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Smart connectivity is the key to Sydney's future
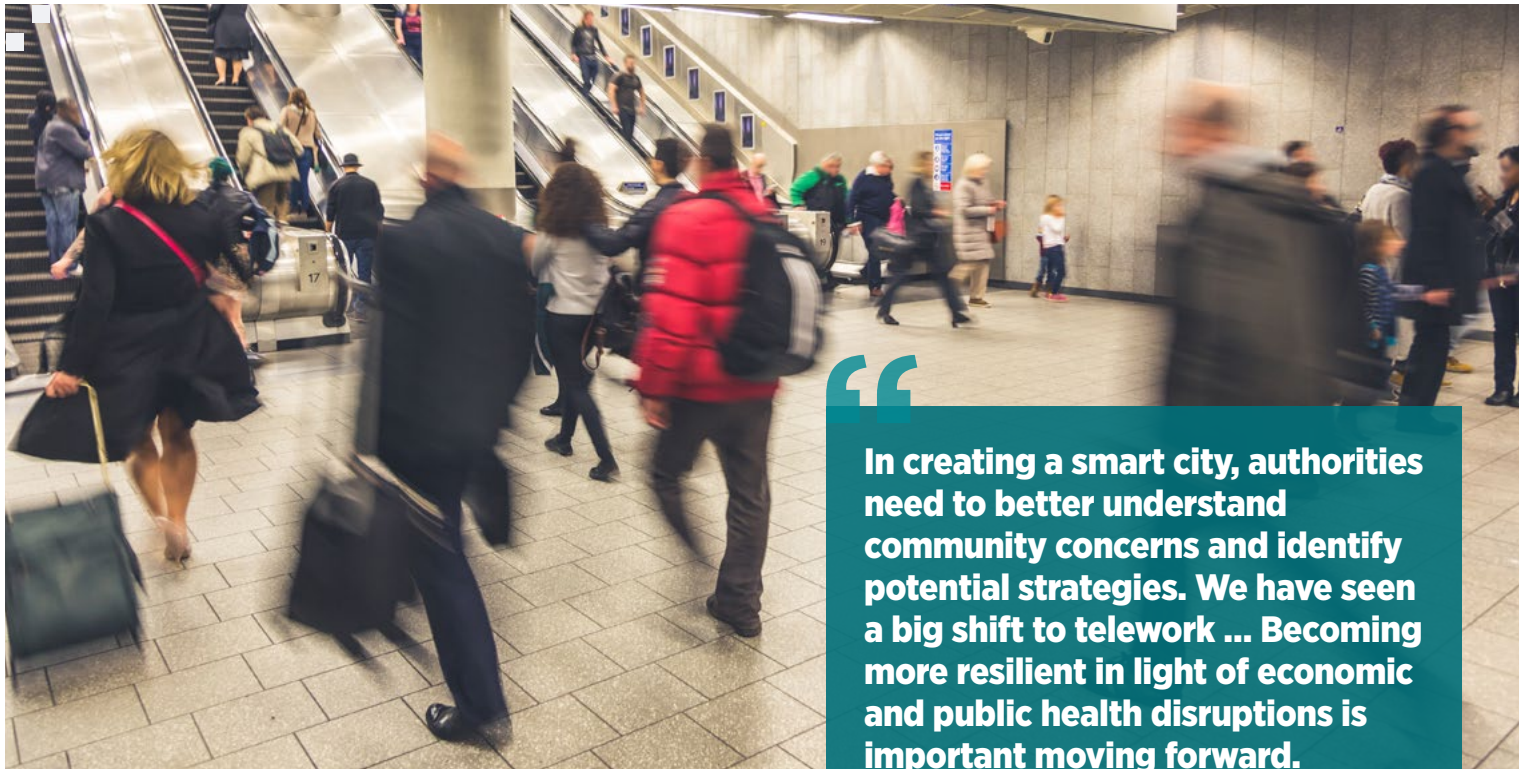
CONNECTIVITY OUTLOOK 2020 — SYDNEY REPORT

As connectivity becomes more important to our daily lives, cities around the world are working to build interoperable networks. These networks are a smart city's backbone, assisting and streamlining day-to-day activities and transactions for citizens, businesses, and government. They also play a critical role in providing real-time information that can be aggregated and analysed to generate insights that support strategic decision-making.

Sydney residents strongly support public investment in smart infrastructure. They want continuous network access across their city, they want 5G wireless and they understand that connectivity can improve their working, social and private lives.

Early in 2020 BAI Communications surveyed rail users in five global cities on their expectations for connectivity, infrastructure, data-driven services, and public transport. The 2020 Connectivity outlook report made two critical findings regarding public network infrastructure: that advanced network infrastructure is the key to a smart city and that connectivity gives citizens control over their time, their work and their wellbeing. The responses showed consistently high support for public and private infrastructure investment.

In response to the COVID-19 pandemic Australian businesses and employees have embraced flexible working arrangements, which are connectivity dependent. People simply must be able to access reliable network connections no matter where they are. Providing secure, consistent, high-quality connectivity has thus become critical for boosting productivity and restoring our economy.

> ❝ **In creating a smart city, authorities need to better understand community concerns and identify potential strategies. We have seen a big shift to telework … Becoming more resilient in light of economic and public health disruptions is important moving forward.**
>
> — Susan Shaheen, Co-Director, Transportation Sustainability Research Center, University of California, Berkeley ❞

City of Sydney: smart infrastructure on the agenda

Sydney is one of the world's great cities. A regional hub of economic and cultural activity blessed with stunning geography and an enviable climate.

Yet in the 21st century those factors are no longer enough to make a city world-class. Connectivity is crucial and Sydney respondents agree: 91% said that a world-class city should have seamless mobile coverage above and below ground.

They also understand that connectivity requires deployment of effective network infrastructure, with 94% supporting government investment into reliable wireless and fibre networks.

However, connectivity isn't seen as solely a government responsibility. Mobile Network Operators (MNOs) are expected to deliver services that meet their customers' evolving needs. Eighty-four per cent said they would think less of a carrier if it could not deliver high-quality mobile signals across all rail networks. Seventy-five per cent said they would consider changing mobile carriers if a competitor had better coverage on rail networks.

Technology and connectivity can deliver rich solutions to key public issues ultimately delivering a better quality of life for citizens.

Examples of smart city applications include real-time traffic management, live public transport service updates, CCTV feeds for crowd monitoring and public safety, facial recognition and biometrics for automated ticketing and other transactions, pre-emptive maintenance, and repair services. For businesses live data feeds can help improve operating efficiency, resource allocation, energy consumption and worker safety.

In Sydney, 96% of respondents believe better connectivity can bring benefits to the provision of services and overall wellbeing. These include improvements to:

① Transport and mobility
② Healthcare services
③ Work life balance
④ City and infrastructure planning
⑤ Access to government services

All these capabilities depend on resilient network coverage, strength and reliability. The report noted that citizens want government agencies and service operators to invest in smart infrastructure so they can remain connected to online services.

Sydneysiders were asked if they would support their city investing in a 5G network:

86%
agreed   5G

Asked whether their city was taking full advantage of the opportunities 5G presents:

61%
agreed

Asked whether their employer is taking full advantage of the opportunities 5G presents:[1]

57%
agreed

1. Filtered to those who are employed.

Data-driven services for all

Data and connectivity can change the way we engage with our cities, making them more accessible and their services more efficient. A smart city's potential is realised when technology and data insights combine to help its citizens, businesses and governing bodies make better-informed decisions.

Collecting, aggregating, and analysing data can deliver insights for a range of services across multiple platforms. Smart infrastructure – including technologies such as 5G, Wi-Fi 6, cloud services and artificial intelligence – is a necessity if these benefits are to be realised.

Across the globe, survey respondents want data-driven services to improve their day-to-day lives. They understand what is required, with a high number of rail users indicating they are comfortable (81%) with their anonymised data being used to improve transport systems. Sydney respondents were similarly clear on their technology priorities:

1. 5G networks and connectivity
2. Systems to inform and assist disabled people with accessibility
3. Tailored and personalised commute information
4. Surveillance systems with facial recognition and behaviour-monitoring for crowds
5. Autonomous vehicles

From transport to artificial intelligence, new data-intensive services can improve public safety, help businesses manage operations and assist government efforts to promote economic recovery.

> " **Enhanced connectivity is part of a package of improvements [that] ... require rapid deployment and flexibility, favouring wireless, rather than wired, connectivity.**
>
> — Dean Bubley, futurist and public transport analyst "

When Sydneysiders were asked to what extent the following were of interest to them:

87%
said 5G networks and connectivity

87%
said systems to inform and assist disabled people with accessibility

87%
said tailored and personalised commute information

78%
said surveillance systems with facial recognition and behaviour-monitoring for crowds

73%
said autonomous vehicles

5G: making a great city greater

5G's increased capacity and peak download speeds will support specialised, data-intensive applications and the ever-growing number of devices that will simultaneously access the network.

The report found that connectivity gives citizens control over their time, their work and their wellbeing.

Locally, Sydneysiders expect 5G networks to have a positive impact on their ability to access business and government services; access entertainment services; stay connected with friends and family and access business and educational content online.

With remote offices and mobile work arrangements now more prevalent than ever, it's not surprising that seven in ten (69%) respondents believe the deployment of 5G will have a positive impact on their careers.

Looking specifically at transport, 86% of Sydney respondents think they would benefit from an evolved rail network with connectivity, data and AI which provides them with better services.

Sydney respondents' priorities demonstrate they have a clear grasp of of the personal and wider benefits 5G technology brings. Their priority rankings for various transit solutions enabled by 5G are:

① Up to date, live information via their mobile device on rail delays or better connections for their trip.
② Sensors and displays which immediately inform staff of issues, faults, accidents, or overcrowding.
③ Safety measures, such as personalised trip planning, that reduces time spent standing alone at stations.
④ Connected sensors that organise coordinated emergency services and inform drivers of medical incidents.
⑤ Network-enabled sensors in systems and tunnels to plan and deploy pre-emptive maintenance teams.

Yet only 61% of Sydney respondents believe their city is taking full advantage of the opportunity it represents. That may explain why 86% support government investment in a 5G network.

5G's potential to make our city safer, cleaner, and more efficient is clear. So too is Sydneysiders' desire for investments in the infrastructure that will meet the requirements of data-intensive IoT devices and related cloud services.

Investing in the future: 5G, smart infrastructure and data-driven services

Public authorities now have a unique opportunity to build 'smart' infrastructure. Connected, personalised, data-driven services are the key to creating smart cities (and in a public transport context, 'stations of the future').

The COVID-19 pandemic has made rebuilding trust in public safety a precondition for economic recovery. Whether working from home or considering when and how to resume work in offices, factories and shops, services and businesses will require continuous connectivity and the smart infrastructure that delivers it.

New technologies such as 5G will provide the capacity to deploy new services to safeguard the public. They will also provide the bandwidth for businesses to discover and develop new business models and market opportunities. There's never been a more important time for government and MNOs alike to invest in the smart network infrastructure, including 5G, which can support smart city devices and applications.

This infrastructure will help cities provide enhanced services, new business opportunities, better government and economic growth.

To download the *2020 Connectivity outlook* report, click here.

This is the second benchmarking report on communications infrastructure in public transport conducted by BAI Communications. Read the 2019 findings here.

To learn more visit **baicommunications.com**

Sydneysiders were asked what they thought 5G networks would impact positively:

73%
said access business and government services online

72%
said access entertainment services online

71%
said stay connected with friends and family

68%
said access business and educational content online

> **Technology and better Wi-Fi connectivity and mobile reception ... would allow me to keep myself occupied by browsing the net, chatting to friends and family, doing work online etc.**
>
> — Sydney survey respondent

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