report we are delighted to share our findings and conclusions.

Helping organisations in a challenging operating environment

Over the last decade, the velocity of change impacting the financial services industry has been unprecedented. Rapidly evolving customer expectations, new industry players, powerful emerging technologies, and new regulations have converged to form a new landscape. In addition, the COVID-19 pandemic accelerated digital transformation as organisations responded to the new “remote-everything” world. Firms are also focused on protecting their business and customers from cybers security threats and commenced the journey of exploring and implementing AI and machine learning as the digital world evolves.

Against this backdrop AWS continues to help customers increase efficiency and operational agility, accelerate innovation and speed-to-market, deliver frictionless and personalised experiences and enable security and compliance requirements at scale.

The first part of this report covers DX for this industry in terms of:

- Global, local and industry economic and market trends shapinn the industry
- ICT decision making responsibility
- Business objectives and ICT strategic initiatives, challenges and budget
- ICT budgeting and staffing

Specific industry topics include:

- Industry DX impact, drivers, progress, challenges
- Implementation vs investment in industry specific applications and processes
- Cloud and data centre challenges and plans, plus selection criteria, current and future plans
- Cyber security, AI/ML, GenAI and Data Analytics
- Hype, technology adoption and views of the future
- Extensive demographics by revenue source, sub-industry, age and gender

Global, Local and Industry Economic and Market Trends Shaping the Industry

Global, Local & Industry Economic and Market Trends Shaping the Industry

Global impacts on the ANZ Telecommunications sector

The ANZ Telecommunications sector faces both global and local challenges as it seeks to invest in transformation using digital technologies.

Globally, the current and future economic outlook is gloomy. According to the International Monetary Fund's April 2023 update, moderate growth of 2.7% in Advanced Economies in 2022 is projected to slow to an anaemic 1.3% in 2023 and 1.4% in 2024.

The picture in Emerging Market and Developing Economies (EMDEs) is rosier: growth of 4% in 2022 is largely expected to continue through 2023 (3.9%) and 2024 (4.2%). These figures are well below pre-pandemic growth rates.

Given China is both Australia's and New Zealand's largest export market (accounting for 25.9% and 28.8% respectively of total exports) both have a lot riding on China achieving forecast growth of 5.2% and 4.5% in 2023 and 2024 respectively.

Today's challenging global economic conditions are due to the fallout from three years of COVID-19, uncertainty due to the war in Ukraine and turbulence in the financial sector. Prolonged high inflation is also a factor.

Other challenges abound for the telecommunications sector. Long-term competitors and new digitally-native global and local outfits continue to ramp up competitive pressures. Telcos are responding by transforming their operations using modern digital technologies. Some have done this more successfully than others, some have moved too slowly.

It's clear that traditional retailers must continue to innovate and digitally transform to smart, new technologies. Digital transformation is the key to much lower fixed costs, and improved customer experience (CX) that is a prerequisite for competitive advantage in today's market.

Today's challenging global economic conditions are due to COVID-19, the war in Ukraine, financial sector turbulence and prolonged high inflation

Both Australia and New Zealand (ANZ) economies are under pressure

As well as global economic headwinds – such as slow growth in key export economies such as China, Japan and Korea - Australia and New Zealand face challenging conditions at home.

The Reserve Bank of Australia (RBA) stated in its August 2023 *Statement on Monetary Policy*: "Growth in economic activity in Australia is forecast to remain subdued over the rest of the year as cost-of-living pressures and the rise in interest rates continue to weigh on domestic demand." That downward pressure on domestic demand will translate to tough conditions for telcos who source most revenues within their home economies. Those that rely more on the B2B market may be slightly more inoculated.

Adding to its gloomy prognosis, the RBA goes on to say: "Household consumption growth is forecast to remain subdued over coming quarters…This reflects weak growth in real disposable incomes as the strong growth in labour incomes is being more than offset by high consumer price inflation."

On a more positive note, the RBA expects consumer price inflation (CPI) to taper off from 6% in June 2023 to 4.25% in December 2023 and 3.5% in June 2024.

Radio New Zealand reports even stormier economic seas in NZ: "Stats NZ [New Zealand's Department of Statistics] figures showed gross domestic product (GDP), the broad measure of economic growth, fell a seasonally adjusted 0.1 percent in the three months ended March. It was the second consecutive quarter of negative economic growth…That meets the technical definition of a recession."

While both ANZ economies are among the richest in the world they face similar challenges. They have very high proportions of home ownership, and the value of these homes has doubled over the past 10 years in major cities. The capital growth in housing assets has fueled personal wealth that previously underpinned growing personal consumption, but now that is under some threat. Slower growth in house asset value combined with much higher interest rates to service the mortgages that purchased these houses has chilled consumer confidence.

On August 8, 2023, Reuters reported that: "The Westpac-Melbourne Institute index of consumer sentiment [in Australia] dipped 0.4% in August from July, when it bounced 2.7%. The index reading of 81.0 showed pessimists again outnumbered optimists, a level that used to be only associated with recessions".

Similarly in NZ, the ANZ Roy Morgan Consumer Confidence Index in New Zealand fell to 83.7 points in July 2023 from 85.5 in the previous month. The overall confidence level is low. People who think it's a good time to buy a major household item, a key indicator of retail confidence, fell by 12 points.

Tough times in the Australia and New Zealand economies put pressure on telcos to respond with ever more innovative product and service offerings

Recent growth doesn't mean ANZ telcos will experience clear sailing in the near future

The Australian telecommunications market was worth around $28.5bn in 2022, up from $24bn in 2021 and the biggest jump in value for several years.

The New Zealand Industry was valued at $3.6bn, with one news source saying investment in the NZ telecoms sector is one of the highest in the OECD.

Overall, the industry across the region is worth around ANZ$31.8/NZD$34.65bn.

But despite the rise in value, it's been a challenging time. Recession fears and the rising cost of living have caused many households to tighten their belts, with telecommunication-based entertainment services often the first to go.

Netflix, once the poster child for streaming, saw its first reduction in Australian subscriber numbers in August following a massive share price drop in April 2022, which wiped US$50bn from its value.

For telcos, the rapid advancement of technologies like LTE has meant new ways to offer better services and products, but they haven't necessarily resulted in higher profitability.

Security is one of the concerns uppermost in most telco leaders' minds, with Australian c-suite executives telling a market research survey they put cybercriminals top of the list of threats. That figure was in line with global trends but interestingly, the respondents worried about insider threats higher than the global average.

It's such an area of concern in the region the Telecom Users Association of NZ has made a call for the incoming government (following the general election in October 2023) to improve online security and safety its main policy position.

Change is still the only constant, with new players set to upend the game like Starlink, Elon Musk's audacious plan for internet coverage across the entire continent using a fleet of satellites.

But for many telcos, the only way forward is to consider themselves technology companies, expanding – and in some cases moving away from – traditional market perceptions as network infrastructure providers.

The ANZ telco market has grown more than in previous years, but difficult challenges still lie ahead

Executive Summary

Delivered to you by:

Executive Summary

Australian and New Zealand telecommunications providers are under pressure to add value, and do so amid dwindling economic confidence

Along with so many other industries the Australian and New Zealand telecommunications sectors are under pressure to adopt new methodoloigies and services to improve both service and products to customers and ensure greater internal efficiency and profitability. Competition is fierce and customers are in a buyer's market.

That's not only the case because of the breadth and innovation among products on offer, but because - according to global as well as local trends - cost will become more of a determining factor.

Recession is being mentioned everywhere. According to the IMF, 2022 showed moderate growth of 2.7% in advanced economies, set to slow to 1.3% this year and bounce back only slighty in 2024 with 1.4%

Locally the picture isn't much better. The Reserve Bank of Australia (RBA) has said interest rate rises and the increasing cost of living will mean growth will be 'subdued' for the rest of 2023. Telcos with a main customer base comprising ANZ consumers will feel the brunt as households tighten their belts.

The rise in the consumer price index is set to fall slightly over the remainder of the year and continue to do so into the middle of 2024, but even if consumer purse strings are loosened, telco providers face a host of other problems.

Whether another recession bites or not, they'll be operating in a fraught cybersecurity environment where customer will expect them to fortify their borders, all while opening the doors of their data domains to more users.

There’s little economic good news on the horizon, and even then, security concerns will only increase

Executive Summary (cont'd)

This report investigates the extent to which ANZ telco providers are investing – or planning to invest – in digital transformation (DX) initiatives, cloud services, in-house data centres and adopt emerging technologies like artificial intelligence, blockchain and automation to compete.

ANZ Telcos are hyper-focused on increasing profits and saving money

Increasing productivity/efficiency is the highest priority business objective, according to 81% of respondents. Optimising content and managing risk and cybersecurity is an extremely high or high priority with 75% of respondents.

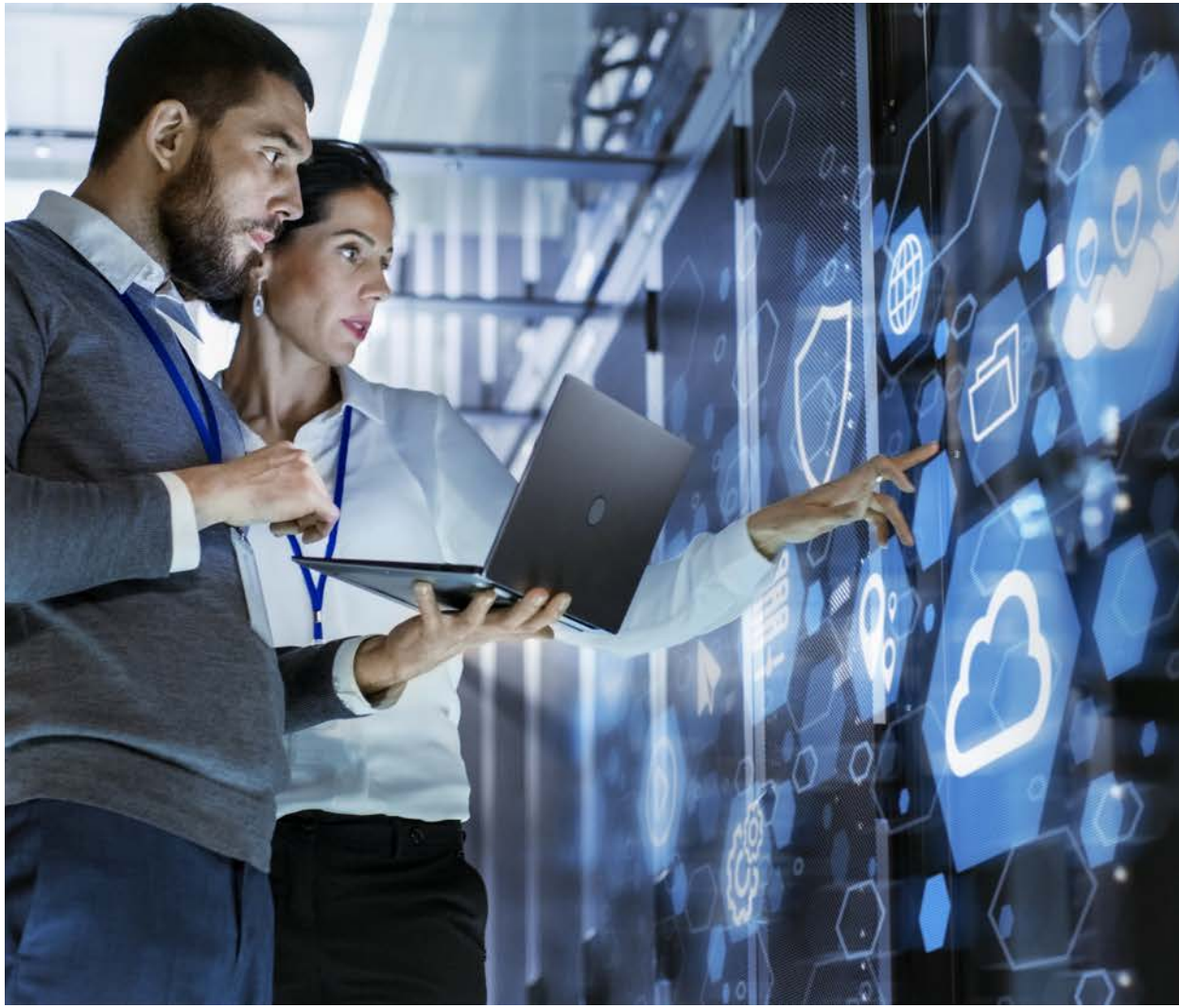
Developing and retaining cloud skills is the number one ICT strategic challenge

79% of respondents say developing and retaining cloud skills is the #1 strategic challenge. Staying up to date with technology changes is in the #2 spot at 77%, and accessing quality cloud is the third biggest ICT challenge according to 75% of respondents.

Technology changes have the biggest external impact on ICT budgets, but respondents put industry and economic factors among the top five.

77% of respondents say technology innovation will have the biggest positive impact on ICT budgets. The second (equal) biggest external effect on ICT budgets will be the local telco industry environment, with 65% reporting a positive impact, together with the glocal telco industry environment (also 65%.)

> Choosing the right cloud service and maintaining the people to manage it is ANZ telcos' plan to increase profits



Executive Summary (cont'd)

Telcos expect cost optimisation and increased revenue to be their most important digital transformation (DX) investment outcomes

75% of respondents say cost optimisation is the most important expected outcome from DX investments. They rank increased revenue second on the list, also at 75%, and strengthening customer relationships at #3 with 73%.

DX investments to increase revenues performed better than expected

65% of respondents say DX programs targeted to increase revenues performed better than expected. Strengthened competitiveness is #2 - 61% achieved better than expected results – as did 58% with programs focused on strengthened customer relationships.

Metaverse and cybersecurity programs are progressing

96% of respondents say their metaverse plans are mature, underway or at pilot stage. Cybersecurity programs are at equally advanced stages of implementation, also ranking at 96%, and realtime data analytics comes next with 94%.

Cybersecurity and hybrid cloud are set to receive the greatest proportion of DX budgets

Cybersecurity will receive the highest proportion of ANZ telcos' DX budgets with 90% allocating significant, major or some investment. Hybrid cloud will see the next highest spend at 90%, and workplace innovation/mobility is at #3 with 88%.

81% of ANZ telcos choose cloud services based on integration capabilities

The primary selection criteria for choosing cloud services is the ability to integrate with in-house systems, which 81% described as important. Ease of doing business is #2 at 77% and high reliability is at #3 totalling 75%.

Over three quarters of ANZ telcos use more than one cloud service

Almost half of all ANZ telcos (44%) use two cloud platforms. 25% use three platforms and 10% use four or more,

> ANZ telcos expect Cost optimisation and increasing revenue to be their most important DX investment outcomes

Executive Summary (cont'd)

ANZ telcos will allocate major funds towards software as a service (SaaS)

96% of ANZ telcos plan to invest significant, major or some budget on software as a service capabilities. Hybrid cloud will receive the second highest cloud spend with 92% and disaster recovery as a service is at #3 with 92%.

Backup and disaster recovery is the biggest cloud and data centre challenge

73% of ANZ telcos call backup and disaster recovery the biggest cloud and date centre challenge. Integration with services is second on the list with 71% of respondents considering it significant and data volumes and storage growth is second equal with 71%.

Threats from all sides are ANZ telcos' biggest cybersecurity concern

Respondents said breach attempts is the biggest cybersecurity challenge reported, with hacking, threats and malware among the top five or six top of mind security concerns.

> Respondents ranked cybersecurity breaches as the biggest concern, but are determined to insure against it

Cybersecurity insurance will receive more budget than prevention

91% of respondents say they'll earmark some of their ICT budgets toward insurance, putting it on top of the list, with incident detection second at 90% and identity access management at #3 with 90%.

Executive Summary (cont'd)

Concerns about AI/MI deployments are principally about security followed by cost and quality

Security is the most important consideration when it comes to building and deploying AI technologies, with concerns around cost and quality close behind.

Virtual customer interaction technologies will receive most AI/ML

Respondents will devote the most investment from their AI/ML budgets to virtual customer interaction, with 90% allocating significant, major or some investment. #2 on the list is real-time transaction analytics and data modelling at 85%, and automating manufacturing processes is the third priority (83% will invest).

Changing technology will make new opportunities

Programs in digital transformation (DX) like metaverses, cybersecurity and real-time data analytics are helping ANZ telcos better find and win customers. Those programs (and many more) are directly improving outcomes in critical fields like increasing revenue, strengthening competitiveness and strengthening customer relationships.

Virtually every ANZ telecommunication provider has adopted the cloud, considering it a core DX technology

44% of respondents report that they use two cloud platforms, 25% use three and 10% use four or more. With only 6% using no cloud services at all, a multi-cloud or hybrid cloud approach is the industry standard.

The most important cloud service selection criteria is integrating it with their own systems, followed by seamlessness of the business relationship and a high standard of service reliability.

> ANZ telcos are keen to roll AI tools out to improve customer experience (CX), but security is a big stumbling block

DX is a critical priority for ANZ telcos, who know it's their best chance to become (and remain) profitable

Telcos have learned the lessons of the global financial crisis (GFC), COVID and other disruptions. They know change is the only constant and DX is a constant process of staying in the race, especially with gloomy economic times set to continue and nimble competition always a step behind.

But DX isn't only constant, they know it needs to be a core business strategy. ANZ telcos know they need to recruit, buy and manage the best technology and people, and as tools like AI/ML, cloud and cybersecurity continue to evolve, they know that means building the best-performing ecosystem of partners and third party services.

With DX, there's no standing still – too many competitors are already well on the way.

LoB ICT Decision Making Responsibility or Influence

Lob ICT Decision Making Responsibility or Influence in the Telecommunications Industry

In this section we reveal key players in the ICT decision-making and influencing process in the retail industry.

The section shows the role that survey respondents have in the decision process and identifies the roles of other C-level and leadership team players.

The CIO dominates decision making in ICT in the ANZ telco sector

Head of risk/compliance, head of HR and the chief financial officer (CFO) come next in the list, with the head of HR more a decision maker than an influencer in any of the top four positions.

The positions with the highest representation as the decision maker rather than a strong influencer are the proprieter/owner and external adviser or consultant

The corporate CEO/MD and sales/trading manager are quite low on the list, in positions #16 and #17 respectively

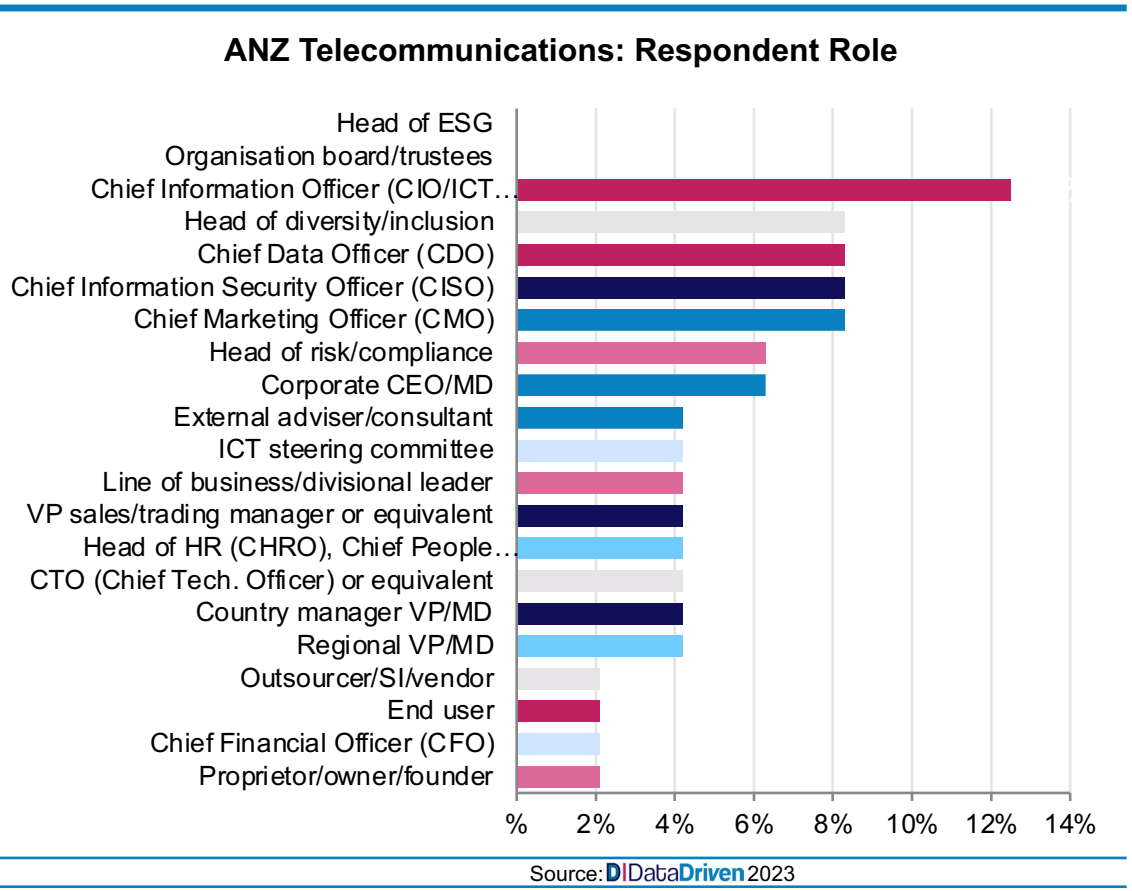
The CIO was the most represented group amongst respondents, at 13%

The head of diversity/inclusion, chief data officer (CDO), chief information security officer (CISO) and chief marketing officer (CMO) were equally represented in positions #2-5, at 9%.

The chief technology officer represented 4% of respondents.

Proprieter/owners have the most influence over decision making in ANZ telcos, with 50% describing themselves as the decision maker

Respondent overall role

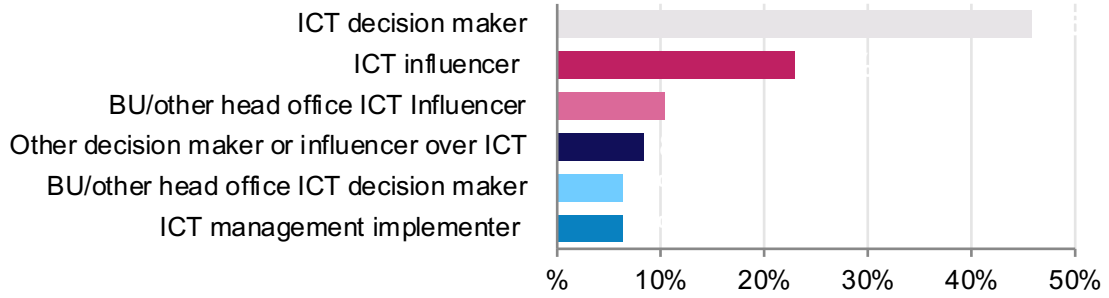


Source: DIDataDriven 2023

Respondents include a number of senior roles, with Chief Information Officer the most represented at 13%, followed by Chief Marketing Officer, Chief Information Security Officer, Chief Data Officer and Head of diversity/inclusion, all at 8%.

Roles Having Most Responsibility for Procurement Decision Making

ANZ Telecommunications: Decision Making Level of Respondents



Source: DIDataDriven 2023

Many roles have ICT decision-making and influencing power

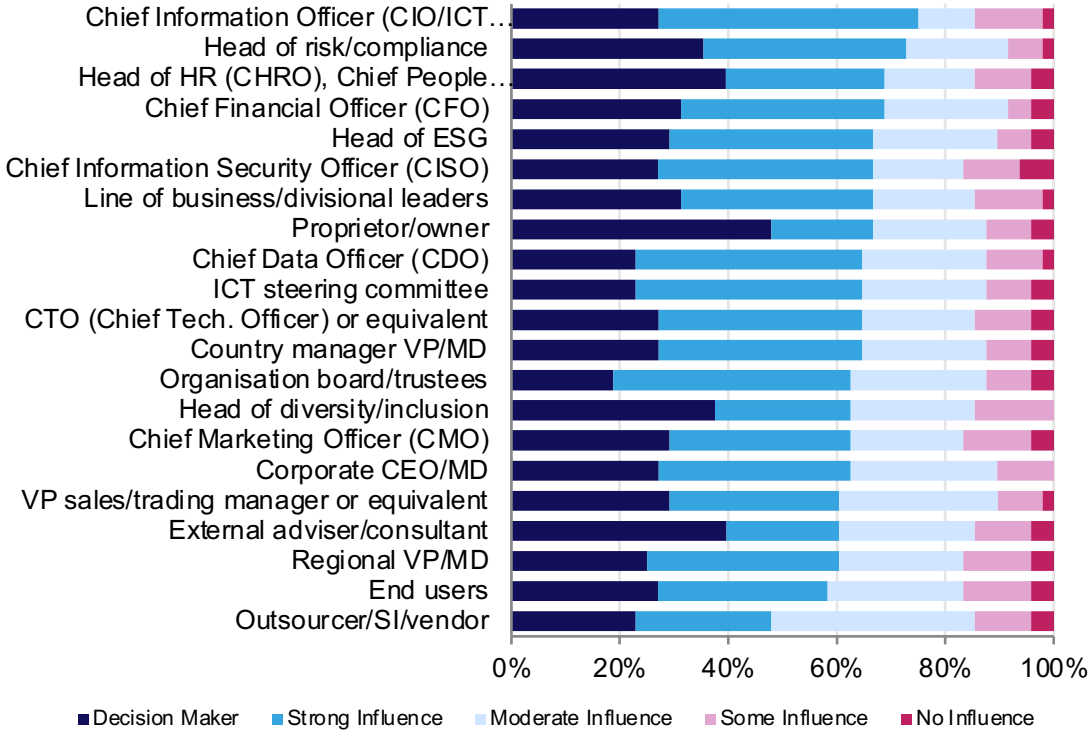
The chart shows the influence in the ICT purchasing process of senior roles. It is sorted in descending order of importance (based on the sum of decision maker and strong influencer responses).

By quite a long margin, the ICT decision maker comprised the greatest proportion of respondents at 45%.

Other ICT influencers totalled 33% – 23% from the general influencer population and 10% from business unit leaders.

Other decisions makers or influencers came to a total of 15%, and those in charge of managing the implementation of ICT systems comprised 6% of respondents.

ANZ Telecommunications: Decision Makers



Source: DIDataDriven 2023

Responses reveal the CIO is the primary decision maker or a strong influence in the ANZ telco sector in 75% of cases.

Business Objectives, CT Challenges, Key Concerns and Budgets

Business Objectives, ICT Challenges, Key Concerns and Budgets in the Telecommunications Industry

At a time of intense economic, geopolitical and technological pressures and change, the ANZ telco sector is responding by restructuring its businesses and operations.

They are applying new digital transformation (DX) technologies and strategies including cyber security, real-time and predictive data analytics and edge computing. Pervasive adoption of cloud as an enabling technology is the norm.

In this section of the report, we look at the retail sector's business objectives and the resultant ICT strategies, challenges and macro-level plans for changes in budget

ANZ Telcos are hyper-focused on increasing profits and saving money

Increasing productivity/efficiency is the highest priority business objective, according to 81% of respondents. Optimising content and managing risk and cybersecurity was an extremely high or high priority with 75% of respondents.

Developing and retaining cloud skills is the number one ICT strategic challenge for ANZ telcos

The best way to manage data storage and management was the top of mind strategic challenge, with 79% of ANZ telcos saying developing and retaining cloud skills has some significance and putting it at the top of the list with 79%. Staying up to date with technology changes is in the #2 spot at 77%, and accessing quality cloud is the third biggest ICT challenge with 75%.

Technology changes have the biggest external impact on ICT budgets, but ANZ Telcos put industry and economic factors among the top five

Technology changes have the biggest impact on ICT budgets, with 21% of respondents saying it has a very positive effect and 56% saying is has a positive effect, a total of 77%. The second biggest external effect on ICT budgets will be the local telco industry environment, with 65% reporting an impact, and third is the glocal telco industry environment, also at 65%.

Above all else, ANZ telcos want to – and face challenges in – increasing productivity to raise profits

Business Objectives and ICT Challenges for Telecommunications Businesses

ANZ Telcos are hyper-focused on increasing profits and saving money

Respondents were asked to rate a number of key business objectives from 'extremely high priority' to 'not a priority'. The chart shows the priority objectives sorted from highest to lowest.

ANZ telco providers are most concerned with saving or making money. Out of the top six ICT challenges in the industry, four are concerned with getting more from their investments and keeping costs down.

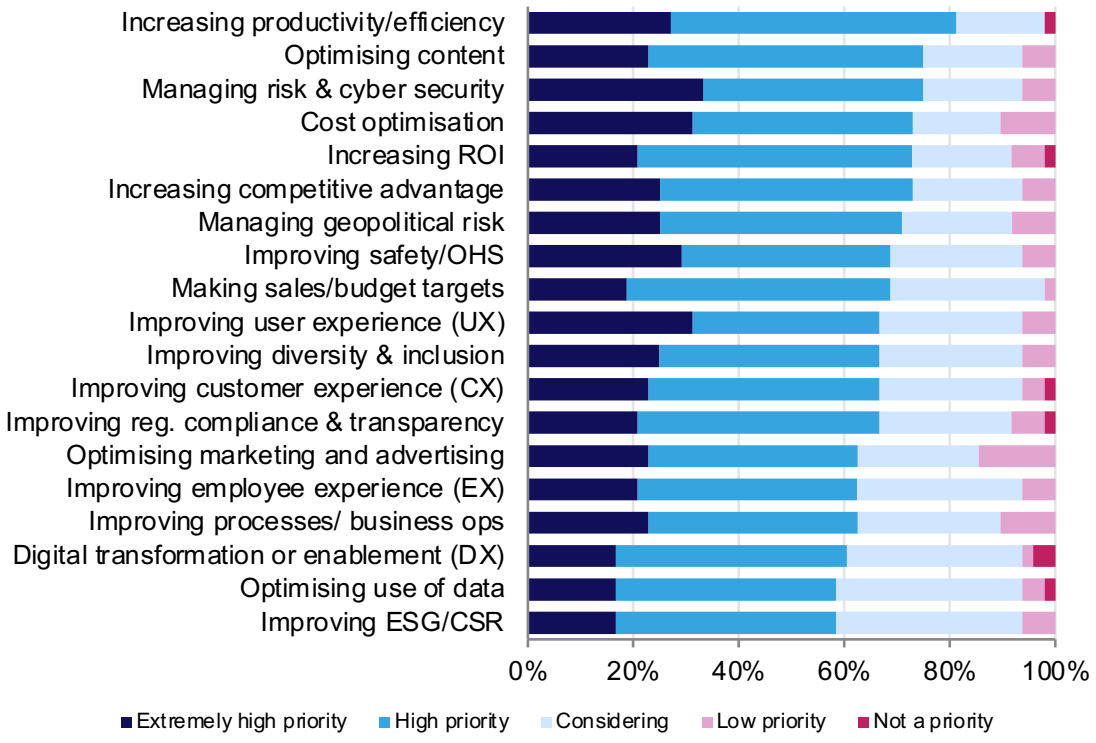
81% of respondents rank increasing productivity/efficiency as a priority, with 27% calling it an extremely high priority and 54% a high priority. Cost optimsation, increasing ROI and increasing competitive advantage, all followed at #4, #5 and #6 respectively, with 73% of respondents calling it a priority.

The business objectives in the top six not directly related to saving money or profitability are optimising content (#2) and managing risk and cybersecurity (#3), with 75% of respondents calling both an extremely high or high priority.

Managing risk and cybersecurity is also a particular area of focus for ANZ telcos, who gave it the highest 'extremely high priority' score from every business objective in the survey, at 33%.

Optimising marketing and advertising has the largest low priority score at 15%. In a very competitive consumer market, and with very innovative marketing by competitors, it's an area many telcos have already perfected.

Optimising use of data and improving ESG/CSR are last on the list, with respondent saying it's a priority in just 58% of cases.



Source: DIDataDriven 2023

> Four of the top six business objectives and ICT challenges for telcos are around increasing profits and controlling costs

ANZ: Business Objectives and ICT Challenges for Telecommunications - Ranked

Business objectives ranked: Australia and NZ

The table shows the ranked business objectives for the whole ANZ sector (the leftmost column), and also how each subsegment ranks the objectives. Points of note include:

- Increasing productivity/efficiency is clearly the most important challenge overall, with Satellite carriers and providers being the only outlier, ranking it at #6.
- Managing risk & cybersecurity is a high priority for all subsegments, except ones where users or customers aren't active in the company's data domains like media broadcasting (#13), satellite carriers (#15) and private network/private 5G (#11).
- Optimising content is in the top eight objectives for each subsegment apart from satellite carriers, which ranked it #11.
- Optimising the use of data isn't a widespread concern, but satellite carriers are again a standout, ranking it at #3, with mobile network operators ranking it at #9.

ANZ: BUSINESS OBJECTIVES	Telecommuni-cations	Media Broadcasting	Satellite carriers and providers	Communication Service Providers (CSPs)	Mobile Network Operators	Private Network, Private 5G	Operations Support Systems / Business Support Systems (OSS/BSS)
Increasing productivity/efficiency	1	1	6	1	2	1	1
Managing risk & cyber security	2	13	15	2	3	11	6
Optimising content	3	4	11	4	1	2	8
Increasing ROI	4	2	10	10	6	7	4
Cost optimisation	5	3	7	7	5	18	3
Increasing competitive advantage	6	6	8	3	10	9	2
Managing geopolitical risk	7	14	16	12	13	19	7
Making sales/budget targets	8	7	1	5	4	6	9
Improving safety/OHS	9	8	19	13	17	3	16
Improving diversity & inclusion	10	9	9	9	15	14	5
Improving user experience (UX)	11	5	12	11	7	4	14
Improving reg. compliance & transparency	12	18	4	15	8	8	13
Improving customer experience (CX)	13	19	5	6	11	5	12
Improving employee experience (EX)	14	10	13	18	14	15	15
Improving processes/ business ops	15	15	18	17	16	16	10
Optimising marketing and advertising	16	16	2	8	12	13	19
Digital transformation or enablement (DX)	17	17	17	14	18	17	11
Improving ESG/CSR	18	11	14	19	19	10	17
Optimising use of data	19	12	3	16	9	12	18

Source: DataDriven 2023

Note: Many respondent organisations encompass multiple sub-industries. Therefore, the total base number will be smaller than the total of all subindustry responses.

Business objectives ranked: Australia

Business objectives ranked: Australia

The table shows the ranked business objectives for the whole Australia Telco sector (the leftmost column), and also how each subsegment ranks the objectives. Points of note include:

- Managing risk and cybersecurity was a high priority business objective for most Australian telco respondents with the exception of satellite carriers/providers, which ranked it #10, and internet protocol television (IPTV), which ranked it #9.
- Optimising the use of data, low down the list for the majority of respondents, was actually the most important business objective for Australian satellite carriers/providers and mobile network operators, and #2 for media broadcasting.
- Improving ESG/CSR was a low priority for all respondents except for those in media broadcasting.
- Making sales/budget targets was a #1 business objective for just one subsegment of respondents – mobile network operators.

AUSTRALIA TELECOMMUNICATIONS: BUSINESS OBJECTIVES	Telecommunications (n = 26)	Media Broadcasting (n =10)	Satellite carriers and providers (n = 5)	Communication Service Providers (CSPs) (n =13)	Mobile Network Operators (n =10)	Private Network, Private 5G (n =10)	Operations Support Systems / Business Support Systems (OSS/BSS) (n =12)	Internet Protocol Television (IPTV) (n =8)	Mobile virtual network operator (MVNO) Wired and wireless telecommunications carriers (n = 9)
Cost optimisation	1	2	1	3	1	7	3	4	3
Managing risk & cyber security	1	4	10	1	5	7	3	9	7
Increasing productivity/efficiency	3	7	5	6	12	1	2	1	6
Increasing competitive advantage	3	7	1	5	5	3	1	4	7
Improving reg. compliance & transparency	3	14	1	12	4	3	8	9	7
Improving diversity & inclusion	6	14	5	6	5	7	5	9	7
Optimising content	6	1	10	6	12	3	8	1	1
Increasing ROI	8	4	19	9	5	7	5	1	7
Making sales/budget targets	8	14	5	3	1	7	8	9	13
Improving customer experience (CX)	8	13	5	2	5	2	8	4	1
Managing geopolitical risk	11	17	10	16	15	17	8	15	18
Improving safety/OHS	11	7	10	9	15	3	17	4	3
Improving employee experience (EX)	13	19	5	15	12	7	14	9	13
Optimising marketing and advertising	13	4	10	9	5	7	14	4	3

Business objectives ranked: New Zealand

Business objectives ranked: NZ

The table shows the ranked business objectives for the whole NZ Telco sector (the leftmost column), and also how each subsegment ranks the objectives. Points of note include:

- Respondents from across the NZ telco industry said increasing productivity/efficiency was a high priority business objective, with each subsegment putting it in the top five.
- Optimising marketing and advertising was a low priority for most respondents. Only one subsegment (satellite carriers and providers) ranked it #1, with every other NZ telco respondent ranking it between #6 and #16.
- Managing risk and cybersecurity was a high priority, with almost all NZ telco respondents ranking it in the top 10 business objectives. Only two subsegments (media broadcasting and operations support systems/business support systems) ranked it near the bottom, at #17 and #18 respectively.

NZ TELECOMMUNICATIONS: BUSINESS OBJECTIVES	Telecommunications (n = 22)	Media Broadcasting (n =10)	Satellite carriers and providers (n = 7)	Communication Service Providers (CSPs) (n =9)	Mobile Network Operators (n =11)	Private Network, Private 5G (n =10)	Operations Support Systems / Business Support Systems (OSS/BSS) (n =12)	Internet Protocol Television (IPTV) (n =11)	Mobile virtual network operator (MVNO) Wired and wireless telecommunications carriers (n = 11)
Increasing productivity/efficiency	1	5	4	1	1	2	1	1	2
Improving ESG/CSR	2	1	4	7	7	1	2	2	2
Improving user experience (UX)	2	1	4	9	4	2	5	6	6
Optimising content	2	6	4	3	1	2	7	4	1
Increasing ROI	5	1	1	9	4	6	7	4	2
Managing geopolitical risk	5	6	4	3	3	9	3	2	2
Managing risk & cyber security	7	17	4	3	4	9	18	6	6
Digital transformation or enablement (DX)	7	6	3	2	7	7	5	6	10
Improving safety/OHS	7	6	13	13	18	2	7	10	10
Increasing competitive advantage	10	6	13	3	7	9	3	6	10
Cost optimisation	11	1	13	9	7	18	7	10	18
Improving processes/ business ops	11	6	13	15	7	18	14	10	16
Making sales/budget targets	11	14	4	7	7	7	7	10	6
Improving customer experience (CX)	14	17	4	13	7	9	14	16	18
Optimising marketing and advertising	14	14	1	9	7	9	14	16	6

Australia: Business Objectives and ICT Challenges for Telecommunications - Ranked

Data is key in Telecommunications

- Australian Telecommunications organisations across all industry subsegments are striving to make the most of their data overall.
- However, improving the customer exp players and publishing and news busi
- Digitall transformation enablement rat a means to other ends rather than as
- Improving the customer experience rated as the top objective being pursued in several
- reaming and publishing firms.
- usion barely made it into the top half of

Charts to come

AUSTRALIA: BUSINESS OBJECTIVES*								orts (incl s, leagues, venues) (n = 3)	*Advertising & Marketing (n =4)	*Ticketing (n = 1)
Optimising use of data								3	2	2
Increasing ROI								4	3	3
Cost optimisation								9	13	13
Optimising marketing and advertising								15	8	8
Increasing productivity/efficiency								8	5	5
Improving processes/ business ops								7	12	12
Improving reg. compliance & transparenc								17	9	9
Improving customer experience (CX)								2	1	1
Optimising content								13	16	19
Managing risk & cyber security								11	15	15
Increasing competitive advantage								1	17	16
Improving safety/OHS								14	7	7
Making sales/budget targets								6	4	4
Improving ESG/CSR								16	18	17
Managing geopolitical risk	15	18	18	7	19	8	6	5	11	11
Digital transformation or enablement (DX)	16	10	8	14	16	17	19	18	19	18
Improving user experience (UX)	17	11	9	10	8	11	9	19	10	10
Improving diversity & inclusion	18	14	15	16	17	7	13	10	14	14
Improving employee experience (EX)	19	19	19	19	11	13	15	12	6	6

Source: DIDataDriven 2023

Note: Many respondent organisations encompass multiple sub-industries. Therefore, the total base number will be smaller than the total of all sub-industry responses.
Note: Responses at the overall industry level are generally representative. Sub-industries with (n>8) respondents are also relatively representative. Sub-industries with n<9 have been shown for reference but cannot be viewed as representative.

NZ: Business Objectives and ICT Challenges for Telecommunications - Ranked

NZ industry drives for productivity and ROI

- It is business as usual in the New Zealand Telecommunications industry which is pursuing traditional business objectives throug
- Increasing productivity and efficiency, sales and budget targets are the indu
- Another familiar objective, cost optimi
- Digital transformation enablement, in contrast, ranks 19th and last.
- objective in Australia, in New Zealand
- y for business only appears in the top 5

Charts to come

NZ: BUSINESS OBJECTIVES					*Publishing/ Publisher & News (n = 2)	*Radio (n = 1))
Increasing productivity/efficiency					2	2
Increasing ROI					4	10
Increasing competitive advantage					6	12
Making sales/budget targets					8	13
Improving customer experience (CX)					3	3
Improving user experience (UX)					1	1
Cost optimisation					5	11
Managing risk & cyber security					10	14
Managing geopolitical risk					7	4
Optimising use of data					17	17
Optimising marketing and advertising					9	5
Improving ESG/CSR					15	15
Improving reg. compliance & transpar					13	8
Improving diversity & inclusion					11	6
Optimising content	15	16	10	14	12	7
Improving safety/OHS	16	13	8	8	16	16
Improving processes/ business ops	17	17	11	15	18	18
Improving employee experience (EX)	18	18	12	16	19	19
Digital transformation or enablement (DX)	19	19	13	19	14	9

Source: DIDataDriven 2023

Note: Many respondent organisations encompass multiple sub-industries. Therefore, the total base number will be smaller than the total of all sub-industry responses.
Note: Responses at the overall industry level are generally representative. Sub-industries with (n>4) respondents are also relatively representative. Sub-industries with n<4 have been shown for reference but cannot be viewed as representative NZ is a small market and samples for some sub-industries were unavailable (cable, sports, advertising/marketing, and ticketing)

In Their Own Words: What are Senior Leaders' Biggest Concerns?

Security is the biggest concern for ANZ telcos, but a challenging business technology landscape is a close second

In this unprompted question, ANZ telco industry leaders were asked to state in their own words the biggest concern they face in their role. The graphic shows a word cloud where the most commonly stated concerns are shown in proportionally larger font.

Security is the biggest concern, but secondary terms like data, employees and management reveal a little more about exactly what security concerns are taking up most of the respondents' time.

Changes, systems, shortage and demands clearly refer to a business landscape where balancing the expense and difficulty of pivoting direction or innovating new products while keeping up with the wants and needs of customers is a big priority.

But the prominence of the term 'backwardness' is more interesting still, perhaps revealing one of the pervasive fears respondents have about how their systems and methodologies stack up against those of their competitors.

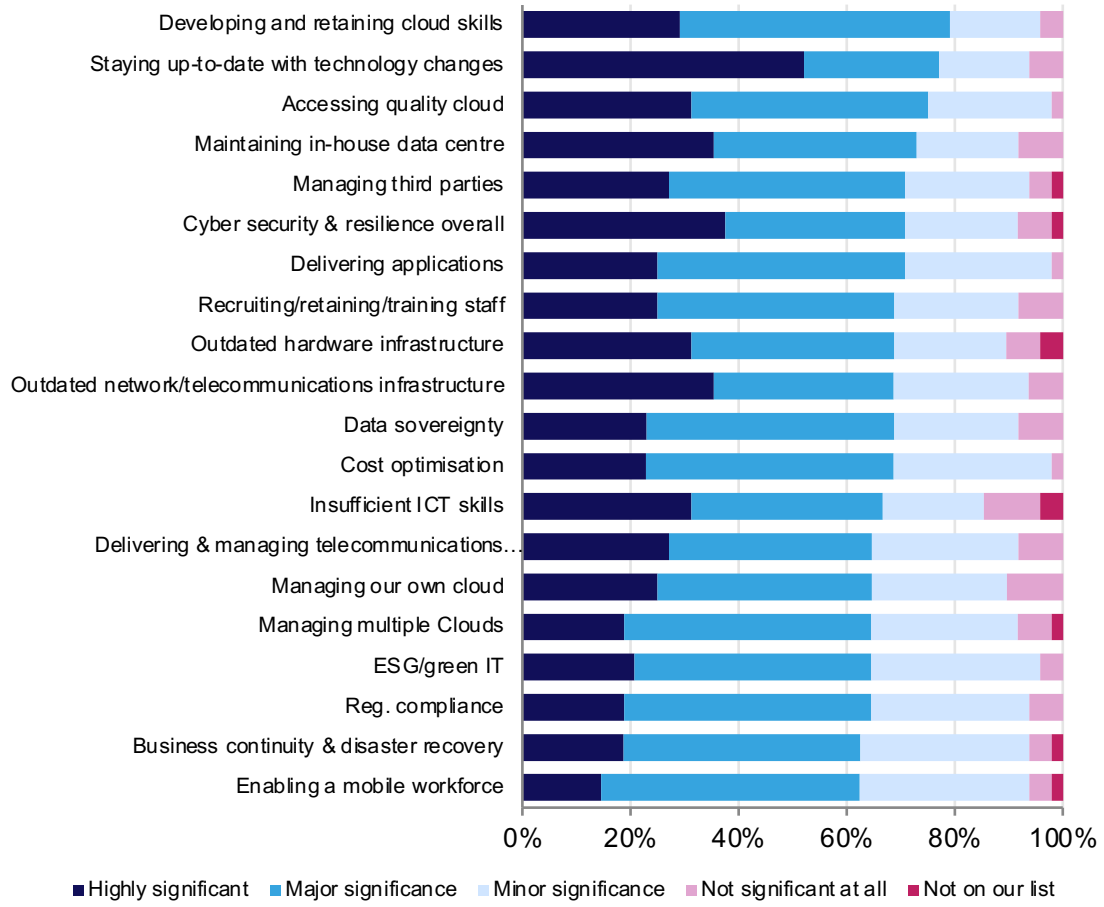
ANZ Telecommunications: Single Biggest Challenge

Source: DIDataDriven 2023

> Making and selling products takes time and money, and respondents worry about how easy it is to get wrong

ICT Challenges for Telecommunications Businesses

ANZ Telecommunications: ICT Challenges



Source: DIDataDriven 2023

Developing and retaining cloud skills is the number one ICT strategic challenge for ANZ telcos

Respondents were asked to rate ICT challenges from 'highly significant' to 'not on our list'.

Developing and retaining cloud skills is at the top of the list as a highly significant challenge. 79% say it has some significance. Of those, 29% call it 'highly significant', 50% say 'major significance' and 17% 'minor significance'.

Respondents also rank cybersecurity and resilience overall higher than most in the highly significant category, at 38%, and a similarly higher than usual proportion of responses (35%) rank in house data centres as highly significant, so even with the continued wide-scale adoption of cloud services, on-premise data centres aren't disappearing from ANZ telcos any time soon.

Accessing quality cloud is the third biggest ICT challenge with 75% (with a breakdown of 31%, 44% and 23%), and maintaining an in house data centre is at #4, with 73% (broken down by 35%, 38% and 19%).

Staying up to date with technology changes is in the #2 spot at 77%, and managing third parties and cybersecurity and resilience overall are at #5 and #6, both with a ranking of 71%.

In fact, respondents are concerned with staying up to date with technology changes so much, it gets the highest score of the 'highly significant' category of every ICT challenge in the list, at 52%.

Business continuity and disaster recovery and enabling a mobile workforce come in at the bottom two positions, with almost identical responses for the categories in each challenge and 63% of respondents calling them significant.

> ANZ telcos have significant challenges with cloud skills and managing in-house data centres

ANZ: ICT Strategic Challenges by Subsegment - Ranked

ICT challenges ranked

The table shows the ranking of ICT strategic challenges across retail subsegments in ANZ.

- Developing and retaining cloud skills is the first or second biggest challenge in every subsegment apart from communication service providers, which ranked it #10, and mobile network operators, which ranked it #5.
- Staying up to date with technology changes, while not ranked #1 by any subcategory, ranked highly across the board, with the lowest ranking (#9) given by private network/private 5G.
- Accessing quality cloud ranked in the top seven for every subsegment apart from mobile network operators, which ranked it #19, and operations support systems/business support systems, which ranked it #12.
- Managing multiple clouds ranked in the lowest half of the list except with mobile network operators, who ranked it #2.

ANZ: ICT CHALLENGES	Telecommuni-cations	Media Broadcasting	Satellite carriers and providers	Communication Service Providers (CSPs)	Mobile Network Operators	Private Network, Private 5G	Operations Support Systems / Business Support Systems (OSS/BSS)
Developing and retaining cloud skills	1	1	2	10	5	1	1
Staying up-to-date with technology changes	2	3	4	6	1	9	6
Accessing quality cloud	3	4	6	7	19	3	12
Maintaining in-house data centre	4	15	7	11	6	5	8
Managing third parties	5	5	8	14	10	19	10
Delivering applications	6	10	5	1	3	4	4
Cyber security & resilience overall	7	16	11	2	11	15	14
Outdated hardware infrastructure	8	11	9	12	8	16	3
Recruiting/retaining/training staff	9	6	14	5	4	17	16
Outdated network/Telecommunications infrastructure	10	12	1	3	12	20	11
Cost optimisation	11	19	13	13	9	6	5
Data sovereignty	12	13	10	8	13	2	7
Insufficient ICT skills	13	7	3	4	7	14	13
ESG/green IT	14	8	15	16	20	10	20
Reg. compliance	15	20	19	20	18	8	17
Managing our own cloud	16	14	18	17	15	13	9
Managing multiple Clouds	17	17	12	15	2	11	15
Delivering & managing Telecommunications (satellites, MVNO management, 5G and fibre networks)	18	2	17	9	14	12	2
Enabling a mobile workforce	19	18	20	19	16	18	19
Business continuity & disaster recovery	20	9	16	18	17	7	18

Source: DIDataDriven 2023

Note: Many respondent organisations encompass multiple sub-industries. Therefore, the total base number will be smaller than the total of all subindustry responses.

ICT challenges ranked: Australia

ICT challenges ranked: Australia

The table shows the ranked business objectives for the whole Australia Telco sector (the leftmost column), and also how each subsegment ranks the objectives. Points of note include:

- Delivering applications was at #1 or #2 on the list of every subsegment of Australian telcos except operations support systems/business support systems and internet protocol television, who ranked it #7 and #4 respectively.
- Conversely, operations support systems/business support systems and internet protocol television ranked delivering and managing telecommunications (satellites, MVNO management, 5G and fibre networks) higher than any other subsegment – at #3 and #1 respectively.
- Insufficient ICT skills was a high to medium ICT challenge, with most respondents ranking it in the top six. Only private network/private 5G and mobile virtual network operators ranked it low, at #9 and #13 respectively.
- Only three subsegments of Australian telcos ranked business continuity/disaster recovery in the top three – media broadcasting, private network/private 5G and internet protocol television.

AUSTRALIA TELECOMMUNICATIONS: ICT CHALLENGES	Telecommunications (n = 26)	Media Broadcasting (n =10)	Satellite carriers and providers (n = 5)	Communication Service Providers (CSPs) (n =13)	Mobile Network Operators (n =10)	Private Network, Private 5G (n =10)	Operations Support Systems / Business Support Systems (OSS/BSS) (n =12)	Internet Protocol Television (IPTV) (n =8)	Mobile virtual network operator (MVNO) Wired and wireless telecommunications carriers (n = 9)
Delivering applications	1	1	1	1	1	1	7	4	2
Developing and retaining cloud skills	2	2	1	7	3	3	3	4	1
Staying up-to-date with technology changes	3	8	1	9	1	3	9	4	2
Managing third parties	4	6	7	9	5	9	3	4	5
Accessing quality cloud	4	2	7	5	20	3	15	4	13
Insufficient ICT skills	6	2	1	2	5	9	3	4	13
Outdated network/telecommunications infrastructure	6	19	1	2	15	18	1	4	5
Cost optimisation	8	8	7	16	3	3	11	13	4
Reg. compliance	8	8	7	14	5	1	10	13	13
Outdated hardware infrastructure	8	18	1	5	5	9	1	4	5
Cyber security & resilience overall	11	8	7	2	15	9	7	13	5
Maintaining in-house data centre	11	8	7	18	5	9	11	13	19
Business continuity & disaster recovery	13	2	14	9	5	3	14	1	5
Enabling a mobile workforce	13	8	20	9	13	9	11	1	10

ICT challenges ranked: New Zealand

ICT challenges ranked: New Zealand

The table shows the ranked business objectives for the whole New Zealand telco sector (the leftmost column), and also how each subsegment ranks the objectives. Points of note include:

- Maintaining an in-house data centre was a high priority ICT challenge for almost every NZ telco business. Five subsegments ranked it #1, one at #2 and one at #3. Only two others ranked it lower – operations support systems/business support systems at #7 and media broadcasting at #14.
- Developing and retaining cloud skills was another priority challenge, with every subsegment ranking it in the top five except for communication service providers, who ranked it at #14.
- Regulatory compliance was a particularly low priority, with #14 the highest ranking of any subsegment (private network/private 5G) and almost every other respondent ranking it in the bottom three challenges.
- Outdated network/telecommunications only ranked highly with one subsegment of respondents, with satellite carriers and providers in the NZ telco industry ranking it #3.

NZ TELECOMMUNICATIONS: ICT CHALLENGES	Telecommunications (n = 22)	Media Broadcasting (n =10)	Satellite carriers and providers (n = 7)	Communication Service Providers (CSPs) (n =9)	Mobile Network Operators (n =11)	Private Network, Private 5G (n =10)	Operations Support Systems / Business Support Systems (OSS/BSS) (n =12)	Internet Protocol Television (IPTV) (n =11)	Mobile virtual network operator (MVNO) Wired and wireless telecommunications carriers (n = 11)
Maintaining in-house data centre	1	14	3	2	1	1	7	1	1
Recruiting/retaining/training staff	1	1	7	1	1	7	7	1	2
Developing and retaining cloud skills	1	1	3	14	4	1	2	5	2
ESG/green IT	4	10	7	15	15	1	17	5	2
Cyber security & resilience overall	4	14	7	2	8	14	13	5	8
Accessing quality cloud	4	6	1	13	8	1	7	14	8
Managing multiple Clouds	4	6	1	7	1	1	6	5	2
For TELCOS: Delivering & managing telecommunications (satellites, MVNO management, 5G and fibre networks)	4	1	7	2	4	7	2	5	2
Data sovereignty	9	1	7	7	15	1	5	1	8
Managing our own cloud	9	1	7	7	8	7	1	5	15
Staying up-to-date with technology changes	9	6	7	5	4	14	7	5	8
Cost optimisation	12	14	7	7	15	7	2	5	15
Managing third parties	12	10	7	15	8	18	13	18	15
Outdated hardware infrastructure	14	6	18	15	8	14	13	16	18
Outdated									

Australia: ICT Strategic Challenges by Subsegment - Ranked

Application delivery poses an industry-wide challenge

- Delivering applications is both a key ele… …ominently as a challenge for the sector, pain point for Telecommunications lead… …er in broadcast, streaming and Telecommunications industry except pu…
- The number two and three challenges … …kills, which ranked just 17th overall as a

Charts to come

AUSTRALIA: ICT CHALLENGES*								…orts = (3)	*Advertising & Marketing (n =4)	*Ticketing (n = 1)
Delivering applications								1	1	13
Cyber security & resilience overall								5	13	8
Accessing quality cloud								16	7	3
Developing and retaining cloud skills								6	2	1
Staying up-to-date with technology cl…								10	5	16
Outdated network/telecomms								3	11	7
Cost optimisation								19	17	19
Reg. compliance								12	6	2
Business continuity & disaster recov…								7	14	9
Maintaining in-house data centre								20	9	5
Managing our own cloud								9	4	15
Enabling a mobile workforce								2	18	20
Dealing with broadcasting issue								13	15	18
Managing multiple Clouds								11	19	11
Data sovereignty								14	16	10
Outdated hardware infrastructure	16	18	19	16	1	7	11	8	3	14
Insufficient ICT skills	17	16	5	11	17	17	17	17	8	4
Recruiting/retaining/training staff	18	17	17	15	18	18	7	4	12	17
ESG/green IT	19	20	8	6	21	21	18	21	10	6
Managing third parties	20	19	7	18	19	19	20	18	21	21
Dealing with streaming bandwidth	21	21	20	21	8	12	15	15	20	12

Source: DIDataDriven 2023

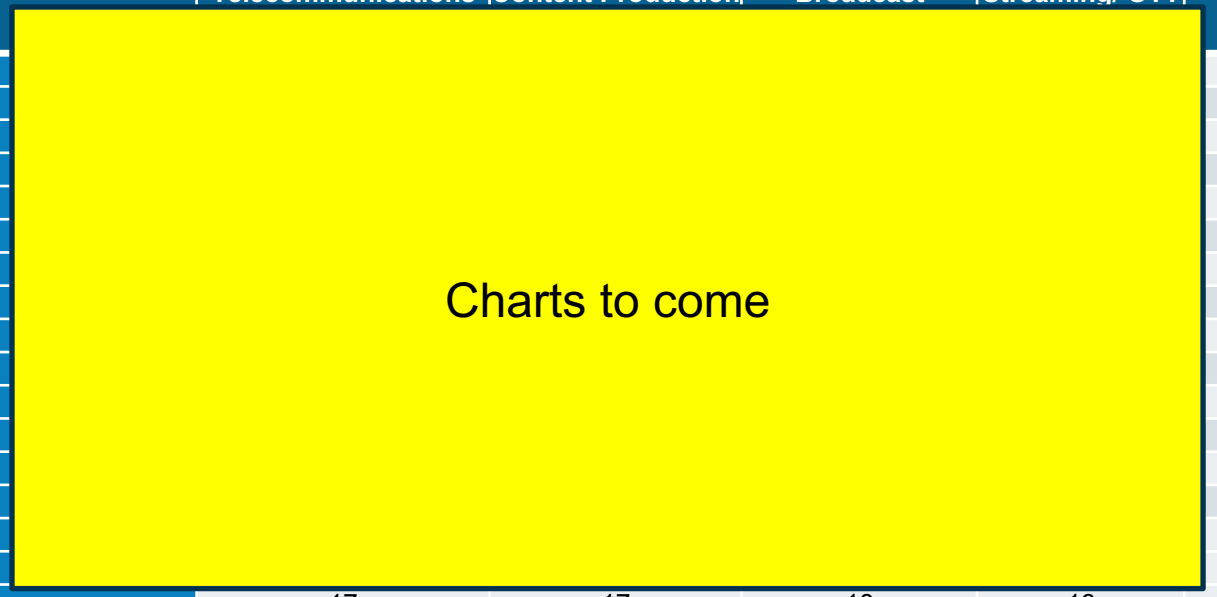
Note: Many respondent organisations encompass multiple sub-industries. Therefore, the total base number will be smaller than the total of all sub-industry responses.
Note: *Responses at the overall industry level are generally representative. Sub-industries with (n>8) respondents are also relatively representative. Sub-industries with n<9 have been shown for reference but cannot be viewed as representative.

NZ: ICT Strategic Challenges by Subsegment - Ranked

ESG makes its mark as an ICT challenge in NZ

- The top ICT challenges facing New Zealand Telecommunications businesses are regulatory compliance and the management of multiple clouds, followed by application delivery.
- ESG/green IT appears in fourth place in contrast with the 19th place seen in Australia.
- Another point of contrast is outdated networking and infrastructure, which appears in 21st and last place compared with sixth in Australia. New Zealand has, of course, invested heavily and successfully in this infrastructure in recent years through its Ultra Fast Broadband rollout.
- Cyber security is a prominent challenge, rated fifth over all but only 15th among broadcasters.

NZ: ICT CHALLENGES*	Telecommunications	Content Production	Broadcast	Streaming/ OTT	Publishing & News (n = 2)	Radio (n = 1)
Reg. compliance					2	2
Managing multiple Clouds					1	1
Delivering applications					11	10
ESG/green IT					9	9
Cyber security & resilience overall					7	7
Outdated hardware infrastructure					5	5
Accessing quality cloud					13	13
Business continuity & disaster recovery					6	6
Maintaining in-house data centre					15	15
Enabling a mobile workforce					8	8
Staying up-to-date with technology changes					3	3
Cost optimisation					10	11
Managing our own cloud					4	4
Developing and retaining cloud skills					12	12
Dealing with streaming bandwidth					14	14
Dealing with broadcasting issue					19	19
Insufficient ICT skills	17	17	18	18	20	20
Managing third parties	18	18	12	15	18	18
Data sovereignty	19	19	3	11	16	16
Recruiting/retaining/training staff	20	20	4	12	17	17
Outdated network/Telecommunications infrastructure	21	21	13	21	21	21

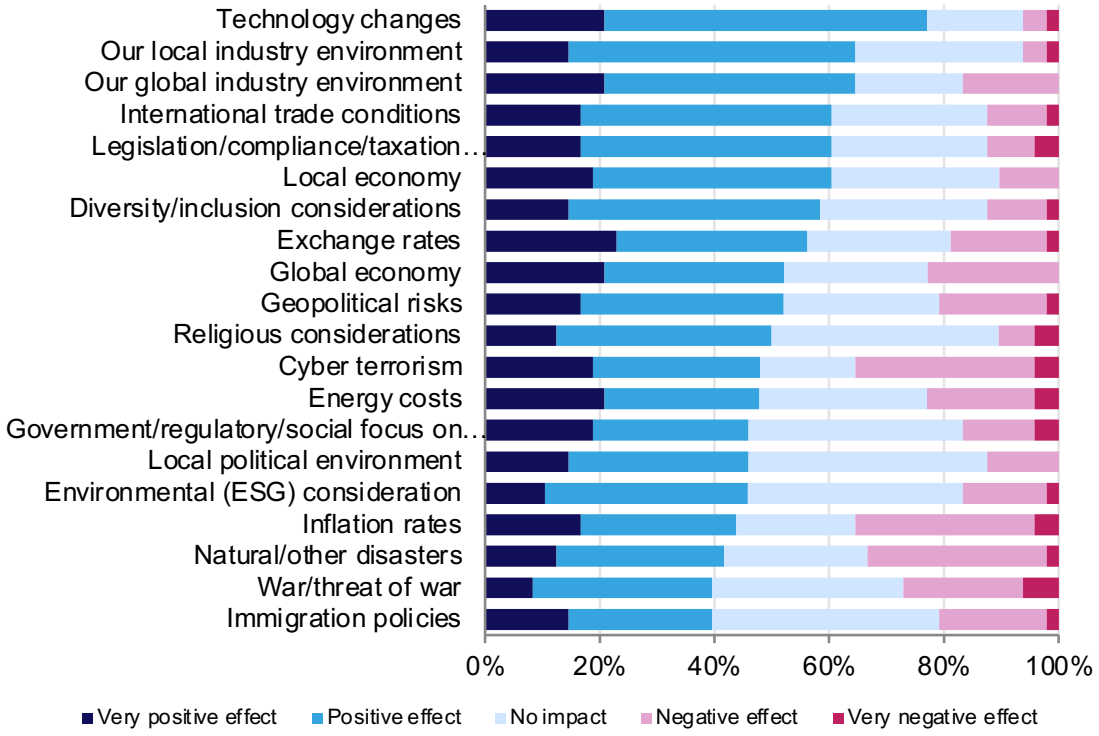


Source: DIDataDriven 2023

Note: Many respondent organisations encompass multiple sub-industries. Therefore, the total base number will be smaller than the total of all sub-industry responses.
Note: *Responses at the overall industry level are generally representative. Sub-industries with (n>4) respondents are also relatively representative. Sub-industries with n<4 have been shown for reference but cannot be viewed as representative NZ is a small market and samples for some sub-industries were unavailable (cable, sports, advertising/marketing, and ticketing)

Impacts on ICT Budgets

ANZ Telecommunications: External Impacts on ICT Budgets



Source: DIDataDriven 2023

Technology changes have the biggest positive effect on ICT budgets, but ANZ telcos say the economies and industry at home and overseas is making a big collective impact

Technology changes have the biggest external impact on ICT budgets, but ANZ Telcos put industry and economic factors among the top five

The survey asked respondents to indicate the extent to which a range of factors will impact planned ICT spending in 2023. Options were: very positive effect, positive effect, no impact, negative effect, very negative effect. The chart shows the 20 potential impacts in descending order based on how positive the impact on ICT spending .

Technology changes have the biggest impact on ICT budgets, with 21% of respondents saying it has a very positive effect and 56% saying is has a positive effect, a total of 77%.

Four of the next five impacts refer to the economies and industries the respondents operate in. The second highly positive effect on ICT budgets will be the local telco industry environment, with 15% reporting a very positive impact and 50% a positive impact, for a total of 65%, and the third positive effect is the glocal telco industry environment, with 21% for very positive and 44% for positive, also totalling 65%.

No doubt indicating a level of confidence in local economies, respondents gave our local industry environment one of the lowest negative effect rankings, at 6%. And technology changes, as well as having the biggest positive effect on ICT budgets, also has the lowest negative effect on budgets, at 6%.

Respondents say exchange rates and energy costs will both have a very positive effect on ICT budgets, with 23% and 21% respectively. Even though cyberterrorism had roughly the same positive effect (19%) as both those measures, it had the highest negative effect, with 36% saying it had a negative or very negative effect.

Cyberterrorism's negative effects were shared with inflation rates, which also had a high negative impact measure of 36%.

Both war/the threat of war and immigration policies will have the least positive impact on ICT budgets,with 40%.

Planned ICT Budget Change in the Telecommunications Iindustry

Cyberthreats see ANZ telcos pulling out all the stops to bolster cybersecurity budgets

The survey asked respondents to indicate planned ICT spending changes over the next 12 months. Options were: large increase, moderate increase, small increase, stay the same, small decrease, moderate decrease, large decrease. The chart lists spending categories in descending order of planned increases.

Most respondents, by far, plan to increase spending on cybersecurity, with 23% saying their spending will include a large increase, 42% a moderate increase and 27% a small increase, a total of 92% increasing their budgets by some measure. Digital transformation or enablement is #2 on the list at 13%, 29% and 42%, a total of 84%.

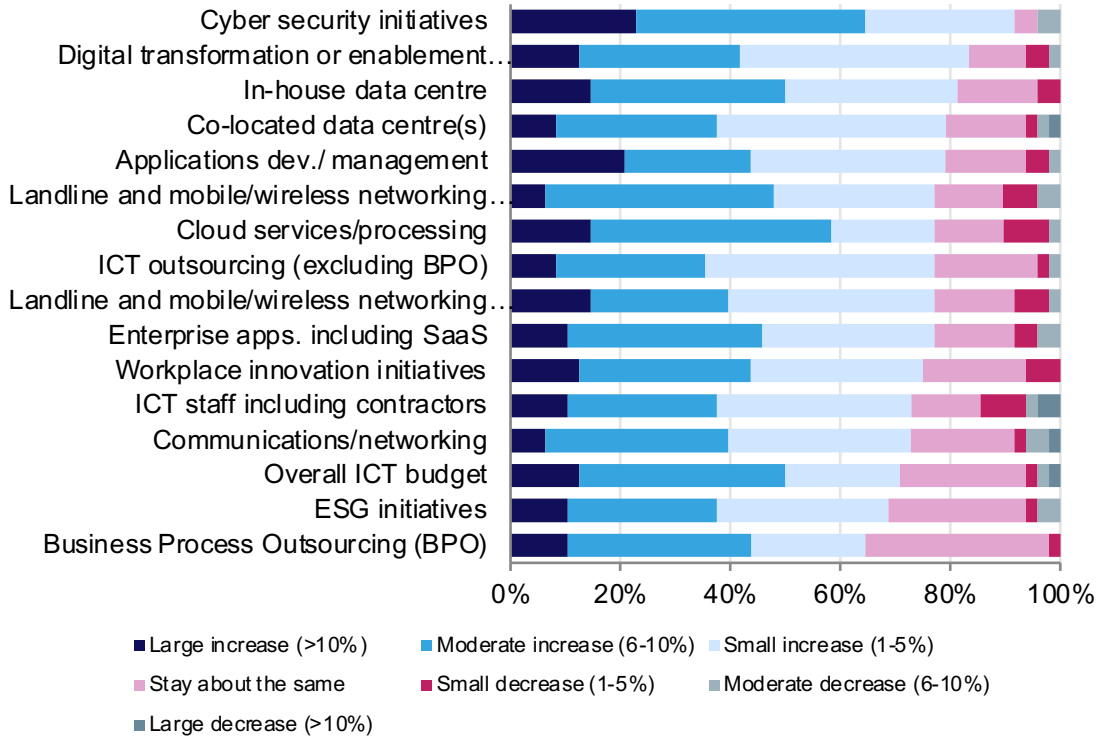
81% of respondent will increase budgets for in-house data centres, as will 79% for co-located data centres and 77% for cloud services/processing.

Applications development (79%) will have the fifth most widespread budget increases, with 79% of respondents saying they'll increase their budget for it.

Respondents said application development and management and cybersecurity will attract the highest proportion of large increases (>10%) in the list, with 21%. Both cloud services and processing and ICT staff (including contractors) have one of the highest rankings on the list where budgets will actually see a small decrease, both at 8%.

Respondents give ESG initiatives and business process outsourcing the lowest rankings at 69% and 65% respectively, with business process outsourcing getting the highest score for budgets staying around the same, at 33%.

ANZ Telecommunications: ICT & DX Planned Budget Changes



Source: DIDataDriven 2023

> Along with cybersecurity, managing data in cloud, on-premise or a blend between the two will collectively have a major impact on ICT budgets.

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DX: Sector- Specific Initiatives and Technologies

Delivered to you by: aws

DX in the ANZ telecommunications sector: Specific Initiatives and Technologies

In the prior chapter we looked at the overall drivers for investment, strategies, initiatives and challenges across the whole ICT budget spectrum, including digital transformation as one component.

In this part of the report, we focus on DX specifically for the Telecommunications sector, including current usage and planned implementation of a number of technologies important for digital transformation.

We also analyse the actual outcomes of previous/existing DX initiatives, as well as the challenges experienced by Telecommunications sector organisations in achieving these outcomes.

Telcos expect cost optimisation and increased revenue to be their most important digital transformation (DX) investment outcomes

Cost optimisation is the most important expected outcome from DX investments, with 75% of respondents saying it's of very high or high importance. They rank increased revenue second on the list, also at 75%, and strengthening customer relationships at #3 with 73%.

The results of DX investment reveal that revenue increases are better than expected

65% of respondents say increased revenue performed better than expected. Strengthened competitiveness is at #2 at 61% and strengthened customer relationships at #3 with 58%.

Metaverses and cybersecurity lead the rankings of DX implementation

96% if respondents say their metaverse plans are mature, underway or at pilot stage. Cybersecurity programs have equally advanced implementations, also ranking at 96%, and realtime data analytics comes next with 94%.

Cybersecurity and hybrid cloud are set to receive the greatest proportion of DX budgets

Cybersecurity will receive the highest proportion of ANZ telco's DX budgets, with 90% allocating significant, major or some investment. Hybrid cloud will see the next highest spend at 90%, and workplace innovation/mobility is at #3 with 88%.

DX led to increased revenue and cybersecurity is a big focus area, while the metaverse is hotting up

Drivers and Expected Outcomes from DX Investment

Telcos expect cost optimisation and increased revenue to be their most important outcomes from digital transformation (DX) investment

In this slide respondents report the outcomes they expect from the DX budgets increases. They responded whether the outcomes were of very high, high, medium or low importance or not at all important.

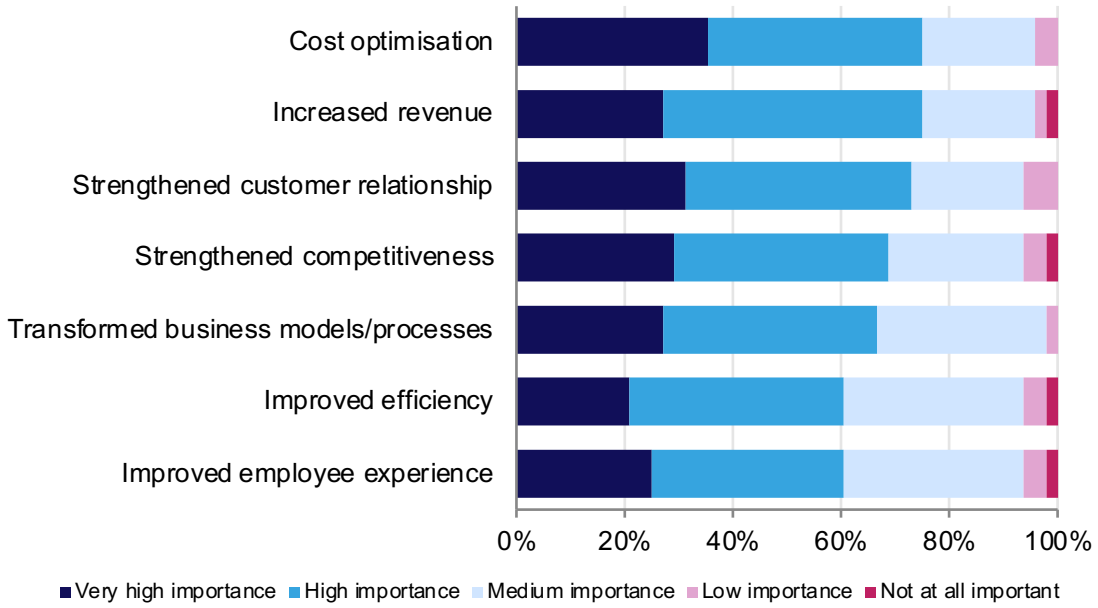
Cost optimisation is on top of the list, with 75% of respondents saying it's of very high (35%) or high (40%) importance. #2 is increased revenue, which is of very high (27%) or high (48%) importance, also totalling 75%.

Respondents also strongly expect it to strengthen customer relationships, at #3 with 73%, and make them more competitive, at #4 with 69%.

Respondents rated cost optimisation and strengthened competitiveness highest in the 'very high importance' category, at 35% and 29% respectively.

Improved efficiency and improved employee experience comes in last on the list, both at 60%.

ANZ Telecommunications: DX Expected Outcomes

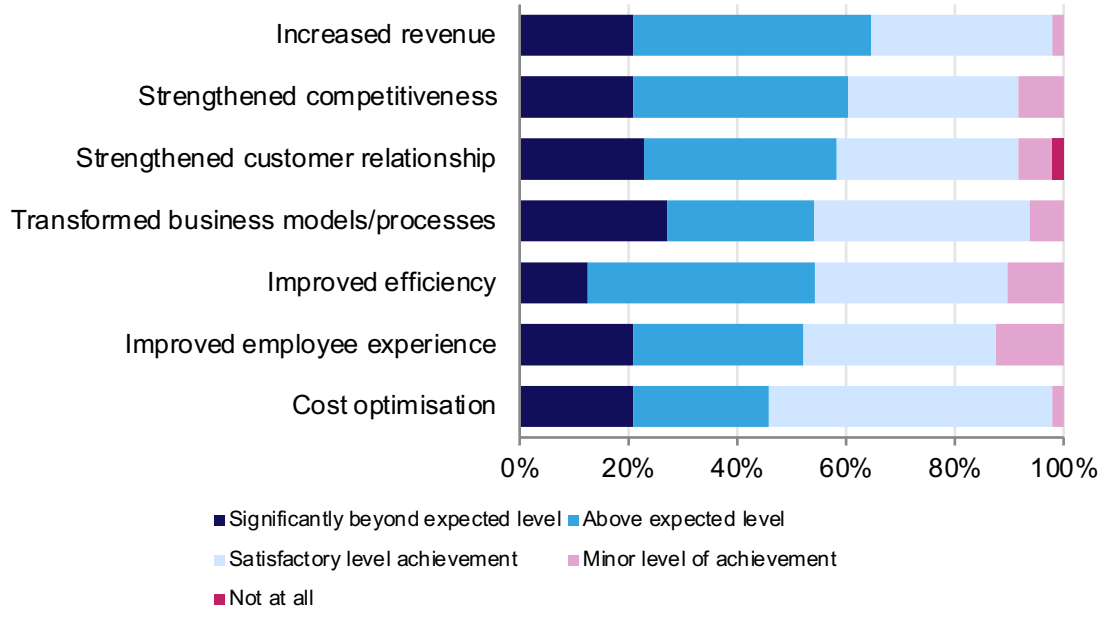


Source: DIDataDriven 2023

> Cost optimisation and strengthened competitiveness are the areas respondents most expect outcomes in digital transformation (DX)

Actual Outcomes of DX Investment

ANZ Telecommunications: DX Outcomes Achieved



Source: DIDataDriven 2023

Respondents say revenue increases were better than expected from digital transformation (DX) investments

In this slide we look at the actual outcomes of digital transformation (DX) investments. Respondents ranked them as significantly beyond expected level, above expected level, satisfactory level achieved, minor level of achievement or outcomes not achieved at all.

Topping the list is increased revenue, which respondents say performed significantly beyond the expected level in 21% of cases and above the expected level in 44%, for a total of 65%. Strengthened competitiveness is at #2, with 21% and 40%, totalling 61%, and strengthened customer relationships at #3 with 23% and 35%, totalling 58%.

Transformed business models/processes has the highest score where performance is significantly above the expected level, with 27%, and strengthened customer relationships is next with 23%. With the exception of improved efficiency (13%), every other measure in the table ranks at 21% for performing significantly beyond the expected level.

At the end of the list, improved employee experience measures 52%, and cost optimisation is last with 46%.

Digital transformation (DX) initiatives prompted better than expected results in several categories for ANZ Telcos

Expected vs Achieved Outcomes of DX Investment

Cost optimisation tops the list of outcome expected vs achieved, with the biggest difference between the two

In previous slide we looked at expected outcomes and the actual outcomes from digital transformation budgets, an in this slide we compare the results.

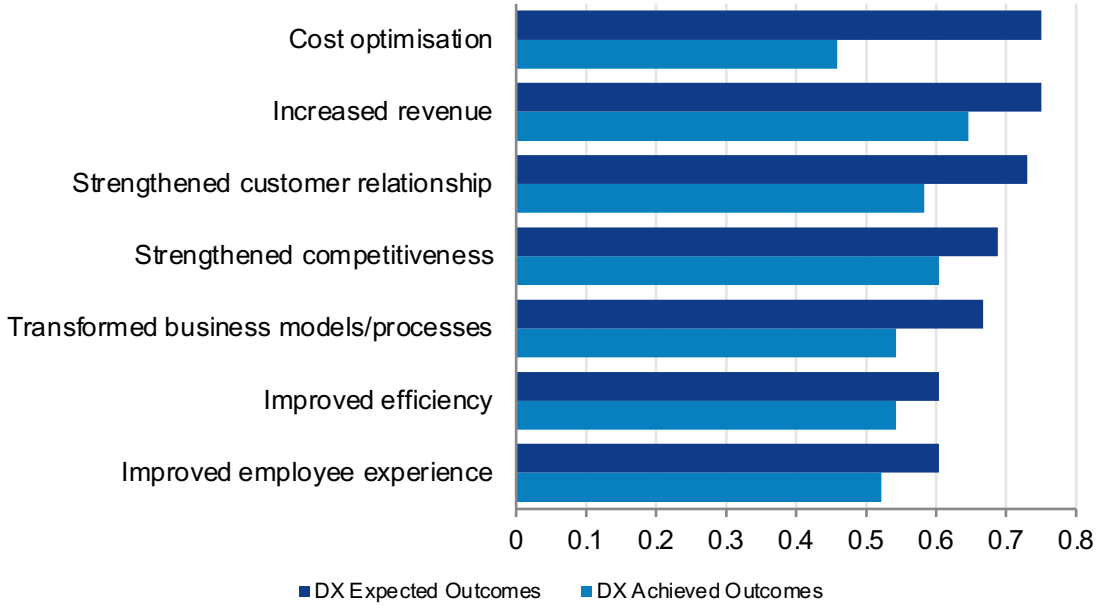
The first thing to note is that in every case, the actual outcome achieved is lower than the expected outcome.

The largest difference is in cost optimisation. Respondents rank satisfaction about the outcome at only 46% whereas the expected outcome is top of the list (pg 38) at 75%.

Increased revenue had the highest outcome achieved measure with 65%, which came the closest to its expected outcome figure of 75%, and strengthened competitiveness is the next best performing metric at 60%, also slightly below the 69% expected.

Improved efficiency and improved employee experience are bottom of the list, both with expected outcomes at 60% where actual outcomes are 54% for improved efficiency and 52% for improved employee experience.

ANZ Telecommunications: Expected Vs Achieved DX Outcomes



Source: DIDataDriven 2023

Respondents report that outcomes achieved from digital transformation (DX) investments were lower than expected across the board

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Digital Transformation Progress

Metaverses and cybersecurity lead the rankings of digital transformation (DX) implementation

In this slide, respondents were asked how far along various digital transformation (DX) plans were in their business. Choices were mature implementation, well underway, pilot/proof of concept, a roadmap/plan or not at all.

The clear takeaway is that, no longer a buzzword, the metaverse is farther along in implementation than almost any other DX plan. 17% of respondents had mature implementations, 50% said plans were well underway, 29% were at the pilot stage and 2% had created a roadmap, a total of 96%.

Cybersecurity is the next most advanced implementation at #2, also ranking at 96% (with 38% of respondents having mature implementation, 29% well underway and 29% had a pilot program.

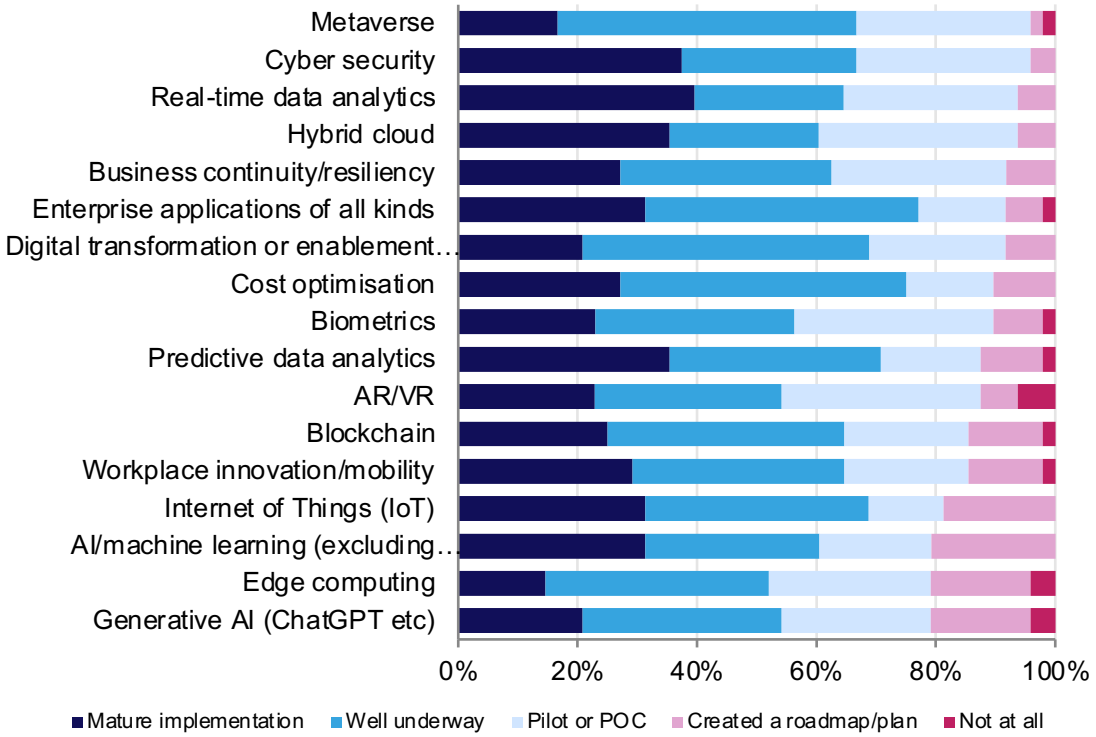
Realtime data analytics and hybrid cloud are next at #3 and #4, with 94% each, and respondents position business continuity/resiliency, enterprise applications and digital transformation equal at #5, #6 and #7, all at 92%.

No doubt thanks to the metaverse and hybrid cloud being so high on the list and the seamless interconnectivity they offer, real-time data analytics has a higher proportion of mature implementations (40%) even though it's #3 in the list overall. Cybersecurity has the next highest measure, with mature implementations at 38%.

Despite all the attention Generative AI is getting in the world of tech, it shares the bottom spot in the list with edge computing, both with the lowest ranking of 79%.

Similar numbers of respondents have either created a roadmap or made no plans for for both edge computing or AI, but the ranking of mature plans in generative AI is slightly higher than that of edge computing, at 20% versus 15%.

ANZ Telecommunications: General DX Initiatives Implemented

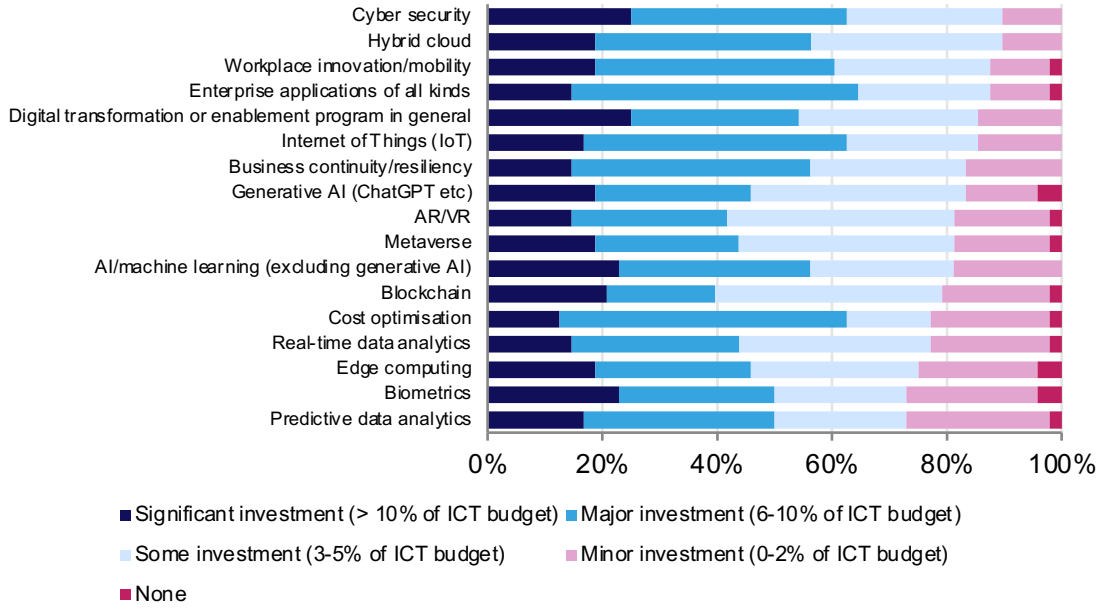


Source: DIDataDriven 2023

The metaverse has gone beyond the buzzwords, with 96% of telcos at the pilot stage or beyond

Planned Investments in Digital Transformation Overall

ANZ Telecommunications: General DX Initiatives Planned



Source: DIDataDriven 2023

Cybersecurity and hybrid cloud are set to receive the greatest proportion of DX budgets

This slide shows the planned proportion of a company's whole ICT budget will be applied to each area. Respondents were able to choose between significant investment (greater than 10% of their ICT budget), major investment (between 6-10%), some investment (between 3-6%) minor investment (0-2%) or none at all.

Cybersecurity is tipped to receive the highest proportion of ANZ telco's ICT budgets, on top of the list with 90%. Of that total, 25% of respondents reported making a significant investment, 38% major investment and 33% some investment.

Respondents put hybrid cloud is at #2 on the list, with 18%, 38% and 33% totalling 90%.

Making the digital workplace more efficient and user friendly occupied two positions in the top five, with workplace innovation/mobility at #3 with 88% and digital transformation/enablement programs at #5 with 86%.

Respondents put enterprise applications fourth on the list at 88%, equal to workplace innovation/mobility, and Internet of Things, sixth of the list, is equal to digital transformation at 86%.

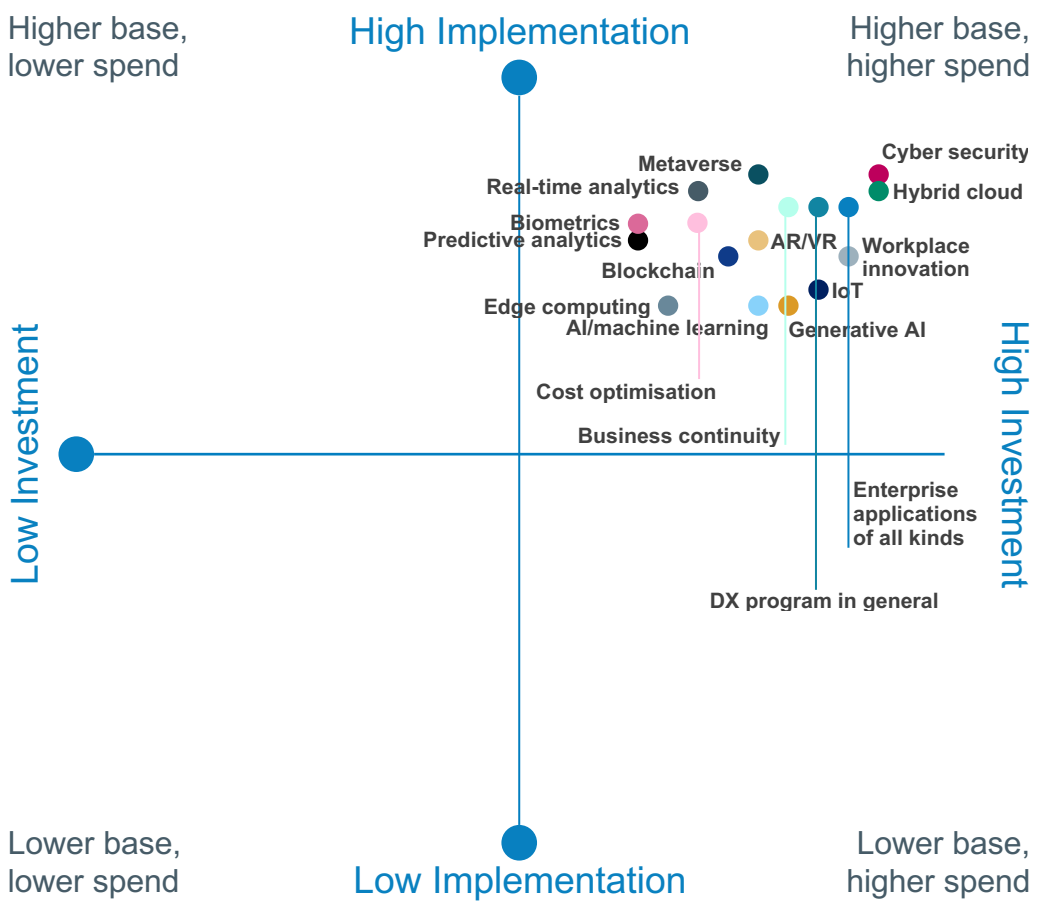
Cybersecurity and digital transformation had the higher scores from respondents who said their budget would represent more than 10% of the total ICT budgets, with 25% each.

Biometrics and Predictive data analytics are at the bottom of the list, both with 73%, but an interesting twist is that biometrics is one of the top four areas that will receive more than 10% of respondents' total ICT budget, at 23%.

Security and enabling a more mobile and digital workplace are the most crucial areas planned for digital transformation (DX) initiatives among ANZ telcos

Implementation vs Investment Matrix (I^2M) for Telecommunications DX overall

ANZ Telecommunications: Overall DX Initiatives



The I2M (Implementation vs Investment Matrix), shows the level of implementation against investment

- This I^2M quadrant highlights potential sweet spots to target. Operations placed high on the vertical axis indicate high current implementation, and those furthest right on the horizontal axis will attract most investment this year. Initiatives that score high on both axes are likely to be the best to target
- Areas with the highest market potential are cybersecurity and hybrid cloud
- The next most attractive initiative is enterprise applications, with only slightly lower investment and less implementation that cybersecurity and hybrid cloud
- Metaverse is being implemented as widely as cybersecurity initiatives, although it's attracting lower investment than those on top of the list

The four hottest areas in telco digital transformation (DX) spending are cybersecurity, hybrid cloud, enterprise applications and the metaverse

Planned Investment in Telecommunications Specific Processes

Risk mitigation processes like fraud detection, compliance and general risk management are receiving a large slice of ICT budgets

This slide shows the ICT processes ANZ telcos plan to invest in. Respondents were able to choose between significant investment (greater than 10% of their ICT budget), major investment (between 6-10%), some investment (between 3-6%) minor investment (0-2%) or none at all.

Respondents are feeling the imperative to fortify their businesses against risk, forming a common them in the top five.

Fraud detection is at the top of the list, with 17% earmarking significant investment, 42% major investment and 38% some investment, totalling 96% overall. Risk management is at #3, with totals of 21%, 50% and 21%, a total of 92%, and compliance analysis is at #5, with totals of 19%, 35% and 33% totalling 87%.

E-learning is at #2 with 92%, with respondents devoting significant investment in 25% of cases, major investment for 38% and some investment for 29%.

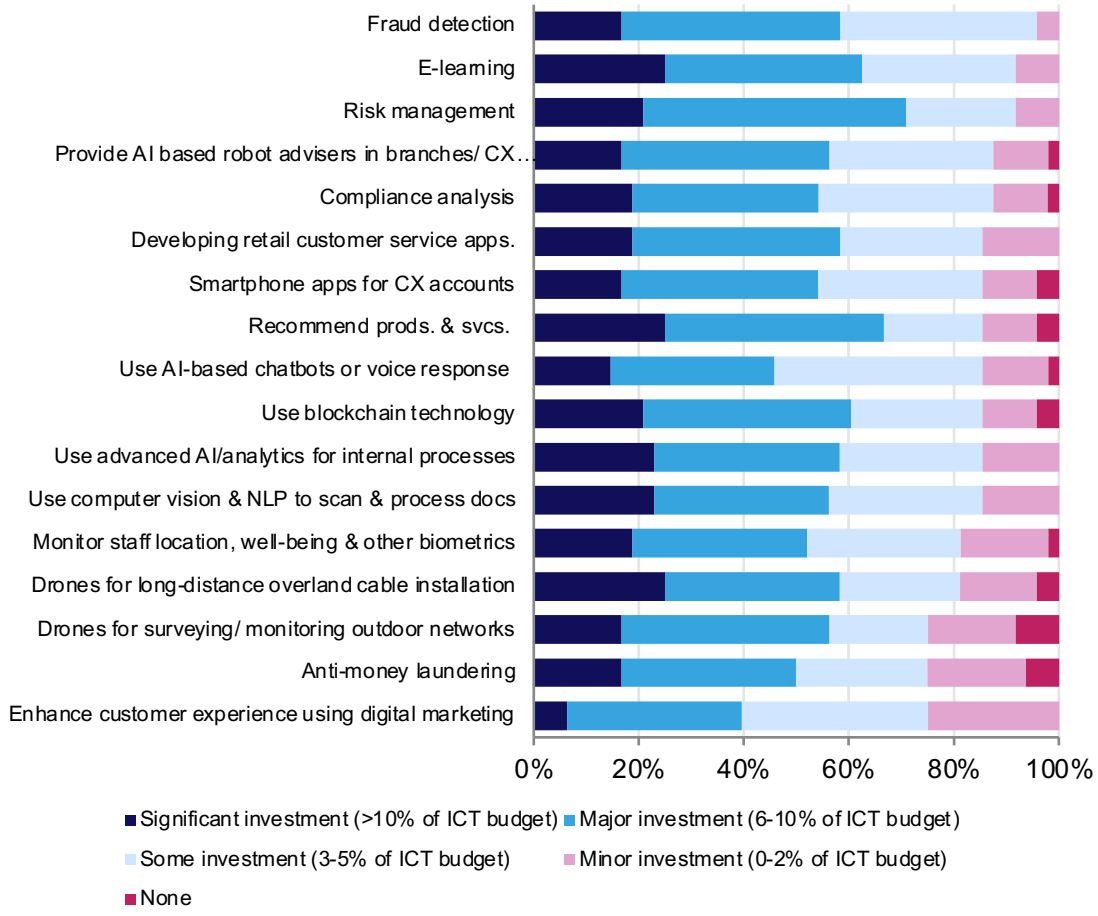
Deploying AI-based robot advisers in customer-facing roles, a hot topic with AI seeming to find its way into every industry, is at #4 with 88%.

The areas with the highest rankings attracting budgets that comprise 10% or higher of total ICT budgets are e-learning, the ability to recommend products and services and using drones for long distance cable installation, all at 25%.

Another use of drones – surveying and monitoring outdoor networks – shares the bottom spot in the list along with anti money-laundering and enhancing customer experience using digital marketing, all at 75%.

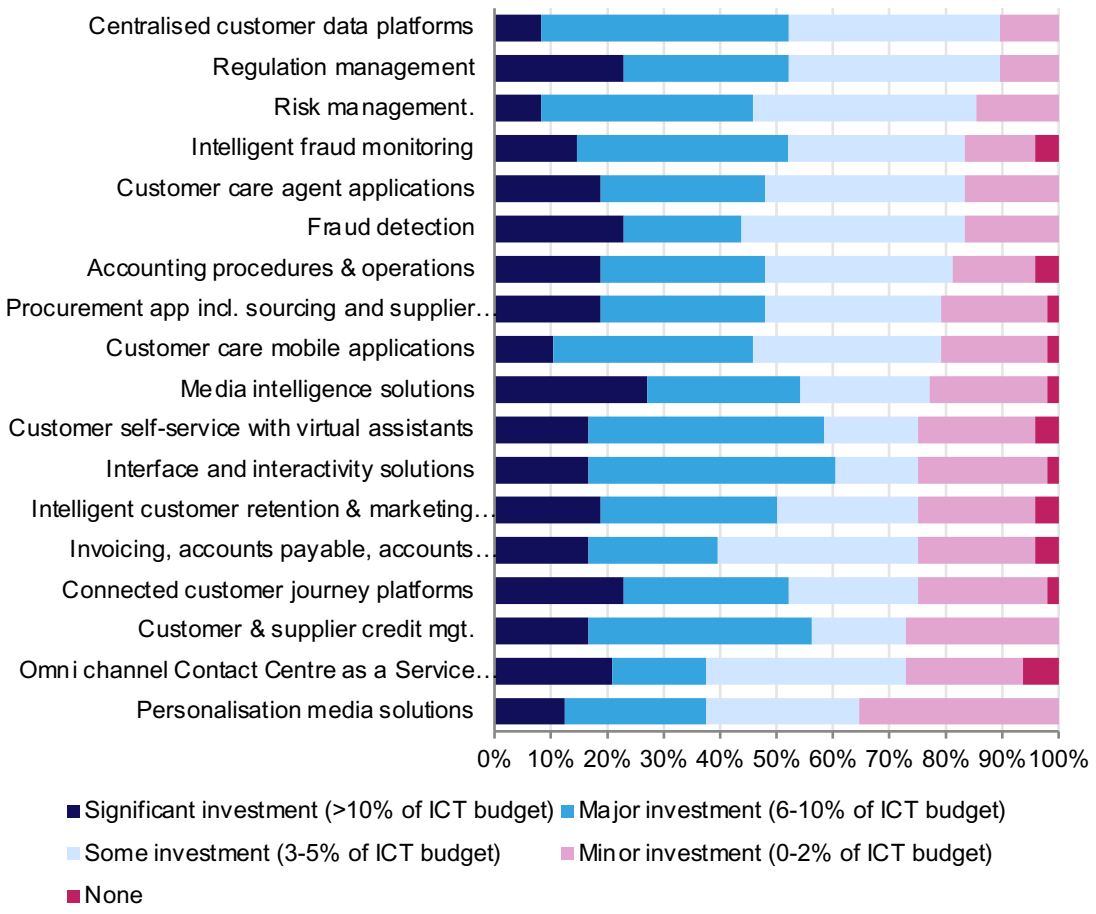
> Respondents are allocating most of their total ICT process budgets to managing risk

ANZ Telecommunications: Planned Investment Industry Processes



Source: DIDataDriven 2023

DX Planned Investment in Telecommunications-specific Applications



Source: DIDataDriven 2023

Respondents are investing in centralised data platforms more than any other area of telecommunication-specific applications

This slide shows the amount respondets plan to invest in telecommunication-specific applications. They were able to choose between significant investment (greater than 10% of their ICT budget), major investment (between 6-10%), some investment (between 3-6%) minor investment (0-2%) or none at all.

The largest investment is in centralised customer data platforms, at #1 with 90%. 8% are making significant investments, 44% major investments and 38% some investment.

Telcos are also investing heavily in business protection, with related applications taking four of the top six places in the list.

90% are dedicating investments to regulation management, putting it equal to the top spot. Risk management is at #3 with 85%, and intelligent fraud monitoring at #4 and fraud detection at #6 are equal with 83%.

Customer care agent applications is #5 on the list, also ranked with 83%.

But there's an interesting twist. Out of all the business protection applications in the top six applications, respondents give centralised data platforms (#1) and risk management (#3) the lowest scores for receiving significant investment of any other, at 8% each.

Omnichannel contact centre as a service is second to lowest on the list, with 73% saying there'd be some investment, but it also has the highest score for no investment at all, with 6%.

Respondents score investment into personalisation media solutions lowest of all, with 65%.

> Business protection is a strong theme, with ANZ telcos putting it in four of the top six positions in the list

Source of Applications Current and Future

Respondents' estimates of application sources in the future show that Cloud/SaaS is still on the ascent

This slide shows the sources telco ANZ businesses use today and expect to use in the future for applications.

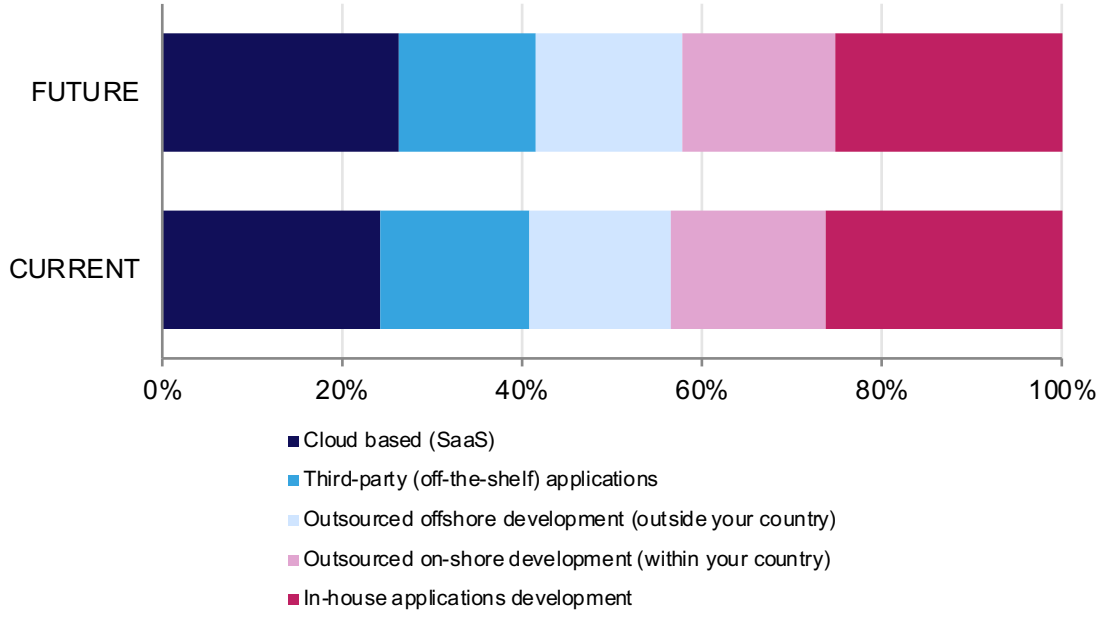
The biggest jump is expected in cloud based or software as a service (SaaS) applications, with respondents using it 24% of the time today versus the 26% they expect to use it in future.

When you consider the expected drop in the use of in-house application development – 25% down from 26% – both measures indicate that the ANZ telco sector expects to rely increasingly on existing cloud products rather than build their own.

Third party party applications sourced off the shelf represents the second biggest difference, and it's also expected to be on the decrease, with 17% today versus 15% in the future.

Respondents will use both offshore developers and developers in the telco business' home country to much the same degree, both at around 16% now and in future.

ANZ Telecommunications: Applications Source Current & Future



Source: DIDataDriven 2023

Responses reveal that adoption of cloud/SaaS products will continue to replace in-house development, while the use of third-party developers will remain static

Cloud and Data Centres

Cloud & Data Centres in the Telecommunications Industry

Telecommunications businesses are investing in cloud platforms as a fundamental enabling technology in DX initiatives. These initiatives are designed to support migration from legacy data centre environments to modern, adaptable and responsive infrastructures and services.

This chapter examines progress with cloud deployments, selection criteria for choosing cloud providers, and the preference for multi-cloud over single-cloud architectures.

81% of ANZ telcos choose cloud services based on integration capabilities

The most important selection criteria for ANZ telcos is the ability of the cloud service to integrate with their own systems, which 81% described as important. Ease of doing business is #2 at 77% and high reliability is at #3, totalling 75%.

Over three quarters of ANZ telcos use more than one cloud service

At 44%, almost half of all ANZ telcos use two cloud platforms, indicating a desire to keep certain areas of their businesses separate. 25% use three platforms and 10% use four or more, so over a third of respondents keep data in multiple separate external domains.

ANZ telcos will allocate major funds towards software as a service (SaaS)

96% of ANZ telcos plan to invest the highest proportion of their cloud budgets on software as a service. Hybrid cloud will receive the second highest cloud spend with 92% investing significant, major or some budget, and disaster recovery as a service is at #3, also with 92%.

Backup and disaster recovery is the biggest cloud and data centre challenge

73% of ANZ telcos call backup and disaster recovery the biggest cloud and date centre challenge. Integration with services is second on the list with 71% of respondents considering it significant and data volumes and storage growth is in third place with 71%.

Cloud adoption is entrenched and growing, but ANZ telcos still have challenges to grapple with – and pay for

Selection Criteria for Cloud Services

81% of ANZ telcos choose cloud services on their ability to integrate with in-house systems

This question asked respondents about the importance of 15 selection criteria when choosing to work with a cloud services partner. The choices were very high, high, medium, low or no importance.

The most important selection criteria for ANZ telcos is the ability of the cloud service to integrate with their own systems, which 81% described as important. 25% say importance is very high and 56% high.

In fact, the top three items on the list can be interpreted as a general consensus that choosing a cloud provider is all about minimising headaches. After integration with their own services, ANZ telcos place ease of doing business at #2, with 29% ascribing very high importance and 48% high importance, totalling 77%.

#3 is high reliability, with 23% very high and 52% high totalling 75%.

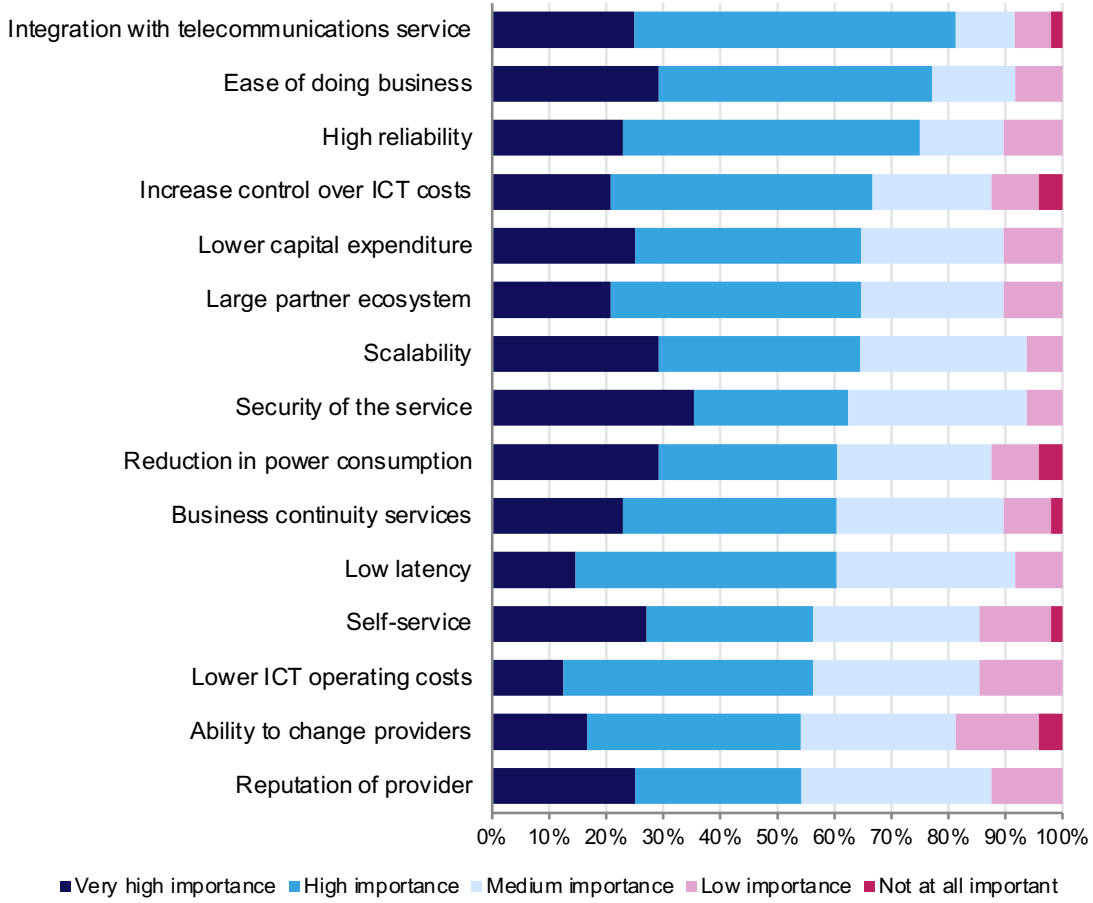
Another theme to emerge is that respondents are very keen for cloud adoption to save money. Wrestling ICT costs under control is #4 selection criteria on the list, with a total of 66% and lower capital expenditure is #5 with 64.6%.

Security is another big concern, with the largest number of respondents giving it very high importance, at 35%, followed by ease of doing business at 29%. Perhaps back to the topic of cost saving, or maybe because of the desire to be good global citizens, a reduction in power consumption is also at 29%.

Agility isn't as much of a concern as you might think, with the ability to change providers coming next to last on the list with 54% and the reputation of the provider equal in last place at 54%.

> Providers who are easy to deal with and save clients money are what ANZ telcos want most in cloud services.

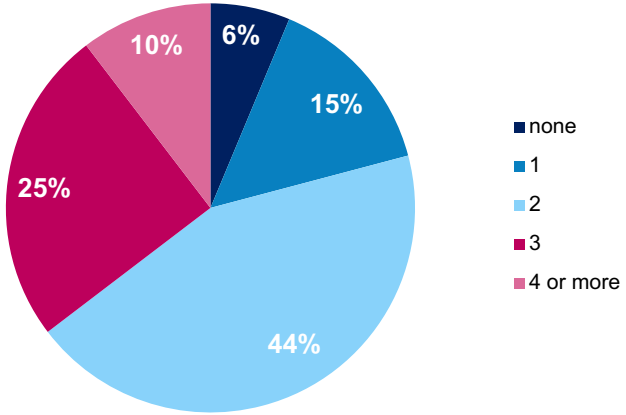
ANZ Telecommunications: Cloud Selection Criteria



Source: DIDataDriven 2023

Number of Cloud Infrastructure/Platform Providers

ANZ Telecommunications:
# of Cloud & Infrastructure Platforms



Source: DIDataDriven 2023

Over three quarters of ANZ telcos use more than one cloud service

In this question, respondents were asked how many cloud services they use.

At 44%, almost half of all ANZ telcos use two cloud platforms, indicating a desire to keep certain areas of their businesses separate.

25% use three platforms and 10% use four or more, so over a third of respondents keep data in multiple separate external domains.

Only 6% use no cloud service at all. It's fairly unfathomable that any company in a high tech industry like telecommunications has no cloud presences whatsoever, so this figure might indicate the small few ANZ telcos that maintain their own clouds or on-premise data centres.

> Multiple cloud providers is the norm among ANZ telcos, with two services the predominant statistic.

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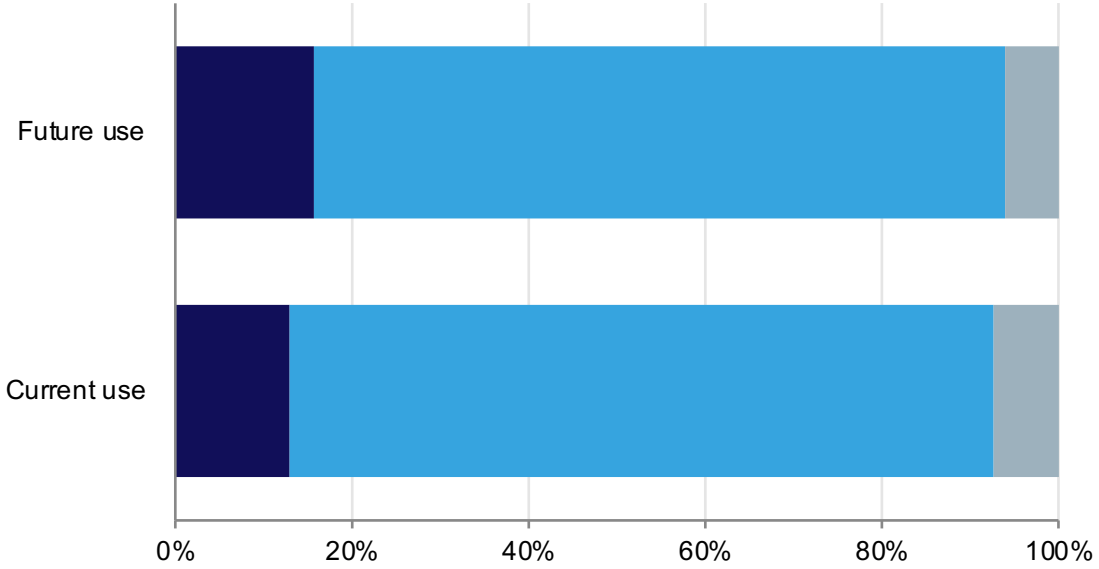
Cloud Providers/Hosting Current & Future Use

ANZ Telecommunications: Cloud Providers/Hosting Current & Future



- the left-most - in house, co-location and external data centres
- the middle - cloud hyperscalers
- the right - other cloud platform suppliers.

Source: DIDataDriven 2023

Hyperscale cloud service use is expected to fall in the future, according to ANZ telcos

Hyperscalers will remain be the primary cloud architecture in the ANZ telco industry, representing around four-fifths of the industry.

However, after years in command of the large cloud provider market, respondents predict they'll actually use hyperscalers to a slightly lower degree. 80% use such services today but anticipate using them only 78% in future.

There'll be a corresponding rise of several percent in the use of in-house, co-located or external data centre services, going from 13% today to 16% in future.

There also won't be much change in the use of other cloud services, changing from 6% today to 7% in future.

> The biggest shift on the horizon in the industry is a move away from hyperscaler cloud providers to in-house, co-located or external data centre providers

Cloud and Data Centre Planned Investments

96% of ANZ telcos plan to allocate cloud and data centre budget towards software as a service (SaaS)

This slide is about planned investments in cloud and data centre services. Respondents were asked to specify their planned level of investment in six services. The options were significant investment, major, some, minor and none.

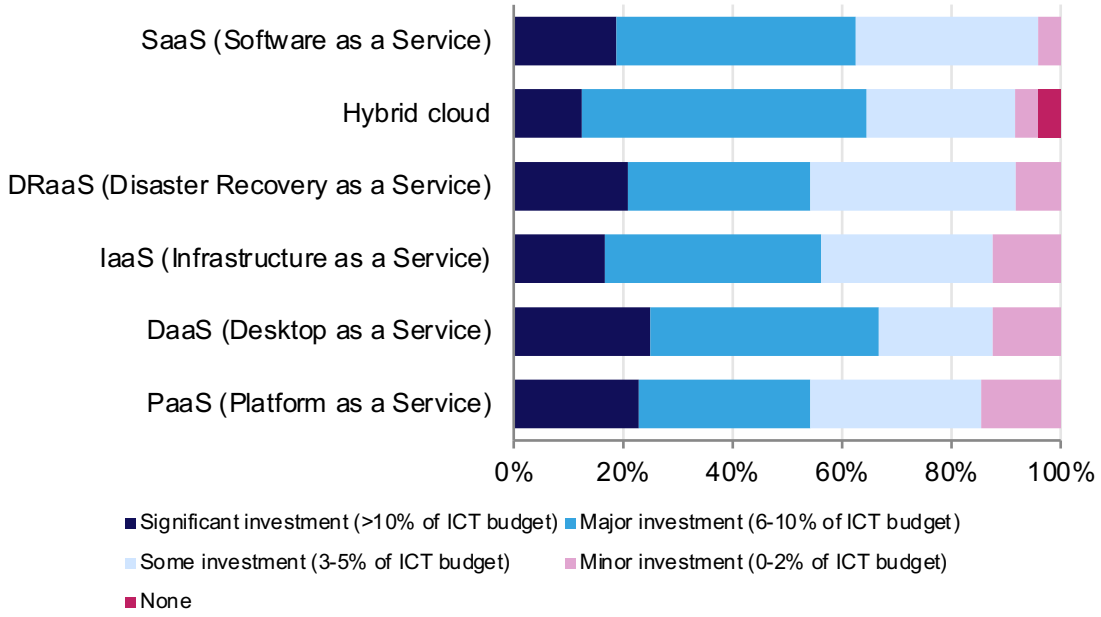
ANZ telcos plan to invest the highest proportion of their cloud and data centre budgets in software as a service (SaaS), with 19% making a significant investment, 44% major and 33% some, for a total of 96%.

Hybrid cloud is #2 on the list, with 92% investing (13% significant, 52% major and 27% some), and respondents putting disaster recovery as a service equal at #3 with 92% investing (21% significant, 33% major and 38% some).

ANZ telcos plan to dedicate the highest proportion of cloud investment into desktop as a service (DaaS), with 25% saying it will receive significant investment.

Nevertheless, DaaS is second last on the list overall, with respondents reporting plans to allocate 88% of their cloud and data centre budgets to it. Platform as a service (PaaS) is in the final position with 86%..

ANZ Telecommunications: Cloud & Data Centre Planned Investment

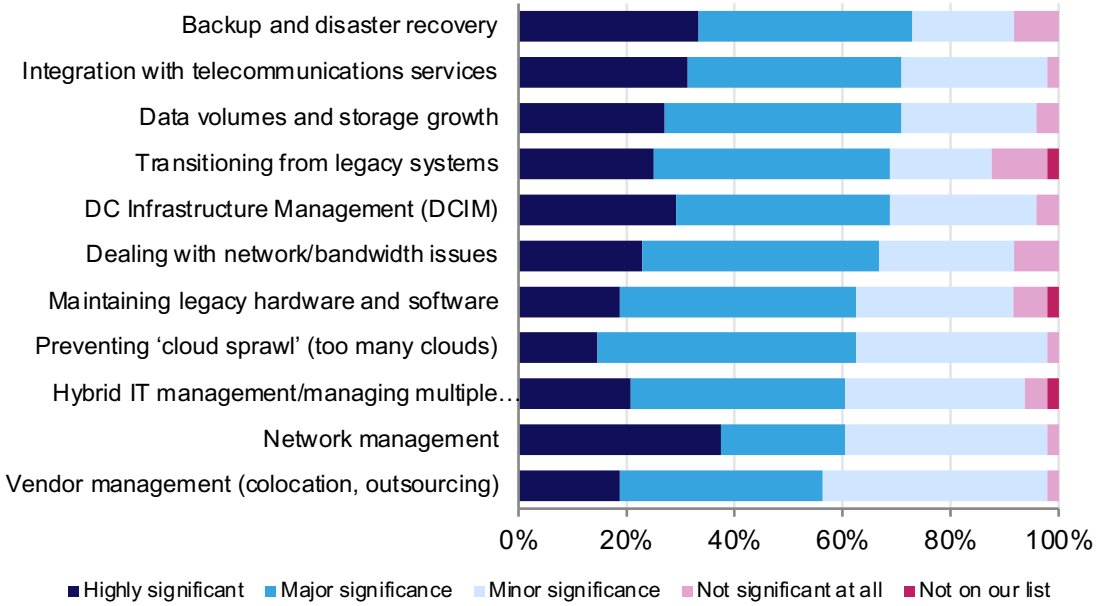


Source: DataDriven 2023

> Respondents say functionality-as-a-service architectures form the bulk of planned cloud and data centre service budgets

Cloud and Data Centre Challenges

ANZ Telecommunications: Cloud & Data Centre Challenges



Source: DIDataDriven 2023

Backup and disaster recovery is the biggest cloud and data centre challenge among ANZ telcos

This question asked respondents about the significance of data centre and cloud challenges. Options were: highly significant challenge, major significance, minor significance, not significant at all, not on our list. The chart is sorted in descending order of most significant challenges.

Backup and disaster recovery is the biggest cloud and date centre challenge for ANZ telcos, with 33% calling it highly significant and 40% saying it has major significance, a total of 73%.

Integration with telecommunications services is second on the list, with 71% of respondents considering it significant (31% calling it highly significant and 40% saying it has major significance).

Data volumes and storage growth overall is equal to integration with telecommunication services on 71%, in third place because of a slightly lower proportion considering it highly significant (27%).

Transitioning from legacy systems is the fourth most significant cloud and data centre challenge for ANZ telcos, at 69%. Respondents ranked DC infrastructure management next on the list at #5, also with 71%.

Network management stands out as a challenge because – of the total respondents who say it's significant (60%) – it has the highest proportion of all responses who call it highly significant at 38%.

However, respondents also positioned network management the second least important challenge overall, coming before vendor management at the bottom of the list with 56%.

Respondents report a host of challenges around situating, storing and managing data in various cloud and on-premise services

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ANZ: Cloud and Data Centre Challenges by Telecomms Subsegment - Ranked

Backup and disaster recovery tops the list of cloud and data centre challenges facing ANZ telcos

The table shows the ranked business objectives for the whole sector (the leftmost column), and also how each subsegment ranks the objectives. Points of note include:

- Backup and disaster recovery is the most important cloud and data centre challenge reported by ANZ telcos, with each industry subsegment ranking it among the top five.
- Respondents in the communication service providers and internet protocol television subsegment rank maintaining legacy hardware and software at #1, but respondents from media broadcasting put it last in the list at #11.
- Network management is highly ranked by media broadcasting (#2) and mobile virtual network operator (#4) respondents, but low on the list by all other subsegments.
- Every subsegment of ANZ telcos ranks data volumes and storage growth in the top three cloud and data centre challenges except for mobile virtual network operators (#7) and satellite carriers, who rank it next-to-last at #10.

ANZ TELECOMMUNICATIONS: CLOUD & DATA CENTRE CHALLENGES	Telecommunications (n=48)	Media Broadcasting (n=20)	Satellite carriers and providers	Communication Service Providers (CSPs) (n=22)	Mobile Network Operators (n=21)	Private Network, Private 5G (n=20)	Operations Support Systems / Business Support Systems (OSS/BSS) (n=24)	Internet Protocol Television (IPTV) (n=19)	Mobile virtual network operator (MVNO) (n=20)
Backup and disaster recovery	1	1	4	3	1	5	1	3	4
Data volumes and storage growth	2	3	10	3	1	2	3	1	7
Integration with telecommunications services	2	3	4	6	1	1	7	3	1
Transitioning from legacy systems	4	3	3	5	4	2	5	3	1
DC Infrastructure Management (DCIM)	4	9	4	8	5	5	3	11	10
Dealing with network/bandwidth issues	6	3	1	2	5	2	5	3	3
Preventing ‘cloud sprawl’ (too many clouds)	7	8	10	8	9	11	8	9	10
Maintaining legacy hardware and software	8	10	2	1	7	7	2	1	4
Hybrid IT management/managing multiple clouds	9	7	4	11	11	7	11	9	8

Note:
Note:

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Cloud and data centre challenges ranked: Australia

Respondents across ANZ telco subsegments rank backup and disaster recovery as the most important cloud and data centre challenge

The table shows the ranked cloud and data centre challenges for the whole Australia Telco sector (the leftmost column), and also how each subsegment ranks the objectives. Points of note include:

- Mobile network operators and mobile virtual network operator (MVNO) wired and wireless telecommunications carriers are the only ANZ telco subsegments who don't rank backup and disaster recovery as one of the top three cloud and date centre challenges.
- Respondents in the media broadcasting subsegment ranked preventing cloud sprawl as the #3 challenge, where every other subsegment except one (mobile virtual network operator (MVNO) wired and wireless telecommunications carriers) ranked it last or next to last in the list.
- Communication service providers and operations support systems/business support systems ranked hybrid IT management/managing multiple clouds at #7, where respondents from every other subsegment ranked it in the top five.
- ANZ telcos in media broadcasting ranked maintaining legacy hardware and software near the bottom of the list at #9, whereas every other subsegment ranked it at #4 or above.

AUSTRALIA TELECOMMUNICATIONS: CLOUD & DATA CENTRE CHALLENGES	Telecommunications (n = 26)	Media Broadcasting (n =10)	Satellite carriers and providers (n = 5)	Communication Service Providers (CSPs) (n =13)	Mobile Network Operators (n =10)	Private Network, Private 5G (n =10)	Operations Support Systems / Business Support Systems (OSS/BSS) (n =12)	Internet Protocol Television (IPTV) (n =8)	Mobile virtual network operator (MVNO) Wired and wireless telecommunications carriers (n = 9)
Backup and disaster recovery	1	1	3	2	6	2	2	1	7
Data volumes and storage growth	2	3	7	2	1	1	5	1	1
Maintaining legacy hardware and software	3	9	1	1	1	2	1	1	4
DC Infrastructure Management (DCIM)	3	10	3	7	6	2	3	10	8
Hybrid IT management/managing multiple clouds	5	3	3	7	1	2	7	4	2

Cloud and data centre challenges ranked: New Zealand

NZ telcos consider moving from legacy systems one of the most important challenge in cloud and date centre services

The table shows the ranked cloud and data centre challenges for the whole New Zealand Telco sector (the leftmost column), and also how each subsegment ranks the objectives. Points of note include:

- Hybrid IT management/managing multiple clouds is an important cloud and data centre challenge to satellite carriers, who rank it #3 in the list, even though most other subsegments in the NZ telco industry rank it at or near the bottom.
- Transitioning from legacy systems is a wide-ranging concern among every subsegment except mobile network operators, who rank it at #8.
- The biggest disparity in the list is in data volumes and storage growth. Respondents in satellite carriers rank it at #11, whereas operations support systems/business support systems consider it the most important cloud and data centre challenge of all at #1.
- Almost all respondents rank dealing with network/bandwidth issues highly, with all but two subsegments (mobile network operators and operations support systems/business support systems) ranking it in the top three challenges.

NS TELECOMMUNICATIONS CLOUD & DATA CENTRE CHALLENGES	Telecommunications (n = 22)	Media Broadcasting (n =10)	Satellite carriers and providers (n = 7)	Communication Service Providers (CSPs) (n =9)	Mobile Network Operators (n =11)	Private Network, Private 5G (n =10)	Operations Support Systems / Business Support Systems (OSS/BSS) (n =12)	Internet Protocol Television (IPTV) (n =11)	Mobile virtual network operator (MVNO) Wired and wireless telecommunications carriers (n = 11)
Integration with telecommunications services	1	1	2	4	1	1	3	1	1
Transitioning from legacy systems	2	3	3	4	8	2	3	1	2
Preventing ‘cloud sprawl’ (too many clouds)	2	7	3	2	3	8	6	3	4
Backup and disaster recovery	2	1	3	8	1	4	5	8	4
Dealing with network/bandwidth issues	2	3	1	1	8	2	6	3	2
DC Infrastructure Management (DCIM)	6	3	3	10	3	4	2	8	4
Vendor management (colocation, outsourcing)	6	10	3	6	3	4	6	3	4
Data volumes and storage growth	6	3	11	9	3	8	1	3	10
Network management	9	8	3	6	3	8	10	8	4
Maintaining legacy hardware and software	10	11	3	2	10	8	6	3	4
Hybrid IT management/managing multiple clouds	10	8	3	11	11	7	11	11	11

Australia: Cloud and Data Centre Challenges by Telecomms Subsegment - Ranked

Cloud management is a pressing challenge

- The top cloud and data centre challenge facing Australian Telecommunications businesses is the management of multiple clouds.
- The third most prominent cloud challenge, preventing cloud sprawl is clearly one aspect of that problem, rating as the third most prominent challenge overall.
- Also related could be the growth of data volumes and storage requirements, which is rated fourth.
- Transformation leaders are also still stuck between the legacy world and the new world of cloud, with maintaining legacy hardware and software ranked as the firth most prominent industry challenge.
- Backup and disaster recovery rated a low ninth overall but was second among broadcasters and streaming/OTT players.

AUSTRALIA: CLOUD & DATA CENTRE CHALLENGES*	Telecommunications (n = 32)	Content Production (n = 15)	Broadcast (n = 10)	Streaming/ OTT (n = 8)	*Publishing/ Publisher & News (n = 6)	*Radio (n = 3)	*Entertainment/ Cable Television (n = 2)	*Sports (incl clubs, leagues, and venues) (n = 3)	*Advertising & Marketing (n =4)	*Ticketing (n = 1)
Hybrid IT management/managing multiple clouds	1	3	3	4	8	1	1	6	3	2
Integration with Telecommunications servic									1	9
Preventing 'cloud sprawl' (too many clouds)									6	10
Data volumes and storage growth									2	1
Maintaining legacy hardware and software									8	6
DC Infrastructure Management (DCIM)									7	5
Network management									5	4
Transitioning from legacy systems									11	11
Backup and disaster recovery									10	8
Dealing with network/bandwidth issues									4	3
Vendor management (colocation, outsourcir									9	7

Charts to come

Note: Many respondent organisations encompass multiple s
Note: *Responses at the overall industry level are generally ut cannot be viewed as representative.

NZ: Cloud and Data Centre Challenges by Telecomms Subsegment - Ranked

Cloud sprawl and networks trouble NZ cloud and DC managers

- The leading cloud and data centre challenges in New Zealand are the prevention of cloud sprawl, network management and dealing with network/bandwidth issues.
- Clearly, at the high end of the market at least, networks are struggling to keep up with insatiable demand.
- There is little variation in these challenges across the industry subsegments, but data centre infrastructure management, the fourth ranked challenge overall, is much less of a challenge to broadcasters, who ranked it 10th.
- Where hybrid IT management ranked as the top challenge when this question was posed to Australian technology leaders, it was 11th and last in New Zealand.

NZ: CLOUD & DATA CENTRE CHALLENGES*	Telecommunications (n = 8)	Content Production (n = 7)	Broadcast (n = 10)	Streaming/ OTT (n = 5)	*Publishing/ Publisher & News (n = 2)	*Radio (n = 1)
Preventing 'cloud sprawl' (too many c					2	2
Network management					1	1
Dealing with network/bandwidth issue					3	3
DC Infrastructure Management (DCIM)					4	4
Backup and disaster recovery					5	5
Maintaining legacy hardware and soft					9	9
Vendor management (colocation, outs					6	6
Data volumes and storage growth					8	8
Integration with Telecommunications services	9	8	8	9	11	11
Transitioning from legacy systems	10	10	6	8	10	10
Hybrid IT management/managing multiple clouds	11	11	7	11	7	7

Charts to come

Source: DIDataDriven 2023

Note: Many respondent organisations encompass multiple sub-industries. Therefore, the total base number will be smaller than the total of all sub-industry responses.
Note: *Responses at the overall industry level are generally representative. Sub-industries with (n>4) respondents are also relatively representative. Sub-industries with n<4 have been shown for reference but cannot be viewed as representative NZ is a small market and samples for some sub-industries were unavailable (cable, sports, advertising/marketing, and ticketing)

Cyber Security, AI/ML, GenAI & Data Analytics

Cyber Security, AI/ML, GenAI & Data Analytics in the Telecommunications Industry

Technologies like cyber security, AI/ML and data/analytics are having a transformative effect on the retail industry.

This section looks at planned investments in each of these technologies and uncovers decision-makers' biggest concerns about the technologies.

Threats from all sides are ANZ telcos' biggest cybersecurity concern

Respondents said breach attempts are the biggest cybersecurity challenge reported, with hacking, threats and malware among the top five or six terms used most in responses.

Cybersecurity insurance will receive more budget than prevention

91% of respondents say they'll earmark some of their ICT budgets to insurance, putting it on top of the list, with incident detection second at 90% and identity access management at #3, both at 90%.

Cost and quality are secondary concerns after security in AI/ML deployments

Security is the most important consideration when it comes to building and deploying AI technologies, with concerns around cost and quality coming in behind it.

Virtual customer interaction technologies will receive most artificial intelligence/machine learning budgets, ANZ telcos say

Respondents will devote the most investment from their AI/ML budgets to virtual customer interaction, with 90% allocating significant, major or some investment. Second on the list is real-time transaction analytics and data modelling at 85%, with automating manufacturing processes at #3 with 83%.

ANZ retailers are balancing investments between prevention technologies and cybersecurity insurance

In Their Own Words: Senior Leaders‘ Biggest Concerns for Cyber Security

ANZ Telecommunications: Cyber Security Challenges

Source: DIDataDriven 2023

> ANZ telcos are trying to stay vigilant against threats from multiple actors, vectors and directions

Threats from both inside and outside the business are the sector’s biggest cybersecurity concern

In this unprompted question, ANZ telcos were asked to state in their own words the biggest cyber security challenge they face as a leader in their organisation. The graphic shows a word cloud where the most commonly stated concerns are shown in proportionally larger font.

Attempts by bad actors is the number one cybersecurity challenge reported by ANZ telcos, with hacking the most noticeable element of the word cloud and breaches, threats and malware among the top five or six most used terms.

Also uppermost in the minds of ANZ telco ICT leaders are threats from inside the organisation, with leaks and employees two prominent terms as well.

Cyber Security Planned Investment

Insuring against breaches will receive more cybersecurity budget than any other initiative – including prevention

Respondents were asked about their planned level of investment in 25 cyber security products. Options were significant investment, major investment, some investment, minor investment and none.

When cyberthreat experts say it's not a a matter of whether but when you'll be breached, respondents from ANZ telcos say their biggest cybersecurity investment will be insurance.

23% say they'll make a significant investment in the area, 42% a major investment and 27% some investment, for a total of 91% earmarking an investment of 6% or more of their ICT budget.

From there, the remainder of the top five investments are all about prevention. Incident detection response and recovery is second on the list, with 15% making a significant investment, 42% major and 33% some, for a total of 90%.

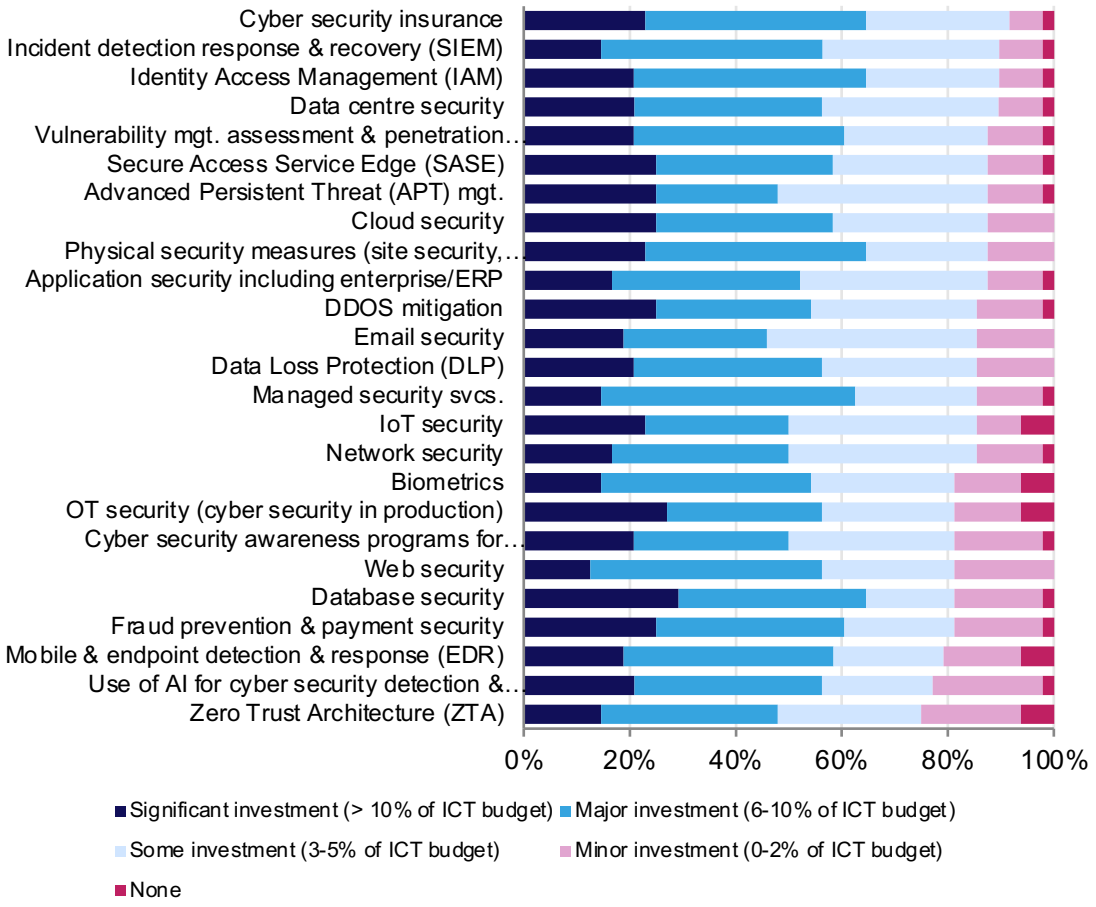
Identity access management is #3 and data centre security is #4, both with totals of 90%, and vulnerability assessment services is at #5 with 88%.

The three areas ANZ telcos plan on investing the lowest portion of their ICT budgets to are fraud prevention/payment security, which 81% say will get significant, major or some investment, AI cybersecurity detection at 77% and zero trust architecture at 75%.

It should be noted that despite being the investment in the chart respondents are planning to spend the least of their ICT budget on, 75% isn't very far behind the highest figure of 91% – clearly cybersecurity is an important area to ANZ telcos across the board.

> Most items on the list are about detection and protection, but ANZ telcos are taking an 'expect the worst' stance.

ANZ Telecommunications: Cyber Security Planned Investment



Source: DIDataDriven 2023

In Their Own Words: Senior Leaders‘ Biggest Concerns for AI/ML

Cost and quality are secondary concerns after security in AI/ML deployments

In this unprompted question, ANZ telco business leaders were asked to state in their own words the biggest AI/ML concern they face as a leader in their organisation. The graphic shows a word cloud where the most commonly stated concerns are shown in proportionally larger font.

After data, security is the single biggest concern respondents see in deploying AI in their businesses, with 'failure’ also noticeable amongst the most visible terms.

Getting the best product for the expense is of secondary importance, with cost and quality among the most popular five or six terms, accuracy and capabilities not far behind them.

Harder to see down the rankings are the words replacing and employees, reflecting concerns about losing valuable human skills.

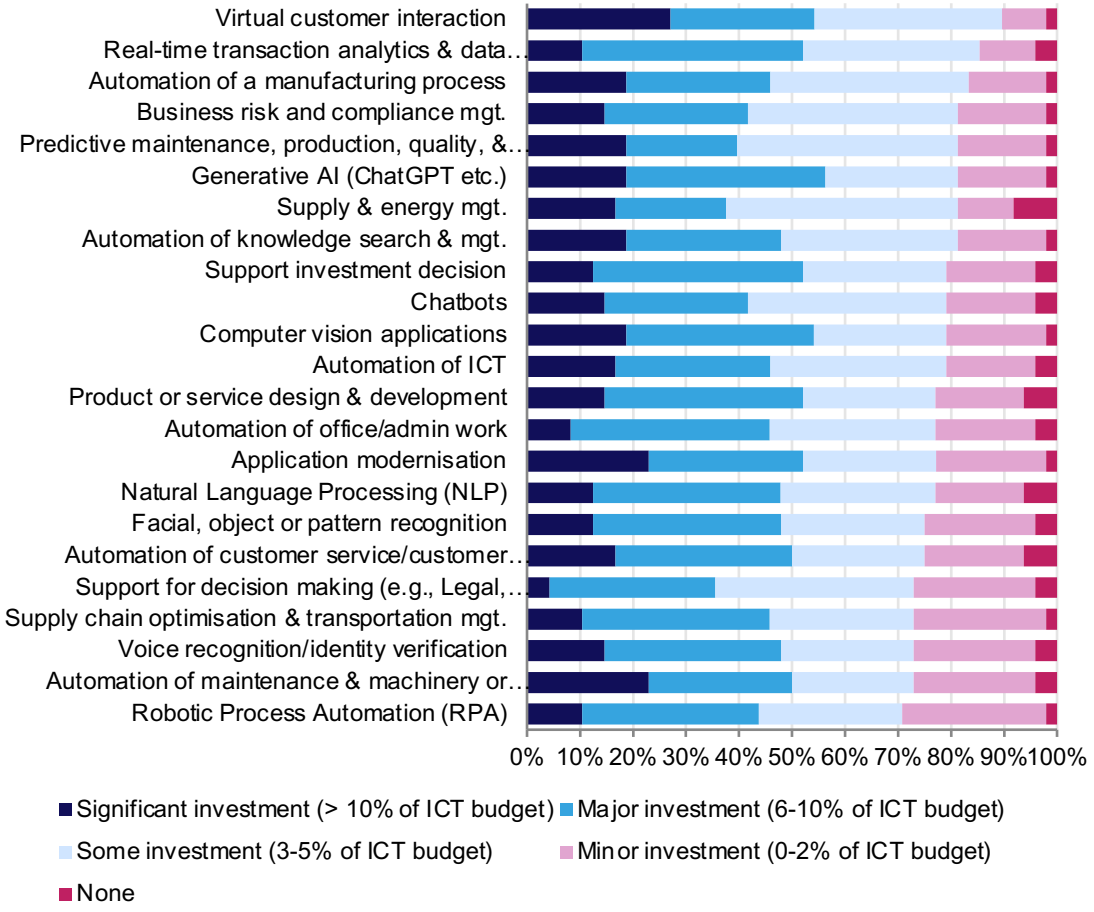
ANZ Telecommunications: AI/ML Challenges

Source: DIDataDriven 2023

> Uncertainty about how safe and effective AI products will be are the biggest concerns ANZ telcos want to overcome

AI/ML Planned Investment

ANZ Telecommunications: AI/ML Planned



Source: DIDataDriven 2023

Virtual customer interaction technologies will receive most artificial intelligence/machine learning budgets, ANZ telcos say

Respondents plan to devote the most investment from their artificial intelligence/machine learning (AI/ML) budgets to virtual customer interaction, with 27% allocating significant investment, 27% major investment and 35% some investment, for a total of 90%.

Real-time transaction analytics and data modelling is #2 on the list, and together with the #5 entry (predictive maintenance, production, quality & failure prediction), it forms an AI ecosystem ANZ telcos are keen to exploit, with live data from customers informing directly and automatically on the way products are built and marketed.

10% of respondents plan to devote significant investment to real-time transaction analytics and data modelling, 42% major and 33% some, totalling 85%, putting it in the #2 position, and in predictive maintenance, production, quality & failure prediction (at #5) the figures are 19%, 21% and 42%, for a total of 81%.

The principles behind industry 4.0 are also taking hold, with the automation of a manufacturing process at #3. Significant investment is at 19%, major at 27% and some at 38%, for a total of 83%.

AI/ML is also being applied to business risk and compliance management on a wider scale, with respondents putting it at #4 on the list at 81%, equal to predictive maintenance.

Virtual customer interaction will attract the highest proportion of significant investment, at 27%, and automation of maintenance & machinery or infrastructure is close behind with 23% of significant investment, equal with application modernisation at 23%.

Robotic process automation is last on the list, with 71% of respondents saying they plan to allocate significant, major or some AI/ML budget to it.

> Respondents plan to invest in AI/ML to apply customer/sales interaction directly and automatically to maintenance, production and quality

Data & Analytics Priorities for Use Cases

ANZ telcos consider improving the customer experience the best use of data and analytics

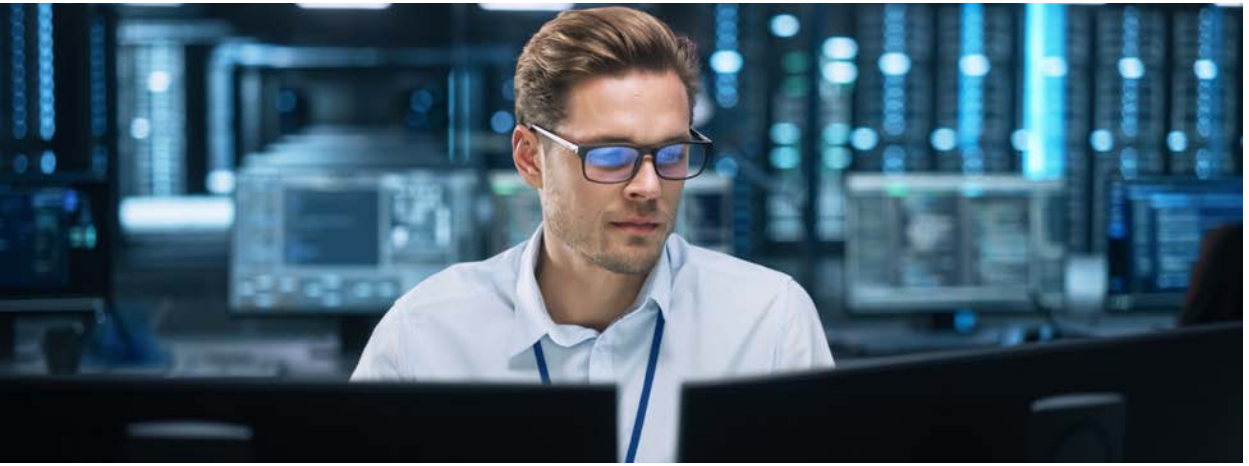
Telecommunications organisations in ANZ want data and analytics to improve and customise the customer experience more than about any other factor.

With so many players in the supply chain and little control over the network quality of their own suppliers, offering products and service that are personalised to each customer is their best chance to foster brand loyalty.

But customers are fickle, and as much as they might love certain brands, creating new products and services to keep them around is the second most important priority.

Such creativity extends to the entire business, not just products. applying data and analytics to other business assets and data to make the CX even more meaningful occupies #3 and #4 – evolving the operating model and expanding CX respectively.

Providing customers with assurances about risks to services and private data, #5 on the list, establishes invaluable credibility, and a general drive to assure long-term profitability is #6.



DATA & ANALYTICS PRIORITIES FOR USE CASES	Ranking
Improve CX with personalised customer prods & svcs	1
Drive new prod design decisions & create new svcs	2
Evolve our operating model	3
Extend the breadth & depth of our CX by connecting with our wider ecosystem	4
Access risk data to establish trust with their customers	5
Help the organisation with long-term profitability	6

> Personal service to keep customers loyal and new products and services to keep them coming back are the primary uses for data and analytics

Industry Hype, Technology Adoption and Attitudes to the Future

Delivered to you by: aws

Industry Hype, Technology Adoption and Attitudes to the Future

Separating hype from reality
It is often hard to separate hype or myth from reality in the technology industry. Many technologies are talked about so much that the reality of their importance is lost in all of the noise. To help cut through the disinformation, we developed the *DataDriven Technology Hype-Dial.*

Overhyped, underhyped, important or not important?
As an integral part of our extensive research process, DataDriven surveys hundreds of ICT decision makers in specific markets. We ask respondents to rate a number of technologies or business trends in terms of whether they believe them to be overhyped or underhyped, and whether they are important or not.

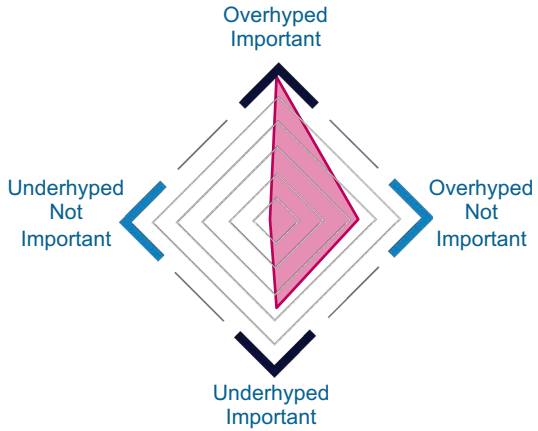
This section also identifies the **technology adoption profile** of respondent businesses, and their perspectives on the future.

The Hype-Dial Evaluates technology based on merit

The DataDriven Technology Hype-Dial allows ICT decision makers to consider or reject a new technology or business trend based on its merits as identified by their peers. ICT decision makers evaluate the benefits of technologies in terms of their enablement of business and ICT objectives, which evolve over time, but which do not change nearly as quickly as technology.

The shape of the dial indicates the level of reality

Overall results are analysed and expressed as a four-point radar diagram for each technology or trend. A fictitious example is shown below. The thinner the shape the more important ICT decision makers believe the technology to be. The higher the shape the more the technology is believed to be overhyped.

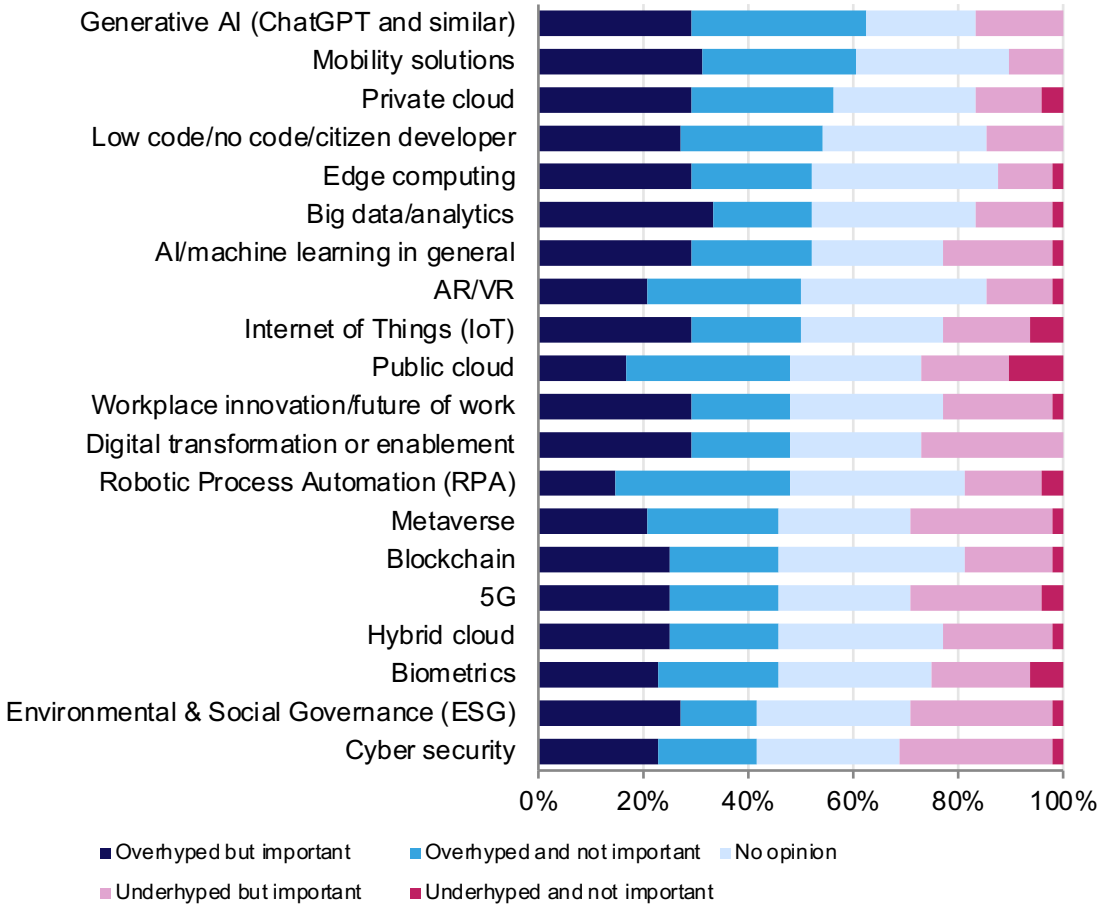


Hype-Dial for Example Market

The Technology Hype-Dial provides a visual representation of the relative importance of a technology or initiative compared to market hype

Detailed Analysis for Selected Technologies: Overhyped, Underhyped, Important or not?

ANZ Telecommunications: HYPE vs Importance



Source: DIDataDriven 2023

Respondents call generative AI products like ChatGPT are the most overhyped technology in the field

Respondents were asked to rate various technologies for their level of hype and/or importance. Their choices were overhyped but important, overhyped and unimportant, no opinion, underhyped but important and underhyped and unimportant.

The most overhyped technology ANZ telcos report is the one that's capturing all the headlines this year, generative AI (products like ChatGPT).

63% of respondents consider it overhyped, with 29% saying it's important and 33% saying it's unimportant.

#2 on the list is mobility solutions, with 60% considering the area overhyped, 32% saying it's important (a higher proportion than generative AI, #1 on the list) and 29% unimportant.

Private cloud is at #3, with 29% of respondents considering it overhyped but important and 27% overhyped and not important, a total of 56%.

At #4, 54% of respondents thought low code/no code/citizen development is overhyped, with 27% saying both that it's important and unimportant, and for edge computing the total figure is 52%, with 29% considering it important and 23% unimportant.

Environmental and social governance (ESG) and cybersecurity are at the bottom of the list, with 42% of respondents considering both measures overhyped. Cybersecurity also had the highest measure overall among respondents who consider it underhyped but important, at 29%.

> Buzzwords like generative AI and metaverse abound in the industry, but ANZ telcos are balancing their needs with the hype carefully

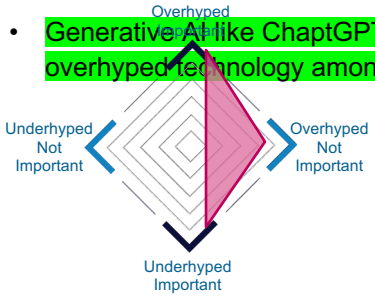
Hype Dials for Selected Technologies: Overhyped, Underhyped, Important or not?

Technology Hype-Dials: Key points

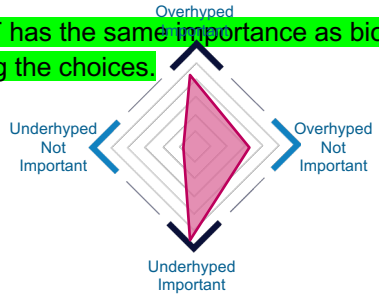
The pink shape indicates where specific areas of IT investment sit in terms of hype and importance according to ANZ business leaders

- Digital transformation is equally as important as sustainability/corporate social responsibility, and is somewhat overhyped.
- Cybersecurity is near the top of the list of important technologies, and is the least overhyped.
- Public cloud is considered unimportant and is quite overhyped
- Private cloud has the lowest count of respondents who consider it important, and it's the second most overhyped choice.
- A larger number of respondents consider robotic process to be unimportant than important, and it's near the top of the most overhyped choices.
- Generative AI like ChaptGPT has the same importance as biometrics, and it's the most overhyped technology among the choices.
- Big data/analytics is halfway down the important/unimportant but is the second most overhyped technology among the choices.
- Biometrics is marginally important and people consider it somewhat overhyped.
- Hybrid cloud is somewhat important and overhyped to the same degree.
- Workplace innovation is the approximately equal on both the importance and hype scales.
- Slightly fewer respondents consider blockchain important than those who consider it unimportant, and a larger proportion consider it overhyped.
- Sustainability/corporate social responsibility is considered the most important technology, and it's also one of the least overhyped.

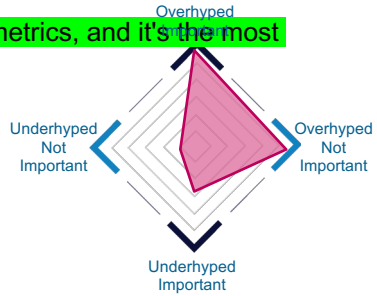
DX Overall



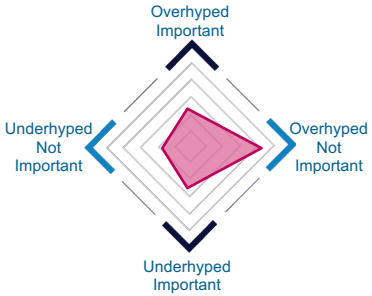
Cyber Security



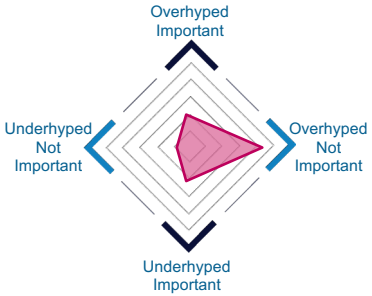
Public Cloud



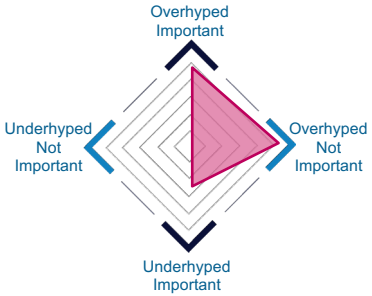
Private Cloud



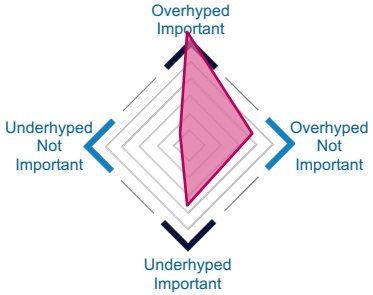
RPA



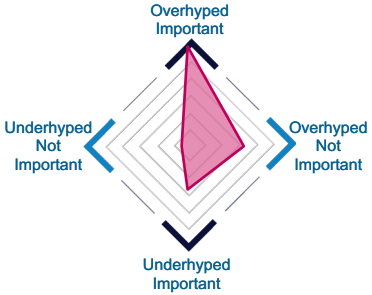
Generative AI



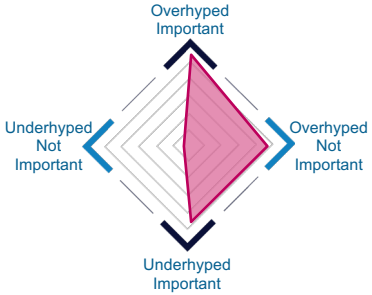
Big Data/Analytics



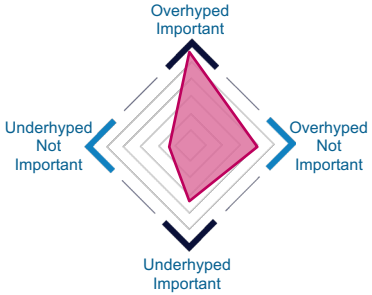
Biometrics



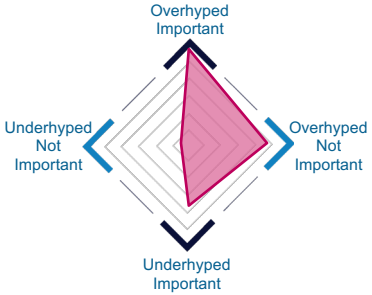
Hybrid Cloud



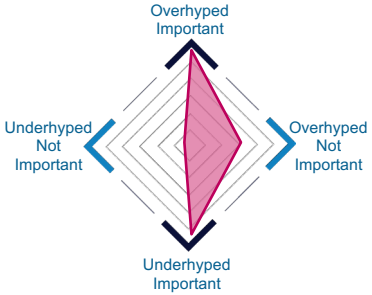
Workplace Innovation



Blockchain



ESG



Hype-Dials

DIDataDriven

Technology Adoption Profiles

79% of respondents among ANZ telcos consider themselves early technology adopters

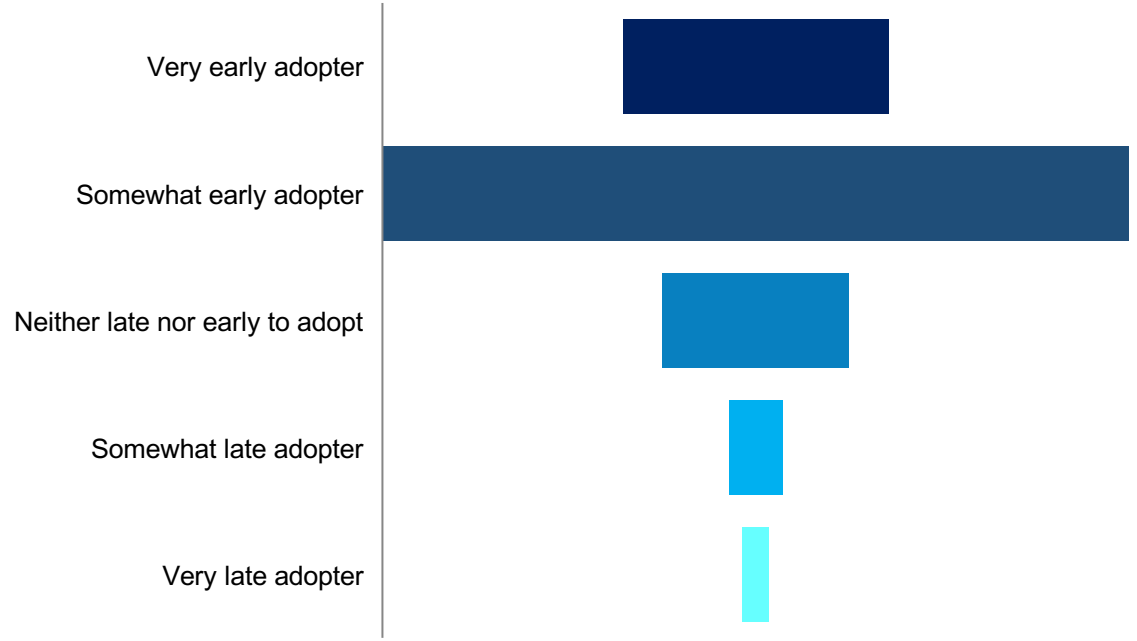
Respondents were asked to rate their organisation's place on a continuum of early or late adopters of technology.

When it comes to technology adoption, the ANZ telco industry can be said to be in a state of cautious optimism.

58% of respondents consider themselves to be 'somewhat early adopters', with 21% describing themselves as 'early adopters', serving as the canary in the coalmine for the rest of the industry to some extent.

15% counted themselves as somewhere in the middle – neither early nor late – and a combined total of 6% called themselves 'somewhat' or 'very' late adopters.

ANZ Telecommunications: Technology Adoption



Source: DataDriven 2023

Early adopter is the order of t three quarters of respondents describe their business.

Very early adopter	0.208
Somewhat early adopter	0.583
Neither late nor early to adopt	0.146
Somewhat late adopter	0.042
Very late adopter	0.021

In Their Own Words: Senior Leaders‘ Thoughts on the Future

ANZ Telecommunications: View of The Future

Source: DIDataDriven 2023

AI and people are a matter of balance, but above all else, ANZ telcos just want business to get continually better

In this unprompted question, retail business leaders were asked to state in their own words how they feel about the future. The graphic shows a word cloud where the most commonly stated responses are shown in proportionally larger font.

Above all, ANZ telco leaders want business to get better over time by any metric. Whether its technology, profitability or innovation, they want their company to advance, develop and get better.

AI is also more than a buzzword now, and was one of the most popular terms reported by respondents.

People are also one of the top five important elements of the business to ANZ telcos, on a par with the word 'intelligence' and only slighter more popular than 'artificial'.

Summary of Key Takeaways

Summary of Key Takeaways

Many findings were extracted from the survey to produce this report, some key takeaways are as follows:

- ANZ Telecommunications sector is focussed on transformation
- Sector leaders are embracing change, investing in technology and developing new models and new ways of accessing ICT-based functionalities.
- The pace of DX in Telecommunications is significant, with high rates of cloud adoption evident already and and multicloud strategies advancing.
- Digital transformation budgets in the ANZ Telecommunications sector also appear strong, with 90% of organisations reporting they expected some ICT budget increase and 25% reporting they expected a 10% increase or more.
- However, hybrid cloud adoption, often seen as a foundation of transformation, appeared somewhat less mature than other areas.
- The top general DX initiatives targeted for investment were, first, hybrid cloud, with 95% of the surveyed organisations planning increased investment and, second, DX enablement, with 92.5%.
- The smart use of data is also key, and the repondents indicated real time data analytics, predictive data analytics and AI/machine learning could also expect significant increases in investment.

Three out of the top six objectives being pursued through DX investment were: increasing ROI, cost optimisation and increasing productivity and efficiency

Appendix 1: Demographics

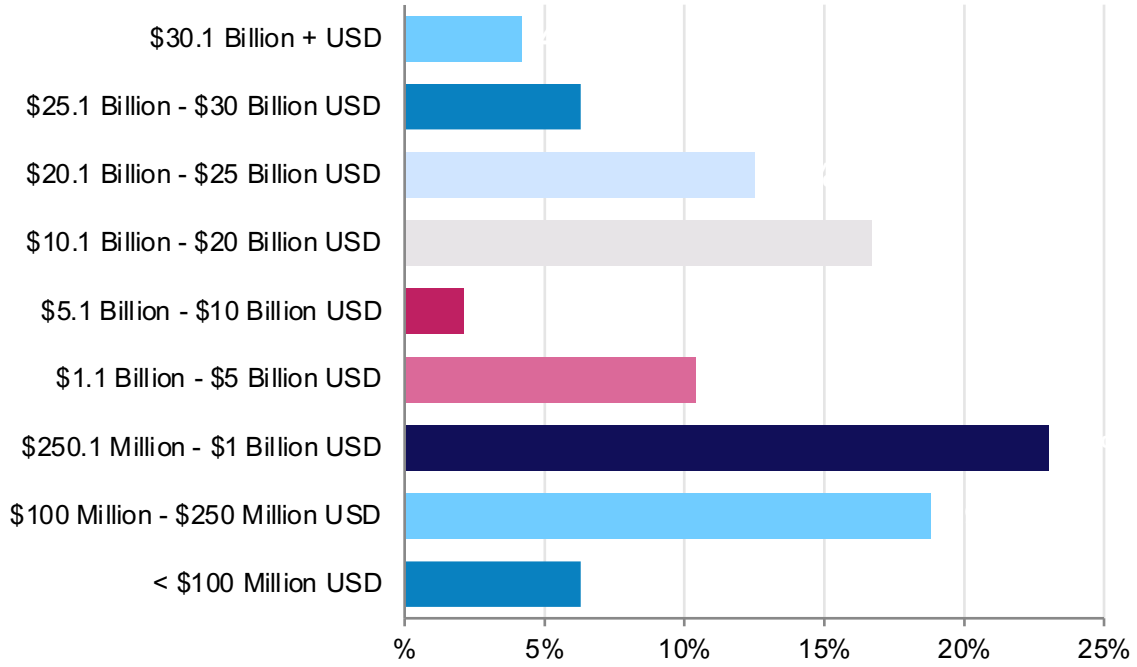
Appendix 1: Demographics

DataDriven applied seven levels of exhaustive screening and validation questions, then conducted extensive data scrubbing and removal of non-representative data and outliers using SPSS.

The result is a highly qualified and reliable set of complete responses from 77 business and ICT decision makers in the ANZ Retail sector.

Many of these 77 respondent organisations have very large revenues and combined the represent a significant slice of the ANZ retail sector.

ANZ Telecommunications: Respondent Revenue (USD)

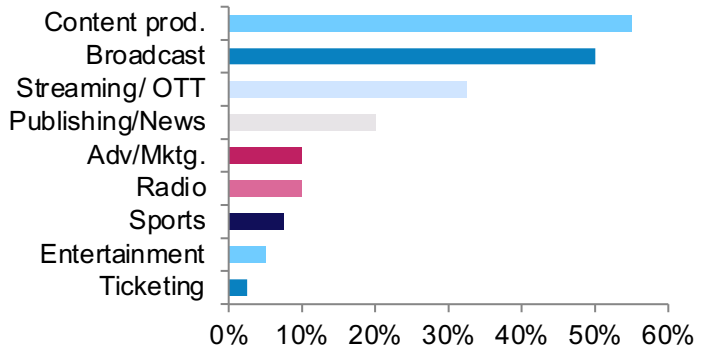


Source: DataDriven 2023

The respondent base constitutes a spread of businesses from very large international streamers and broadcasters to smaller, local content producers

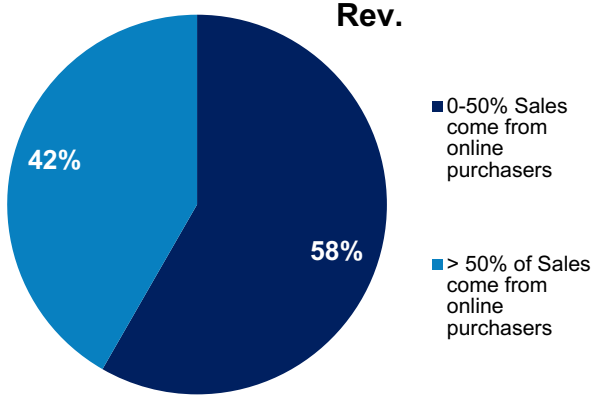
Respondent Source of Business Revenue, Sub-Industry, Age and Gender

ANZ Telecommunications: Sub-Industry



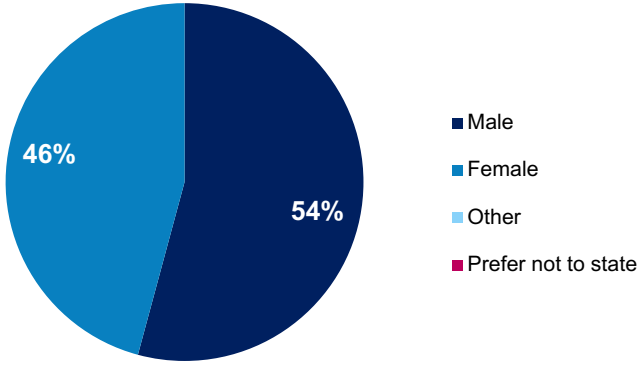
Source: DIDataDriven 2023

ANZ Telecommunications: Offline vs Online Rev.



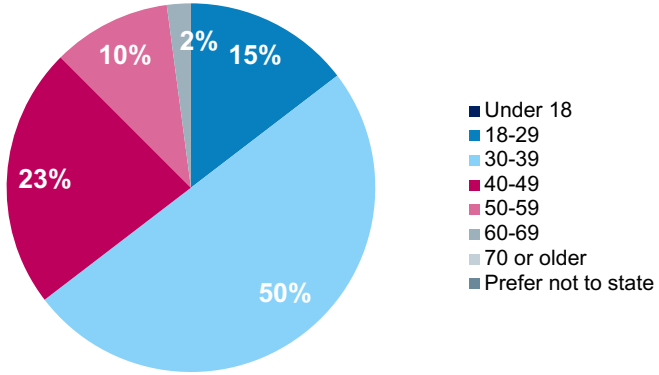
Source: DIDataDriven 2023

ANZ Telecommunications: Gender/Identification



Source: DIDataDriven 2023

ANZ Telecommunications: Respondent Age



Source: DIDataDriven 2023

The ANZ telco sector is made up a range of job descriptions, sales sources and respondent ages

Over 50% of respondents work in the content production industry.

58% of sales made by ANZ telcos come from purchases made online.

Female respondents from ANZ telcos comprised 46% of the total.

50% of respondents were in to 30-39 age bracket, with only 2% over age 60 and 15% in the 18-29 age bracket.

Appendix 2:
Research Research Framework, Methodology and Approach

Appendix 2: Research Framework, Methodology and Approach

The DataDriven Digital Transformation Technology & Enablement Matrix (DXTEM) drives all of our research.

DataDriven has developed a proprietary taxonomy of technologies and trends to ensure consistency of terminology.

The DataDriven Digital Transformation Technology & Enablement Matrix (DXTEM) provides a comprehensive model for our research focus.

A comprehensive research framework

The DataDriven Digital Transformation Technology & Enablement Matrix (DXTEM) comprises five user groups, from the individual to the wider society:

- **Individual:** The effect of Digital Transformation on individuals, at work and in their personal lives.
- **Workplace:** The effect of Digital Transformation on individuals and workgroups within the workplace.
- **Intra-Enterprise:** The effect of Digital Transformation on business practices and business models within the organisation.
- **Extra-Enterprise:** The effect of Digital Transformation on the way the organisation interacts with other organisations.
- **Society:** The effect of Digital Transformation on the economy, government and the wider community.

All placed in the context of **PESTELI (Political, Economic, Society, Technology, Environments, Legal, International)** impacts and influences on decision making.

A common taxonomy drives higher quality survey results and outcomes

The DataDriven Digital Transformation Technology & Enablement Matrix (DXTEM)

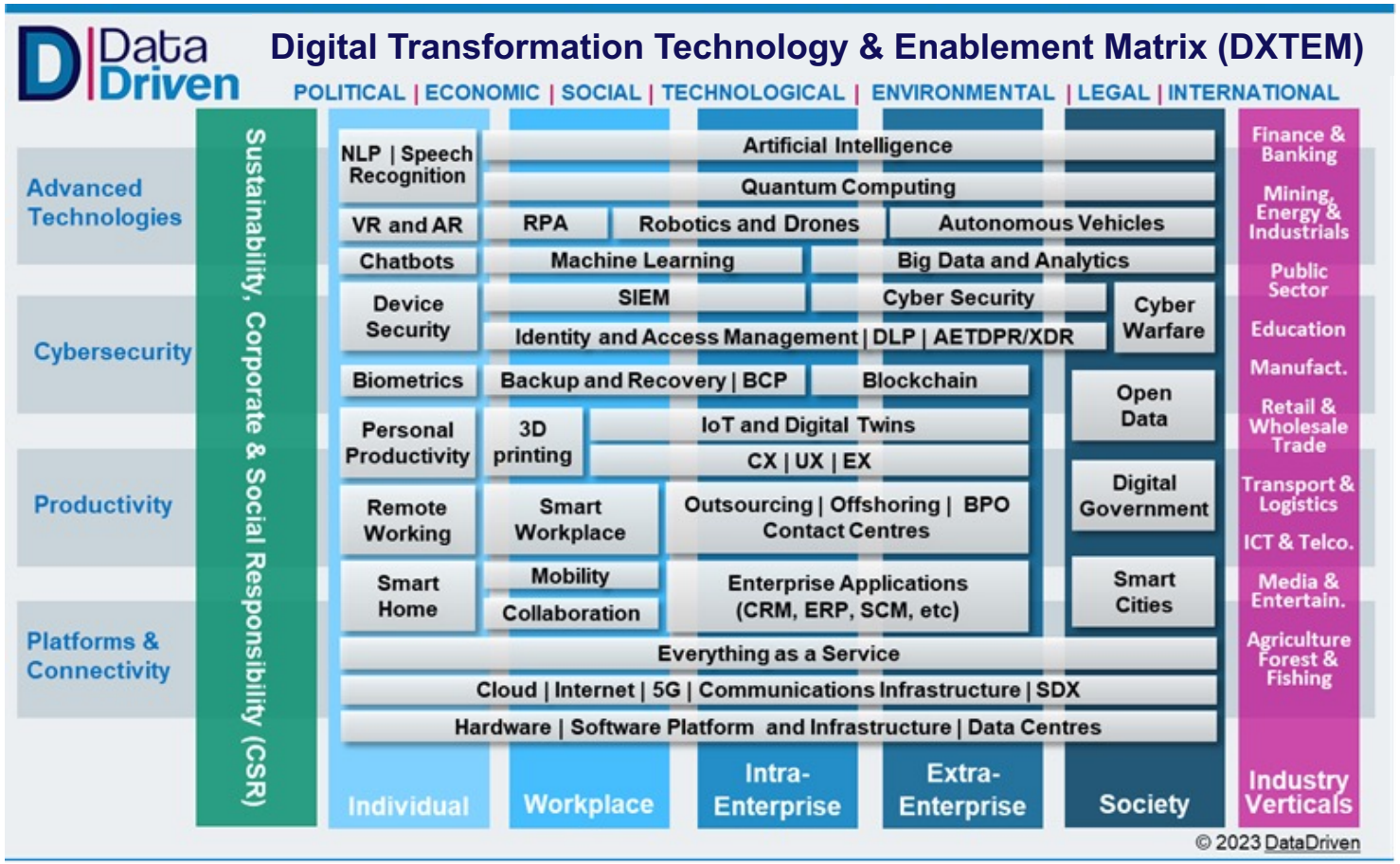
Four major classes of application or technology are overlaid on these five user groups. Some of these have their primary effect on only one level, some affect two or more. The four application or technology areas are:

- **Advanced Technologies:** Machine based technologies which enable new applications through the simulation of human reasoning
- **Cyber security**: Technologies which prevent unwanted intrusions, and which enable the efficient and continued operation of the other technology areas
- **Productivity**: Technologies which enable and increase the productivity across functions at every level and across levels
- **Platforms & Connectivity**: Technologies which enable individuals and organisations within each level to communicate and interact with others at their level and beyond. At the base are the underlying connectivity technologies – Cloud / Internet / 5G / Comms infrastructure/Hardware & Software Platforms – which sit across all five user groups and are the key enablers of the interconnected world at every level.

Sustainability/Corporate & Social Responsibility (CSR) are increasingly critical considerations at all levels, and also overlay the four major classes of application and technology.

Industry Verticals have differing levels of technology uptake and maturity and are therefore specifically included in the research focus.

Graphic Representation of DataDriven DXTEM



Research Approach Based on DXTEM

The DataDriven DXTEM underpins our research

Our unique methodology enables us to clearly and consistently identify key technologies and the groups they affect. We discover the trends in each area through primary research – comprehensive and intensive large-scale surveys of B2B decision makers across major industry sectors and geographic markets.

Extensive demographic grouping and analysis then allows us to measure and compare the effect of each technology in each industry sector and also to compare their impact across different sizes of organisation and different markets. Primary research of this nature is based on what the users of the technology are thinking and doing.

This quantitative analysis is complemented by qualitative research based on interviews with key players in the user, vendor, industry and government communities and secondary research from reputable and peer reviewed sources.

Our research is based on highly reliable and valid facts ... not opinion. Our proven methodology offers insights simply not available with secondary research.

It is the users of technology that ultimately determine the success and speed of its implementation. When predicting futures there is no substitute for asking the users of the technology about their attitudes, behaviours and intentions.

> The users of technology are the final arbiters and the ultimate source of truth for understanding the local and global ICT markets

GLOBAL ICT TRENDS SERIES

How to contact us

Acknowledgement to ICT decision makers

DataDriven would like to thank the many hundreds of people and organisations involved in the production of this report. We would particularly like to thank the ICT decision makers/CIOs and senior IT managers who responded to the survey upon which it is based.

About AWS

Amazon Web Services (AWS) is the world's most comprehensive and broadly adopted cloud, offering over 200 fully featured services from data centres globally. Millions of customers—including the fastest-growing startups, largest enterprises, and leading government agencies—are using AWS to lower costs, become more agile, and innovate faster.

About DataDriven

DataDriven is a global research and advisory services firm specialising in the areas of ICT Strategy for technology users and providers, research-based thought leadership, market and competitive intelligence, and marketing and technology strategy consulting projects. DataDriven is also highly experienced in the area of cross-cultural communications and leadership, managing virtual teams across multiple geographies and runs training and workshops in these areas. In addition, DataDriven associates are skilled at the delivery of presentations at events ranging from facilitation of small C-level roundtables, through to 'big-tent' major keynotes with audiences in the thousands. Over the past four decades DataDriven associates have supported hundreds of ICT providers and other private and public sector organisations. DataDriven has successfully executed projects globally but has a particularly strong focus on Asia/Pacific and Japan

For more information, please see www.datadrivenservices.com.au

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datadrivenservices.com.au

craig.baty@datadriven.au

linkedin.com/in/craigbaty

AWS ONLY BELOW
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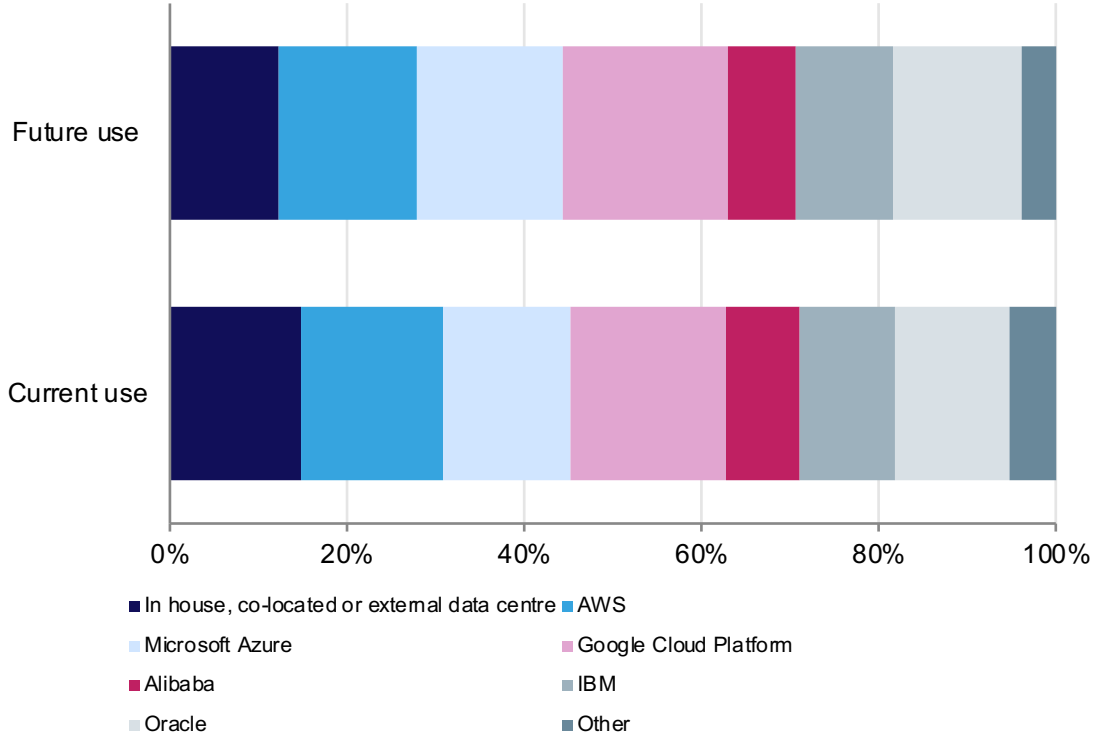
Cloud Providers/Hosting Current & Future Use

NOTE: THIS CHART FOR AWS ONLY – NOT TO BE INCLUDED IN PUBLIC REPORT

ANZ Telecommunications: Cloud Providers/Hosting Current & Future



Source: DIDataDriven 2023

Hyperscalers dominate cloud platform market

Google Cloud platform, AWS and Microsoft Azure, in that order, are the dominant players in the ANZ Telecommunications cloud platform market.

Google Cloud was being used by 17.6% of the surveyed organistions, AWS by 16.1% and Azure by 14.4%.

In house, co-located and external data centres where the next most common platform with 14.8%. However, this was also the platform expected to decline in use the most, with just 12.3% of organisations targeting it for future use.

Azure was the platform being targeted for the strongest growth, with usage expected to grow to 16.5% from the current 14.4%, while use of Oracle Cloud was also expected to grow from 12.9% to 14.5%.

Alibaba Cloud was expected to decline slightly in usage from 8.3% to 7.7%.

Note: This report is for Industy Thought Leadership – The respondents are anonymous – a different LEAD GEN program would be required to generate respondent lists

Azure was the platform being targeted for the strongest growth, with usage expected to grow to 16.5% from the current 14.4%.