
AN INVESTOR'S PERSPECTIVE: SHAPING URBAN INFRASTRUCTURE TO DELIVER QUALITY OF LIFE

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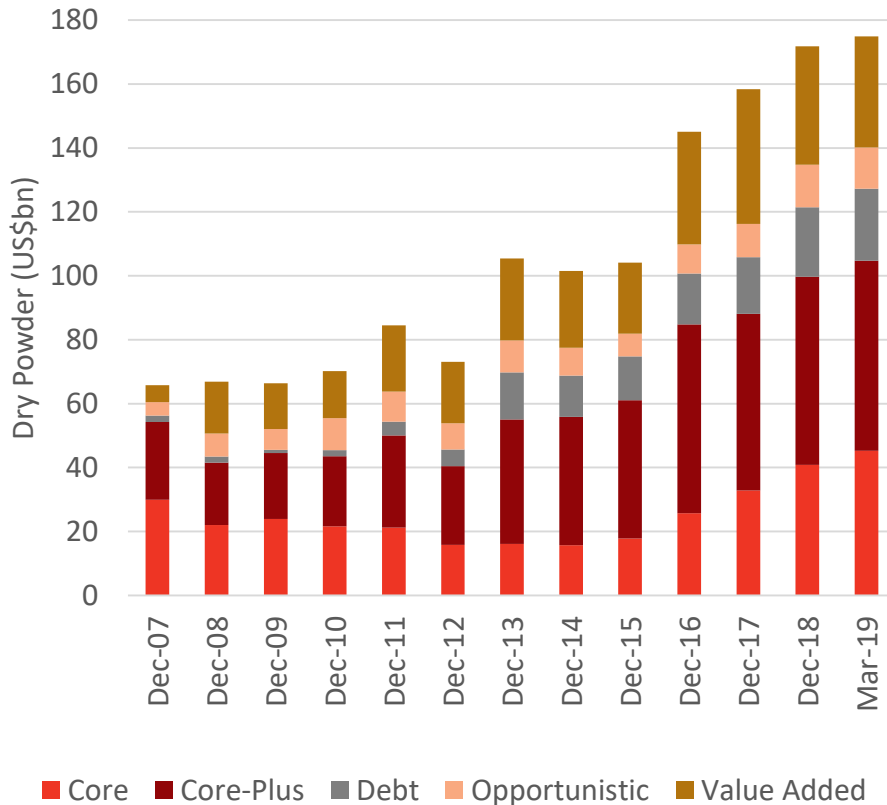
GLOBAL INFRASTRUCTURE DEMAND DYNAMICS

Significant pool of capital looking to invest in global infrastructure... and it continues to grow

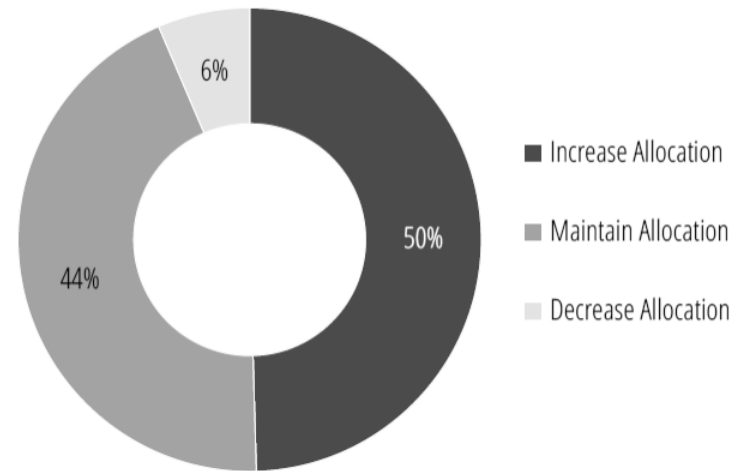
DEMAND: Dry powder continues to grow for unlisted infrastructure

OUTLOOK: Investor allocations to infrastructure are expected to continue to grow

Unlisted Infrastructure Dry Powder by Primary Strategy (2007 – 2019)



Investor intentions for their infrastructure allocations over the longer term (2019)

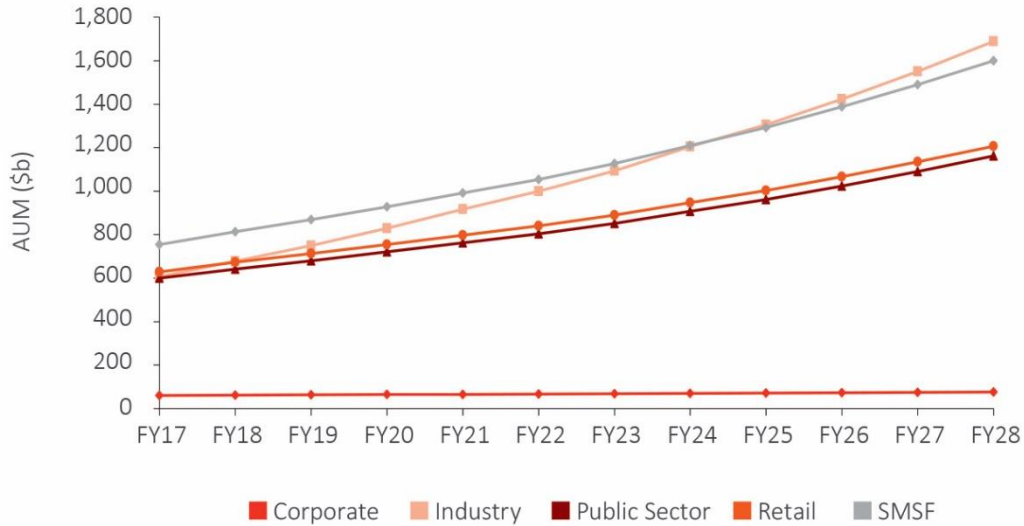


Sources: Preqin

AUSTRALIAN SUPERANNUATION MARKET

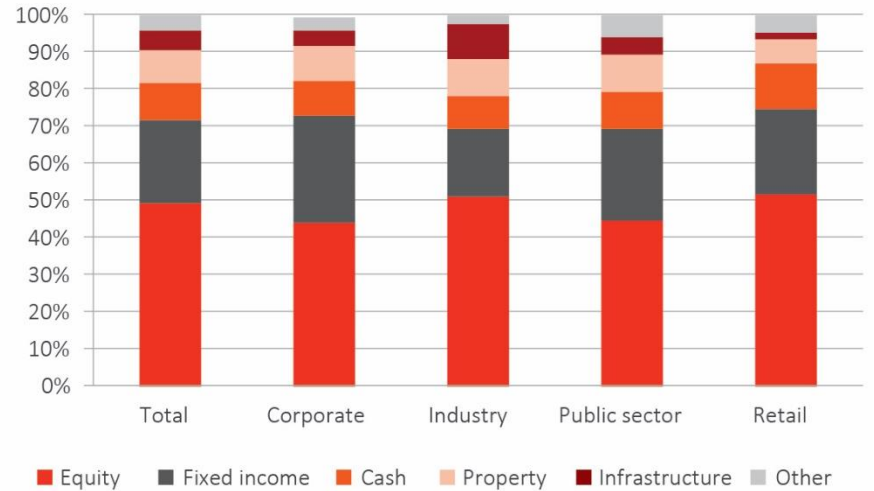
The Australian superannuation market will continue to fuel this trend

Forecast Australian superannuation assets under management (AUM)



Source: KPMG projections

There is scope to increase fund allocations to infrastructure from the current ~4% average



Source: APRA, 2018

Australian superannuation industry growth:



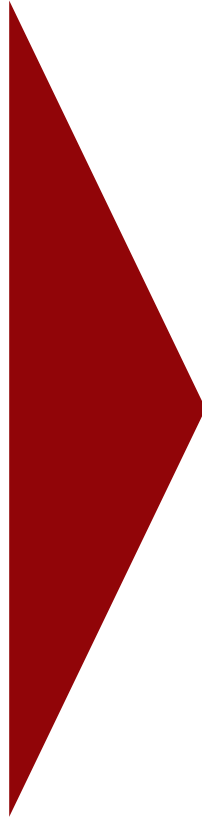
- Over the 10 years from 2008 to 2018, Australian superannuation industry assets increased by 140.3% from A\$1.1 trillion to A\$2.7 trillion
- Average superannuation industry returns:
 - 5 year average return to 2018: 8.3%
 - 10 year average return to 2018: 5.8%

Source: APRA, 2018

INFRASTRUCTURE MEGATRENDS

MEGATRENDS TOUCHING INFRASTRUCTURE

- 1 Decentralization
- 2 Digital & Customer led transformation
- 3 Regulatory & Political Evolution
- 4 Capex Expansion
- 5 Ageing Demographics

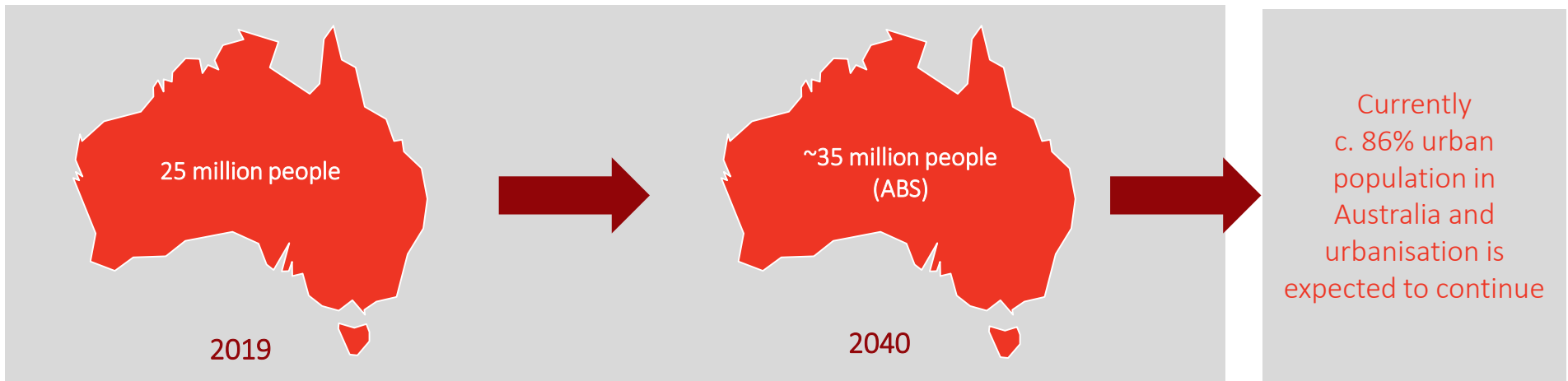


KEY CONSEQUENCES FOR INFRASTRUCTURE

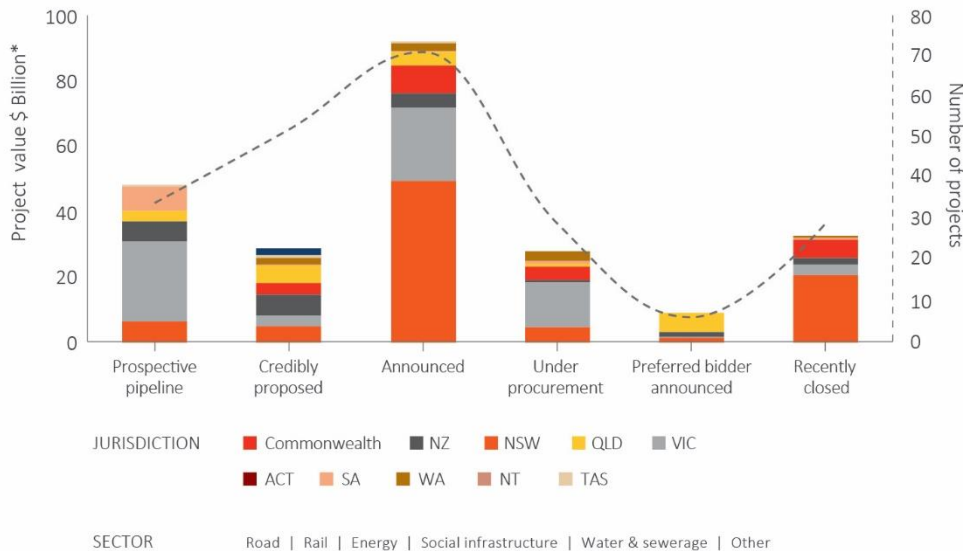
AVs & Ride Sharing	+	EVs	+	Renewables, Energy Storage & Smart Grids
Data Analytics	+	AI	+	Blockchain
Populism	+	Water	+	Electricity
Climate Change	+	Urbanisation	+	OBOR
Deaccumulation	+	Health Care	+	Public Debt

AUSTRALIAN INFRASTRUCTURE: WHAT IS THE CURRENT PLAN?

Strong population growth and increasing urbanisation must be met through a significant pipeline of infrastructure projects

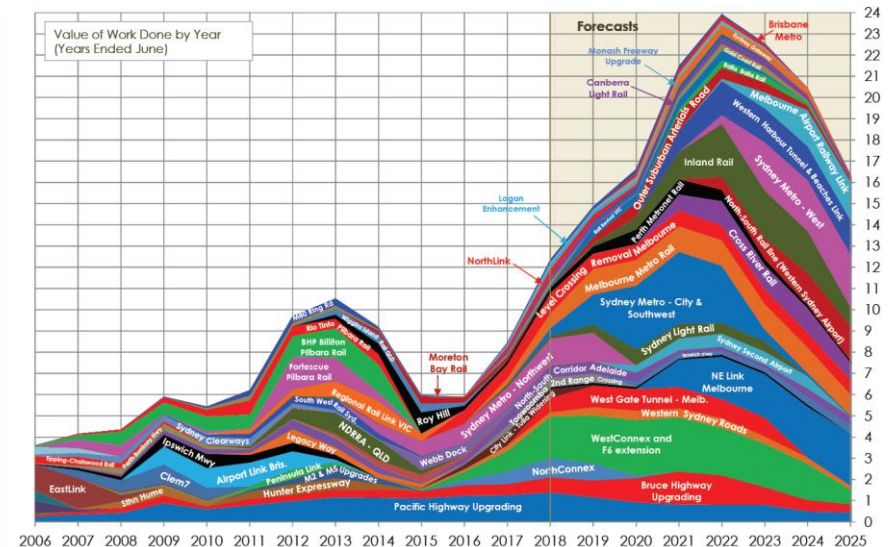


Australian greenfield infrastructure by status (2018)



Source: Infrastructure Partnerships Australia

Australian major transport infrastructure pipeline (\$bn)

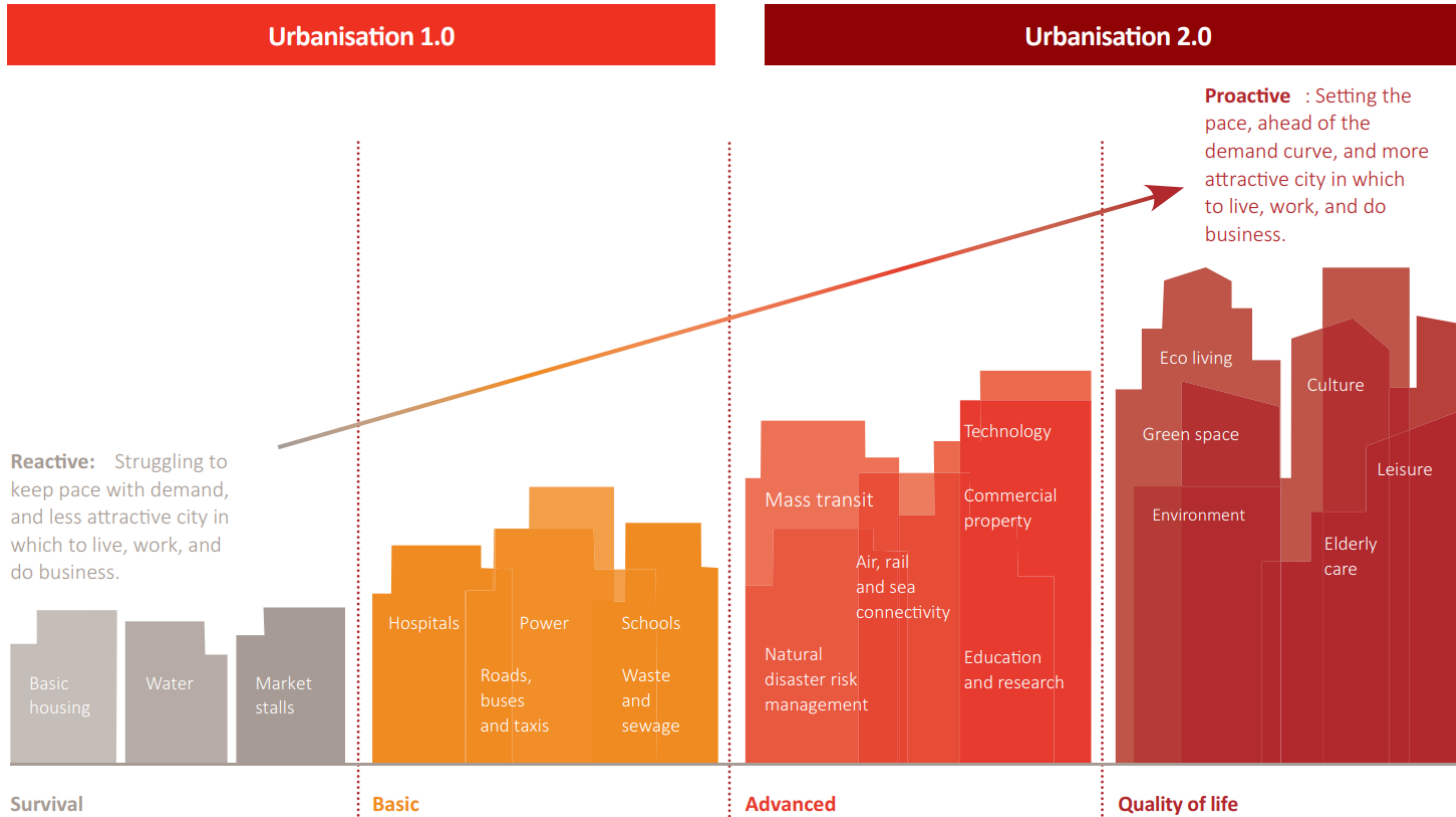


Source: CIMIC, Macromonitor February 2019

THE FOCUS ON QUALITY OF LIFE

Infrastructure must sufficiently address and then move beyond the basic needs of society to focus explicitly on improving quality of life. This is necessary to fully realise the benefits of urbanisation and manage the impacts of population growth.

The building block progression toward Urbanisation 2.0



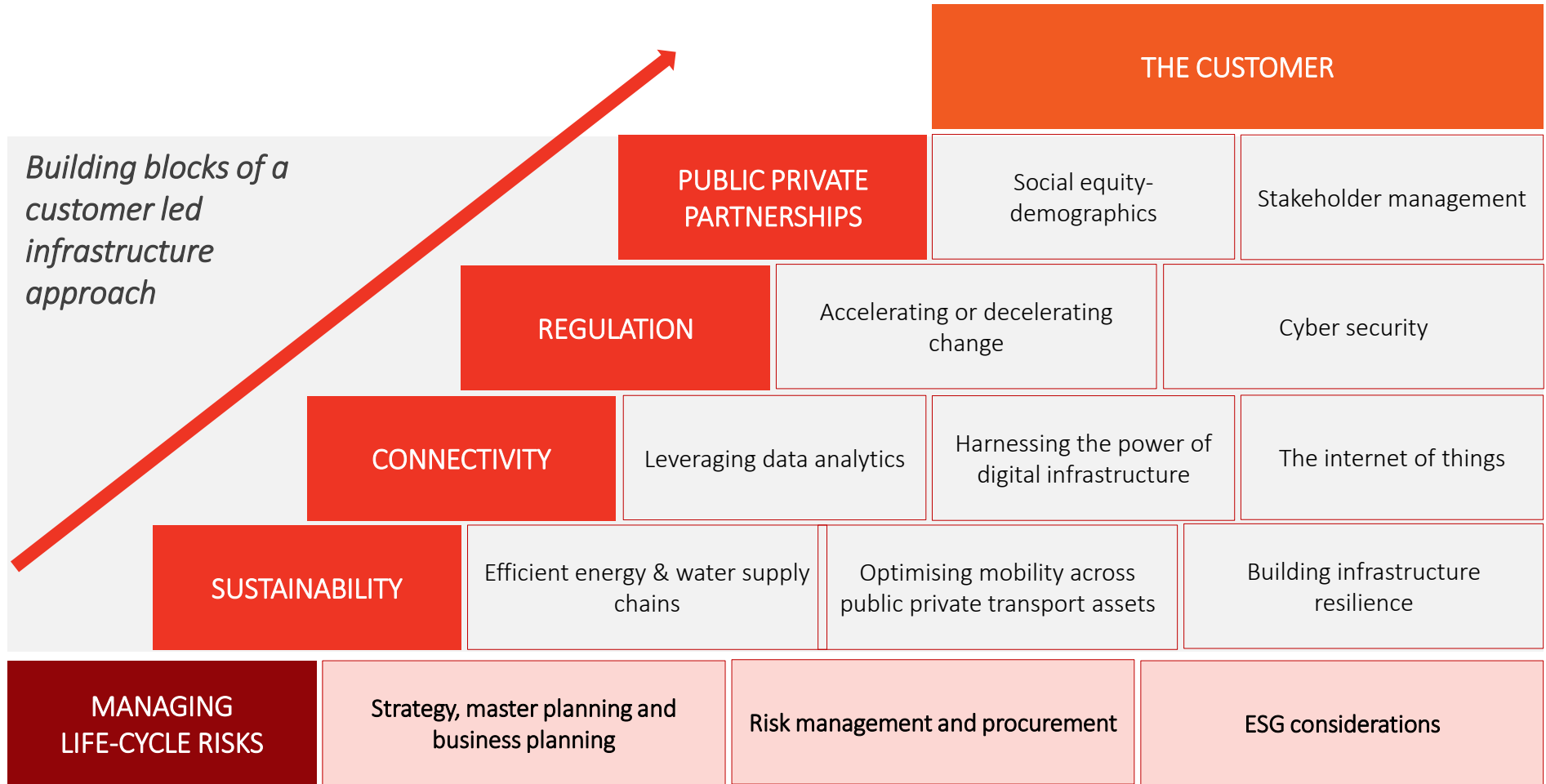
Source: PwC

Countries and cities are increasingly feeling the pressure to **provide the essentials** both in an *efficient* and *cost effective* way, and also with an eye on what the **future** needs may be.

By increasing the attractiveness of cities as destinations, the task of maintaining appropriate levels of **basic infrastructure** becomes **increasingly challenging**.

CREATING PROJECTS THAT DELIVER ON QUALITY OF LIFE: A “CUSTOMER LED” FRAMEWORK

A customer focused approach to infrastructure is key to developing productive projects that improve quality of life

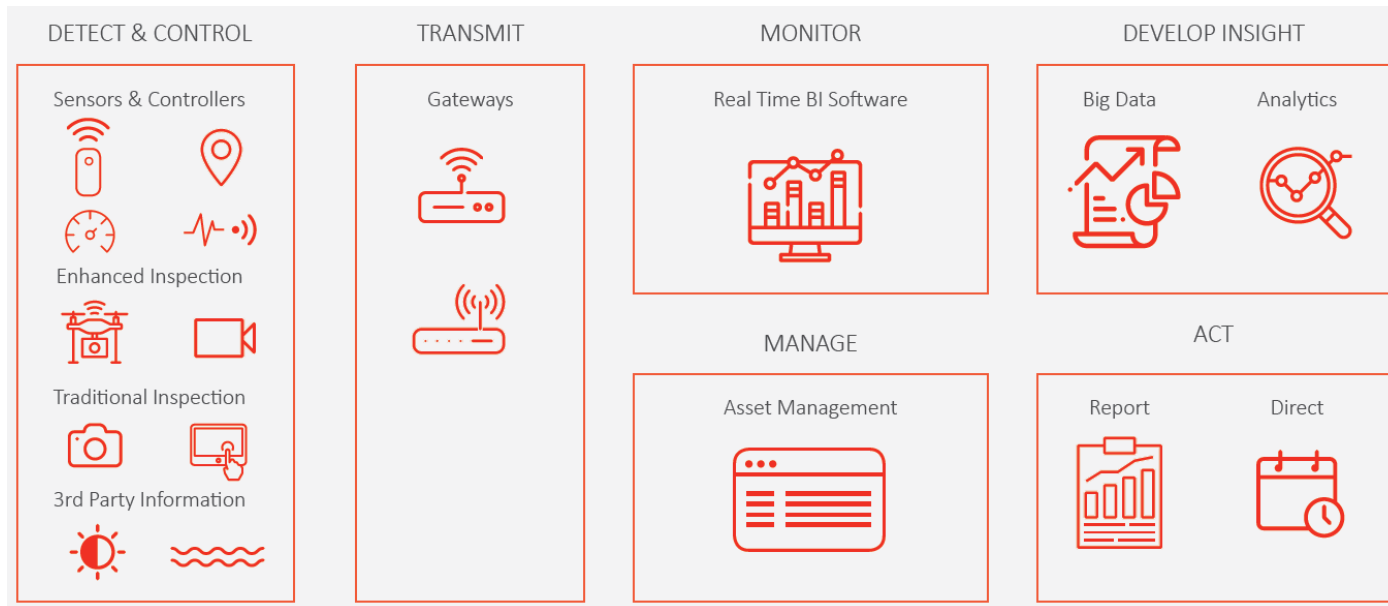


Source: QIC

WE MUST NOT FORGET THE POTENTIAL TO IMPROVE UTILISATION OF EXISTING ASSETS

The internet of things and high speed digital infrastructure (e.g. fibre and 5G rollouts) are enabling more advanced asset management techniques, which can lead to productivity improvements

Infrastructure smart asset management system



Challenges for adoption of frontier technologies



Cybersecurity

Hacking, viruses, loss of data, sabotage



Regulation and policy

Data protection, regulatory response, safety standards



Community, social and environment

Impact on workforce (in particular automation)



Industry alignment

Cooperation may be needed to accelerate uptake / improve



Adoption rates

Which technologies to adopt and when?

Sources: QIC

A FOCUS ON CULTURAL INFRASTRUCTURE

Cultural infrastructure is a key determinant of quality of life in highly urbanised environments

Benefits of cultural infrastructure provision



Examples of cultural infrastructure



PRESENTATION

e.g. live music venues, galleries, museums, Aboriginal Keeping Places, theatres, cinemas



COMMUNITY AND PARTICIPATION

e.g. community venues and centres, Aboriginal Cultural Centres



LIBRARIES AND ARCHIVES

e.g. local libraries



PRACTICE, EDUCATION AND DEVELOPMENT

e.g. tertiary and informal art schools, primary and secondary educational facilities, rehearsal spaces, studios



COMMERCIAL AND ENTERPRISE

e.g. creative retail, co-working spaces



FESTIVAL, EVENT AND PUBLIC

e.g. outdoor event spaces, public art



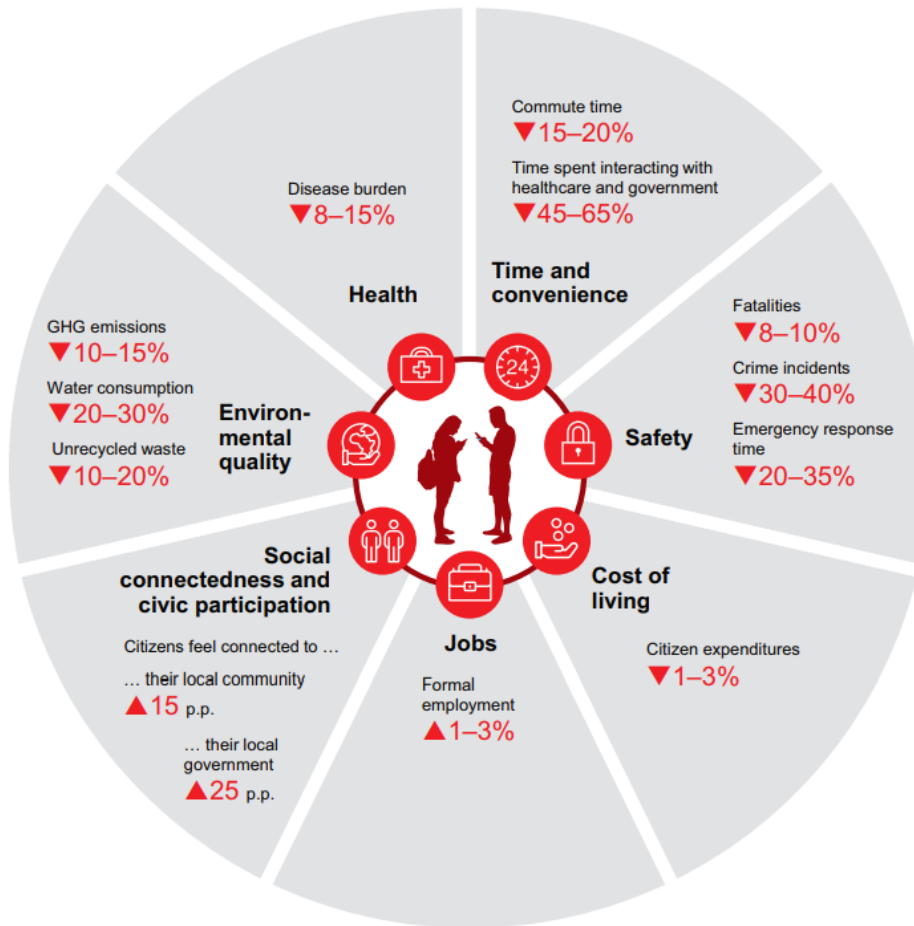
COLLECTIONS

e.g. storage, digitisation

DIGITAL INFRASTRUCTURE WILL ACCELERATE OUTCOMES

Digital infrastructure can deliver significant economic efficiencies but also improve other key quality of life indicators

Digital infrastructure can improve key quality of life indicators



Source: McKinsey Global Institute

CLIMATE CHANGE NECESSITATES GREATER RENEWABLE GENERATION

Investment in renewable energy infrastructure requires stable regulation and energy policy

Likely changes to Australia's climate over the coming century



Global temperature rise to continue



Sea level rise to continue



Oceans around Australia to warm further and acidification will continue



Temperatures will increase, with more hot days and fewer cooler days



Tropical cyclones projected to decrease in number, but increase in intensity



Extreme rainfall events likely to be more intense



Harsher fire weather projected for southern and eastern Australia



Decrease in winter and spring rainfall for southern and continental Australia, with an increase in droughts

Source: CSIRO, Bureau of Meteorology

- Without new investment beyond existing and committed generators, there will be chronic shortfalls in generation starting from 2022, relative to AEMOs Reliability Standard (AEMO, Grattan Institute 2019)
- The Finkel Review estimated that the current **investment risk premium** for energy policy uncertainty is 3%

1

A significant and growing pool of capital is looking to invest in global infrastructure, with Australian investors at the forefront

2

Many megatrends including strong population growth and increasing urbanisation will require significant investment in infrastructure

3

A customer focused approach to infrastructure is key to developing productive projects that improve quality of life

4

Key opportunities to improve quality of life in urbanised environments include:

- Active asset management should be utilised to improve the productivity of existing infrastructure, particularly by leveraging evolving technologies such as 5G and the internet of things
- Cultural infrastructure, digital infrastructure and renewable energy are all priorities as the transition continues

Let's all work together to develop infrastructure that improves the quality of life.

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