



What is a Smart City?

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In essence, a smart city is a place where data and information are used to enhance the quality of life for residents, workers and visitors.

Typically, in smart cities there is a recognition of an underlying opportunity or problem, and data and information are utilised to design and implement solutions to the underlying challenge.

For example, many cities around the world are experiencing rapid population growth, and with it increasing demand for housing, transport, healthcare, education, public space, and a range of other infrastructure and services.

Concurrently, traditional urban design, service delivery and transport models are being challenged by the increase in demand for 24/7 and always-on goods and services, and rapid escalation of peak demand.

Designing and delivering infrastructure and services to meet forecast peak demand is both costly and inefficient. In the energy utilities field for example, the rapid growth in localised solar power generation has changed the fundamental demands on the trunk network to the point of breaking the underlying operating models.

In manufacturing (or Industry 4.0) – a sector that has been deploying new technologies since the Industrial Revolution in the late 1900's, and is widely recognised as a leading sector for adoption of new technology – scaled change is proving challenging, with McKinsey reporting that more than 70% of manufacturers surveyed in June 2020 reported being 'stuck in pilot purgatory'.

In government services, the adoption of smart cities has been patchy. To date, much of the focus

for smart cities has been on experimentation and small-scale deployment of Internet of Things (IoT). In Australia there is a growing recognition that the first phase of experimentation and 'living labs' across government departments and agencies is coming to an end. The next chapter needs to be designed and delivered with a clear purpose in mind that reflects the underlying demographic and economic circumstances of the Country, and it must provide real and measurable public value.

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For government agencies that own, manage, and/or carry out regulatory activities relating to land supply and the functions of places, e.g. parks and public spaces, smart city technologies can be transformative. However, the real benefits will only be realised when there is greater collaboration between government agencies, and between government and private industry to deliver enhancements and efficiencies.

If we reflect on the definition of a smart city in this article, and focus on population growth and urbanisation as an opportunity/challenge for local government, a number of points emerge. Here are five that can be easily and quickly mobilised:

1. Telecommunications services have become even more important through the global Coronavirus pandemic. The underlying infrastructure and services should be considered

by government agencies as being part of the essential suite of public services in much the same way as roads, streetlights and schools are, and they should co-invest with private industry to enhance local services.

- Public assets and spaces should be designed to maximise the benefits of data gathering without being intrusive. Projects like Sidewalk Labs do not need to define the smart cities future, but understanding whether public assets are in the right location, and provide the levels of amenity that people reasonably expect is critical to accommodating rapid urbanisation. Comparing asset usage and performance across locations, time, seasons and weather conditions is essential to the efficient planning, funding and delivery of good public assets and spaces. Advanced analytics tools like digital twins, coupled with locality-based tools like QR codes can rapidly accelerate design and performance enhancements.

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- Designing-in the capacity to accommodate smart technologies is essential. For example, design codes within land-use Planning frameworks should maximise opportunities for private investment in smart assets, and government-owned assets should be designed to allow for re-purposing as demands change. Smart assets should become the norm, and there needs to be a proper discussion on the future role of streetlights and other ubiquitous assets.
- IoT will be a central part of our collective futures. Whether via mobile phones, fixed sensors or other means, the collection and use of data needs to be managed in a pragmatic way that enhances quality of life, without being intrusive

or putting people at risk. Subscription-based participation models will help the evolution of data collection and use, without compromising people's right to privacy and security.

- IoT will only add true public value when delivered at scale, and with cooperation across government agencies. Quality of life in cities cuts across all government departments, and it is rare, if even possible, to have an experience in a city without encountering multiple agencies – for example, just think how many council departments you cut across if you park your car in a council car park, cross the street to a beachside cafe, have lunch, and then spend an hour walking along the beachside parklands before returning home.



So, what does this mean for Australian smart cities? Australia offers a very high quality of life in so many respects. However, as seen the world over, population growth and urbanisation can present a challenge for land supply, housing affordability, longer travel times, economic performance, and a range of quality of life factors.

A true smart city is a place where data and information are used to minimise the negative impacts of urbanisation, and maximise quality of life. A pragmatic and collaborative approach to data collection and usage to support the planning, design and management of public services, assets and spaces is critical to Australian cities' continued status as safe and desirable places to live.

To realise their true potential, Australian (smart) cities must start adopting designs and standards for smart assets and smart places in collaboration with each other and with the technology sector.