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Whitepaper

In Your Face: Reality Technologies in Australia

A Tech Research Asia Research Findings Report
Commissioned by Samsung Electronics Australia Pty Ltd

Executive summary

Research from Tech Research Asia (TRA) and Samsung Electronic Australia suggests Australian organisations are poised to take advantage of what TRA terms 'reality technologies (ie. virtual, augmented and mixed realities) in the Australian business market.

The research shows that these are considered amongst the top 5 emerging technology priorities for Australian businesses, critical for competitive differentiation, customer engagement and digital transformation initiatives.

VR and AR will be massive for us. Imagine being able to showcase a development to potential buyers and then offer them the ability to tailor their dwelling in real time before their eyes – we think this will have a huge impact on sales.

Asia-based Global head of digital transformation, global real estate group

The top learnings?

REALITY TECHNOLOGY IS A COMPANY-WIDE THING. Sales, marketing, human resources and engineering, alongside IT, have strong interest in reality technologies. Organisations where IT is deeply embedded into the business will see stronger success than those companies where IT simply maintains a 'keep the lights on' operations approach.

ACTIVITY IS ALREADY UNDERWAY. Almost one in ten Australian companies have already embarked on reality technology activity. By 2019 the data states one-third of Australian firms will have allocated funding to support reality technology initiatives driving the total close to 50% of all firms surveyed.

MOST ACTIVE SECTORS? Education, health, government and wholesale/retail trade showed strongest interest in developing solutions.

THE BUSINESS CASE IS CUSTOMERS FIRST, SECOND AND THIRD. There is a very clear focus that customers (either external or internal) come first, regardless of which reality technology is being assessed/deployed.

THOSE THAT DEPLOYED SOLUTIONS ARE ALREADY SEEING BENEFITS. Averages of a 3.2% increase in customer satisfaction, a 3.0% increase in sales win rates and a 2.8% reduction in costs were cited as clear outcomes from those organisations that have already deployed reality solutions.

WE'VE BEEN HERE BEFORE: REALITY TECHNOLOGIES ARE SIMPLY ANOTHER 'NEW TECH.101' EXPERIENCE. Reality technologies are no longer in the hype-zone. Whilst some of the practicalities of execution may differ, the macro issues currently framing reality technology discussions are no different to other technologies that emerged in the past - ie. skills shortages (internally and externally), uncertain business cases and ROI.

[1] For definitions see 'Methodology' section

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A deeper dive into the findings

Through our research we present an overview of how Australian firms are currently approaching reality technologies, the goals, drivers and outcomes. For those companies contemplating their own initiatives we have created a starter checklist to support their efforts.

Our thanks to the 352 Australian firms that participated in a quantitative survey and even more thanks to the additional CXOs of 20 businesses and 15 reality technology firms that generously gave time to be interviewed and share in-depth views.

> The sales group have been pushing the exec team very hard to try and develop a VR sales tool. There's an opportunity to link analytics and IOT data to a VR representation that allows customers to train their machine operators.
>
> **AUSTRALIAN-BASED CTO GLOBAL MACHINE TOOLING ORGANISATION**

Consumer experience of reality technologies benefits businesses

It is fair to say that the continued activity in, and adoption of, consumer focused reality technologies has brought benefits to reality technologies in the business environment with many seeing it as a catalyst to deploy reality technologies in a business context.

We expect to see ongoing pollination of the business market through developments in the consumer space. Recent global market research commentary suggests quarterly shipments of virtual reality headsets in Q3 2017 exceeded 1 million units[2], with various market forecasts indicating even higher shipment levels for CY2018.

> Right now with VR we use fake arms and people can practice to install wires, etc – it's hooked up to hardware and software to simulate how people can install our equipment – we've showcased it and the doctors love it.
>
> **AUSTRALIAN CIO GLOBAL MEDICAL DEVICE COMPANY**

Already, Australian firms see reality technologies as having either 'somewhat' or 'strong' relevance to their business environment:

- 32% of respondents stated VR has strong or somewhat relevance to business

- 29% of respondents stated AR has strong or somewhat relevance to business, and

- 26% of respondents stated MR has strong or somewhat relevance to business

[2] https://www.canalys.com/newsroom/media-alert-virtual-reality-headset-shipments-top-1-million-first-time
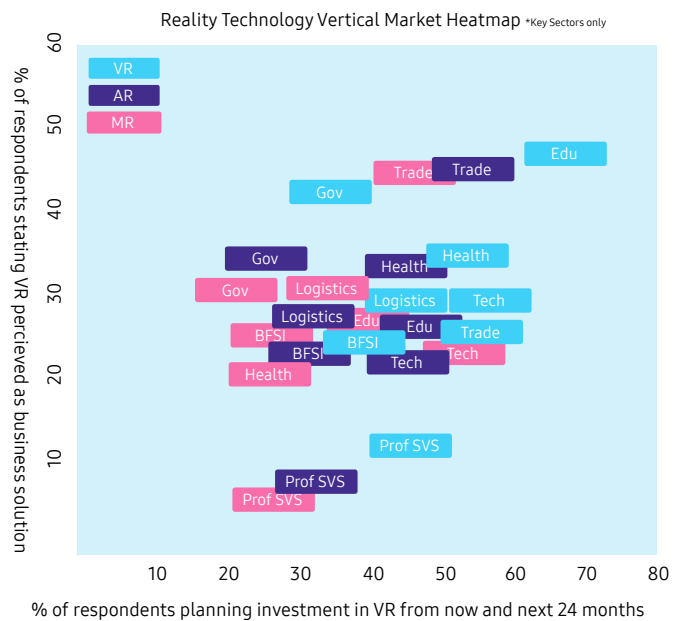
Different horses for different courses

There is no blanket, one-size fits all approach. Rather firms are selectively assessing the relevancy of the technologies on fitness for purpose. Each individual reality technology exhibits different user experiences and applications. In turn, these differences heavily influence solution adoption.

It is apparent from the research that different industries have different deployment plans for each reality technology:

- Education, health, government and wholesale/retail trade showed strongest interest across all technologies.

- Education and government sectors showed stronger belief in VR, whilst health and wholesale/retail trade showed stronger preference for AR

- Wholesale/retail trade also showed strong belief in MR

Mapping companies' intent to deploy reality technology against perceived business relevance created a 'heatmap' of sector activity in the coming 24-months. (note: for the Heatmap chart, top right corner indicates most potential market activity, bottom left, least activity).

Reality Technology Vertical Market Heatmap *Key Sectors only

y-axis: % of respondents stating VR percieved as business solution (0–60)
x-axis: % of respondents planning investment in VR from now and next 24 months (10–80)

Labels: VR, AR, MR, Trade, Trade, Edu, Gov, Gov, Gov, Health, Health, Logistics, Logistics, Tech, Logistics, Edu, Edu, Trade, BFSI, BFSI, Tech, Health, Tech, Prof SVS, Prof SVS, Prof SVS

Budgets are already in place to support activity

We asked organisations "Do you have budget committed to deploy reality technology? If so, when?" and found that:

- 10% of firms have already either developed a proof of concept (POC) or deployed a reality technology solution (POCs were the strong majority of this 10%).

- Within the next two years, in total 49% of companies expect to develop some form or virtual reality solution, 47% expect to develop an augmented reality solution and 43% a mixed reality solution.

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Common Use Cases – it's customer, first, second & third

Companies are thinking broadly about the potential use cases for reality technologies, ranging across areas as diverse as augmented workspaces and offices through to advertising and marketing applications.

There is however a very clear focus that customers (either external or internal) come first, regardless of which reality technology is being assessed.

The top three business drivers for reality technologies showed very strong similarities:

	Virtual Reality	Augmented Reality	Mixed Reality
Stronger customer experience & engagement		✓	
Training & education		✓	
Marketing activities	✓		
Design & engineering applications		✓	
Collaboration & communication applications			✓

Use cases are already public. In our research we came across organisations pursuing a number of deployments including:

- The Education sector developing 'field trips' for students to bring education

experiences to (almost) life. Critically unlike 'single' viewer VR experiences these field trips are a multi-user experience, shared across the group.

- The Health sector using VR across multiple aspects of patient treatment and support – pain management (and reduction in opioid medication options), relaxation therapy and phobia treatments.

- The Retail sector using both VR and AR solutions to create new sales tools, promotional campaigns and advertising activity to promote greater user engagement and involvement.

- Logistics and Manufacturing sectors using VR supporting employee training, OHS and compliance education through immersive VR experiences.

> We think there's a really strong opportunity for us to develop a training tool for people in our warehouse and shipping departments, particularly where we're moving dangerous goods.
>
> **CIO NATIONAL LOGISTICS COMPANY**

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Outcomes from those that have already deployed reality technology solutions/POCs

We asked those companies that had deployed or trialled reality technology solutions about the actual outcomes and benefits they experienced:

- Linking to improving the customer experience and engagement, companies evidenced an average increase in customer satisfaction by 3.2%,

- Sales win rates increased on average by 3.0%, and

- Improved training and education effectiveness contributed to an average cost reduction of 2.8%

Echoing the business drivers, the table below shows that actual outcomes reflect subsets of the customer focus driver:

Virtual Reality	Augmented Reality	Mixed Reality
Improved sales win ratios	Reduced costs/ improved customer loyalty	Improved sales effectiveness
Improved collaboration	Improved sales effectiveness	Getting solutions more quickly to customers/ effective training and education
Improved sales effectiveness/employee satisfaction	Collaboration/quicker go-to-market activity	'almost everything else'

You know what's really tricky when it comes to this stuff? Standards. There's no interoperability across different solutions. That makes it a lottery if you're going to develop a solution. It's a lot worse than the old VHS and Betamax argument. When you have limited funds it's extremely difficult to feel confident about what is essentially taking a punt on a particular VR solution.

CTO AUSTRALIAN-BASED GLOBAL SPORTING BODY

Use Cases By Reality Technology
Multiple answers allowed

MR   AR   VR
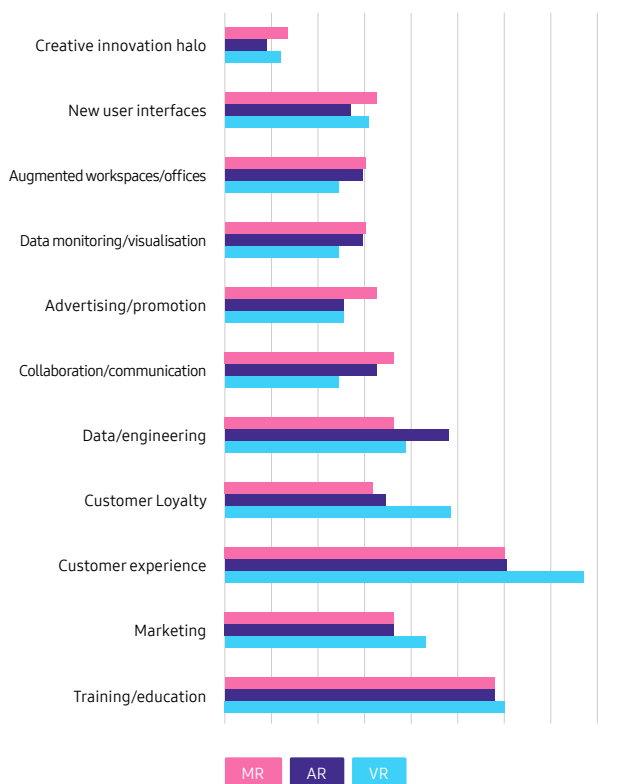
Déjà vu anyone? The 'gotchas' of New Technology 101

From the days of mainframes and distributed computing, any new technology brings challenges for early adopters. Commercial models tend to be a little 'fluid', reference architectures thin on the ground and skills sets and experience somewhat light (on both sides of the fence).

Reality technologies are no different.

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The top three reality technology inhibitors:

- Relevancy to business was the most significant inhibitor for organisations – they simply didn't 'get it' when it came to the business potential.

- For those that did 'get it', they weren't entirely sure of what 'it' was – an unclear business case was cited as the second issue blocking the development of solutions.

- Overall development costs are perceived as expensive – a typical solution involves much more than hardware. Software and services are an integral part, as too are content and connectivity.

Another common (and valid) concern many organisations cited around developing solutions was the lack of content at an economical price-point. Currently the emerging nature of the solutions means firms are pursuing individual, bespoke solutions – there are no common, standard pricing structures currently in place.

Third party content agencies were considered expensive by firms pursuing reality technology initiatives. However it is interesting to note that this perception was typically attributed to two different factors:

- The firm procuring the content was uncertain as to what an 'acceptable' price point may be and consequently had underestimated the expense, or

- Some agencies were taking opportunity to premium price their services to 'manage' demand.
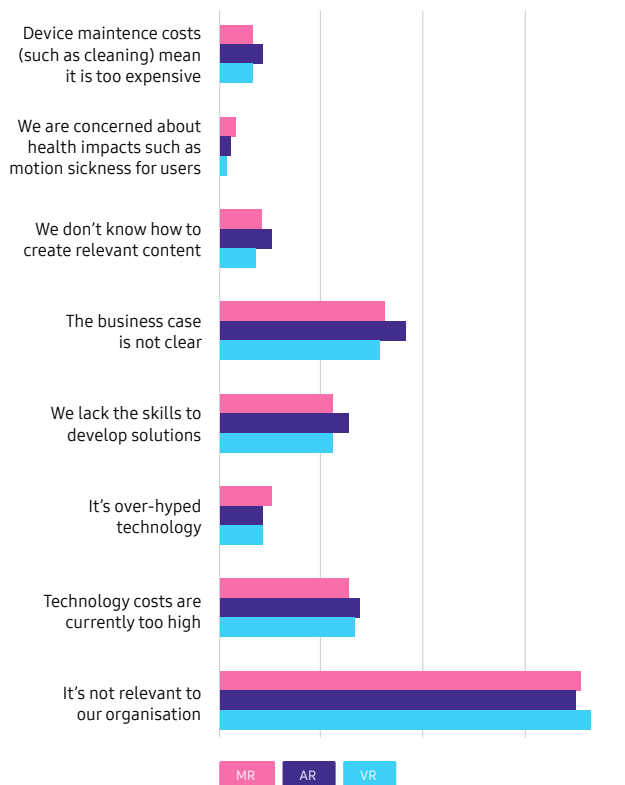
Regardless, it was clear from discussions that a well-planned content strategy will be critical to success.

Concerns regarding reality technology 'interoperability' also contributed to a wariness amongst some organisations, particularly in the light of budget considerations. For many firms, developing for multiple hardware and software platforms was an expensive and unpalatable option.

To circumvent line item technology budget constraints, many POCs or deployments actually saw their genesis as part of broader digital transformation or innovation programmes. No organisation interviewed

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had a formal, embedded reality programme as part of their operations. Instead most had skunk-work style approaches or saw initiation from outside of the IT department with line of business personnel.

The chart below details the major inhibitors organisations identified that are stopping investment in reality technologies.

In Closing

Our research indicates that reality technology has started its move from hype to, well, reality. Use cases continue to come to light, hardware solutions span a myriad of price points giving firms an option of starting small and local Australian firms are developing content, skills and capabilities.

Despite some negative issues associated with reality technologies being akin to 'new tech.101', early movers are already realising benefits.

The data shows positive impacts on customer wins, cost reduction and customer engagement – all key areas of business and operational focus for organisations.

If you feel reality technology has relevance to your organisation, move now before they become common 'table stakes' and your ability to differentiate is limited to a 'me too' position.

If considering partners, look for the following experience and capabilities:

- Awareness of software development and content creation,

- Multi-platform reality approach,

- An effective partner ecosystem, and

- Strong security capabilities.

Lastly, treat your investment in the area as any other emerging technology – plan, budget, be realistic and measure success.

It's (VR and AR) something we're actively assessing right now. Our plan is to create education and document content that our viewers can access to immerse themselves in rather than simply view on a screen.

HEAD OF DIGITAL DEVELOPMENT, AUSTRALIAN MEDIA AND BROADCASTING GROUP

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METHODOLOGY

TRA undertook this research involving 387 Australian organisations using a blended model incorporating:

- Telephone interviews with Australian organisations (both businesses and vendors in the reality technology sectors) in August and September 2017, n=35

- Formal quantitative survey research in September and October 2017, n=352

- Desk research into Australian and international business technology trends

We used the following definitions when referring to 'reality technologies':

Virtual reality (VR) a simulated experience which replicates or creates a multitude of environments and situations accessed by a head-mounted display.

Augmented reality (AR) the overlay of data onto a smart display such as mobile device, computer screens, glasses, helmets and visors.

Mixed reality (MR) the blending of both virtual and augmented realities, mixed reality overlays virtual content into real-word environments, typically through a head-up display.

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