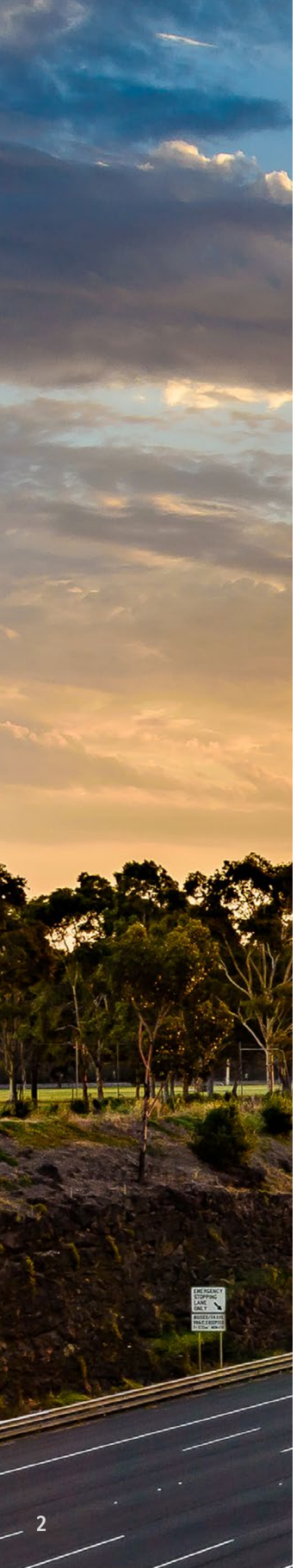
technologyone

DIGITAL TRANSFORMATION

THE KEY TO A SMART CITY

Transforming Local Government services through digitisation



Foreword

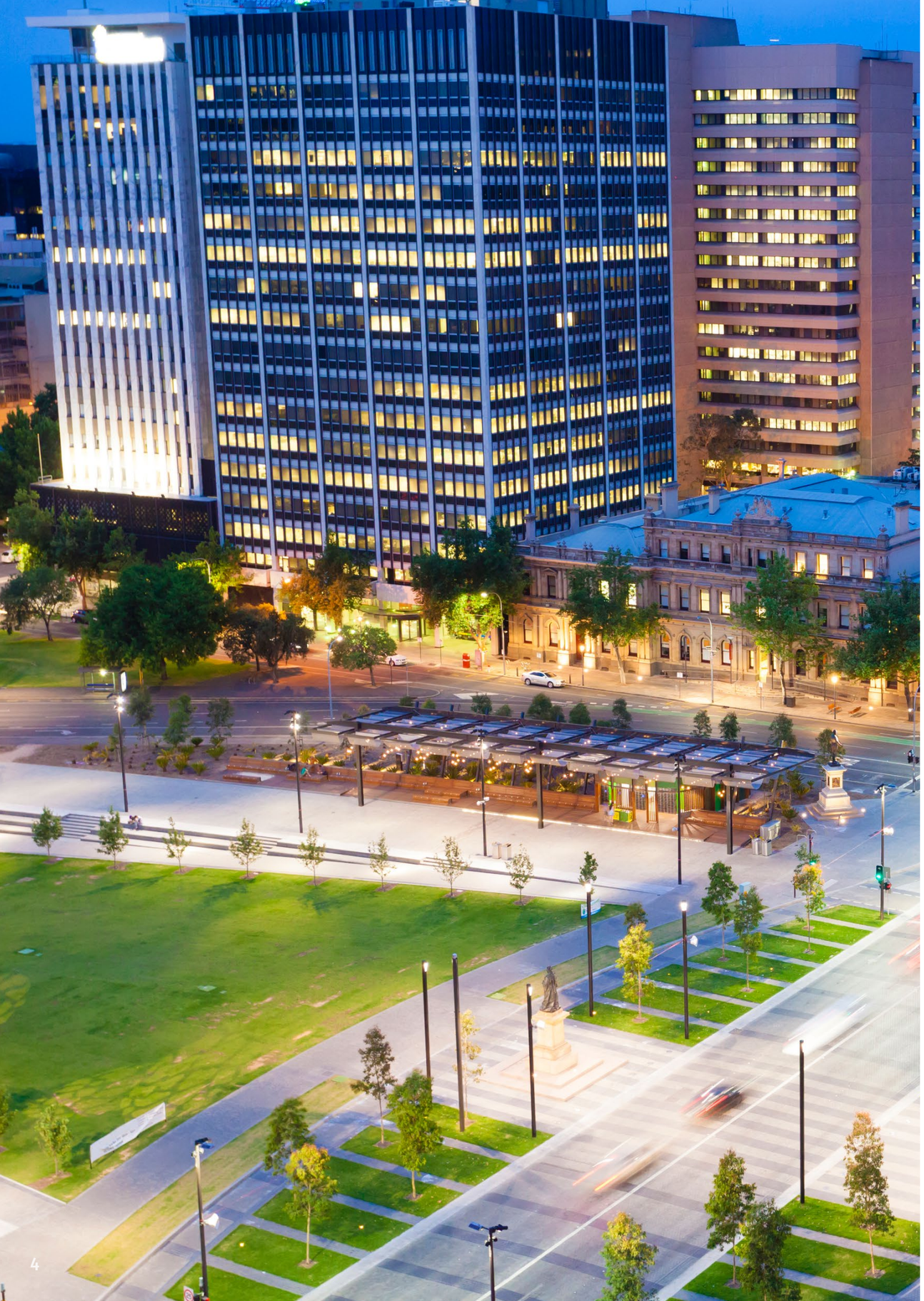
Technology advances have always shaped our society; from the development of tools in the Stone Age through to the Industrial Revolution. Since the dawn of the 20th century, the pace of development has increased substantially and delivered us an ever-evolving landscape. Some innovations disrupt industries, whereas others forever change the way we live and interact.

As we move into a time where everyday devices become internet-enabled, a time where faster and more reliable internet access facilitates a more connected and integrated environment, customer expectation has changed and we are on the cusp of a massive societal shift. The cities of the future will no longer be a series of disconnected, heterogenous parts, but become virtual living entities that are capable of change and response to existing and pre-empted conditions.

The frameworks and technologies to enable this massive change are already here. So too is the opportunity for Local Government to determine its place within this emerging world and to lay plans that cement its position.

We've developed this eBook to give readers the information they need to devise effective strategies for realising smart future goals. Our deep understanding of the Local Government sector comes from working closely with more than 300 councils across Australia and New Zealand, so we understand only too well the challenges faced by these complex organisations and what it takes to lay the right foundation for the future.

If your council has 'smart' aspirations, you're sure to find the following information invaluable.



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The changing world in which we live

It's hard to believe that just over a decade ago virtually no one owned a smartphone. In January 2007, Apple unveiled the first-generation iPhone and announced it would be commercially available later in the year. It was unlike any phone or personal digital assistant (PDA) on the market and no one was sure what to make of it. Apple's competitors were quick to suggest it was too expensive and unlikely to capture any significant market share. Industry analysts said the public would never accept a virtual keyboard and the product would come and go within three months. With the benefit of hindsight, we now know those forecasts were somewhat off the mark.

> "The catchphrase 'there's an app for that' has quickly become an everyday expression and there is a general expectation that communication via the internet should be simple, fast and consistent."

Today, there are over 2.3 billion smartphone users world-wide, with that number expected to increase to almost 2.9 billion in the next two years[1]. That means nearly 40% of the world's total population will be using a smartphone by 2020 — that's a pretty significant penetration rate for a product that didn't exist fifteen years ago.

In Australia that figure more than doubles with a staggering 88% of Australians now owning a smartphone[2], growth largely being driven by older generations.

Mobile connectivity has continued to advance in parallel, with the nascent 5G network set to deliver a huge upswing in data rates and reliability. Current 4G networks and bigger data packages for Australians are enabling an environment of constant consumption, everywhere, at any time.

These developments have driven a substantial change in consumer behaviour. The catchphrase 'there's an app for that' has quickly become an everyday expression and there is a general expectation that communication via the internet should be simple, fast and consistent.

We live in an increasingly connected world and the next step in the connectivity evolution is the emerging Internet of Things (IoT). IoT embeds internet capability into everyday items to enable collection and communication of data. Combining connected devices with automation systems will make it possible to gather information, analyse it and create an action based on that analysis. It is the basis on which Smart Cities and communities will be built, and will ultimately redefine the future of how we live, work and interact.

Smart Cities – utopian and unique

The long-term vision for Smart Cities has an almost utopian slant; the use of autonomous vehicles will spell the end of private car ownership and subsequently free up land for the public to enjoy; energy sources will be completely renewable and deliver a cleaner environment; cities will be safer thanks to more comprehensive surveillance and security systems.

The overall promise is an enhanced urban experience, courtesy of technology that connects infrastructure and objects with systems that can streamline the delivery of services and provide lifestyle improvements for a city's (or community's) inhabitants.

Under this vision, cities will become virtual living entities — capable of change and actions based on present and predicted conditions — rather than a series of disconnected buildings, infrastructure, services and citizens.

The path to a fully realised smart environment is an evolutionary one, with many stages between the world in which we currently live and the envisaged idyll of the future. It is likely that no two Smart Cities or Communities will be identical, as the political, social, geographic and demographic drivers of each will differ.

There will also be inherent imbalance within a city or community itself, as different areas will have diverse demand levels for specific initiatives, such as traffic monitoring. Variances aside, all Smart Cities will be built on the efficient and effective gathering, analysis and subsequent use of data to facilitate improvements in quality of life.

Now that the broader technological blueprint for a Smart City is generally defined and accepted, much of the current narrative has turned to the social, sustainability, policy and other governance implications these advances will bring. A common caution is to ensure the focus remains firmly on delivery of service when developing smart plans, as schemes that aid Government from an administrative perspective alone may not necessarily improve residents' lives.

In the race to be at the forefront, some Local Governments are using flawed logic and assumptions to build smart environments, with the landscape increasingly littered with examples of how not to do it. Songdo City in South Korea is one such instance.

Songdo was purpose-built on 1,500 hectares of reclaimed marshland around 20 minutes from South Korea's main airport and one hour from its capital Seoul. The aim was to showcase innovation in urban planning and to create a commercial hub that would attract residents. However, failure to keep residents front-of-mind and undertake vital community engagement means that two years out from completion, resident numbers are down by half and commuter numbers less than a third of those expected.

This highlights the issues in designing from the top down using a 'if you build it, they will come' approach and emphasises the need to ensure that residents remain the key consideration for any smart schemes.

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Collaboration the key to unlocking Smart Cities

The success of a Smart City scheme depends on the input and consideration of many parties. Korea's Songdo project highlights the issues when plans for a high-tech ideal fail to consider people, but the participation of cross-industry entities can also shift the focus and subsequently impact on the ability to effectively realise the original aims of a project.

There are many actors in the development of Smart Cities – incorporating Government (at all levels), technology vendors, educational institutes, commercial investors and the citizens themselves. A collaborative environment is essential when formulating a Smart City strategy, but so too is a clear understanding of which player should ultimately benefit.

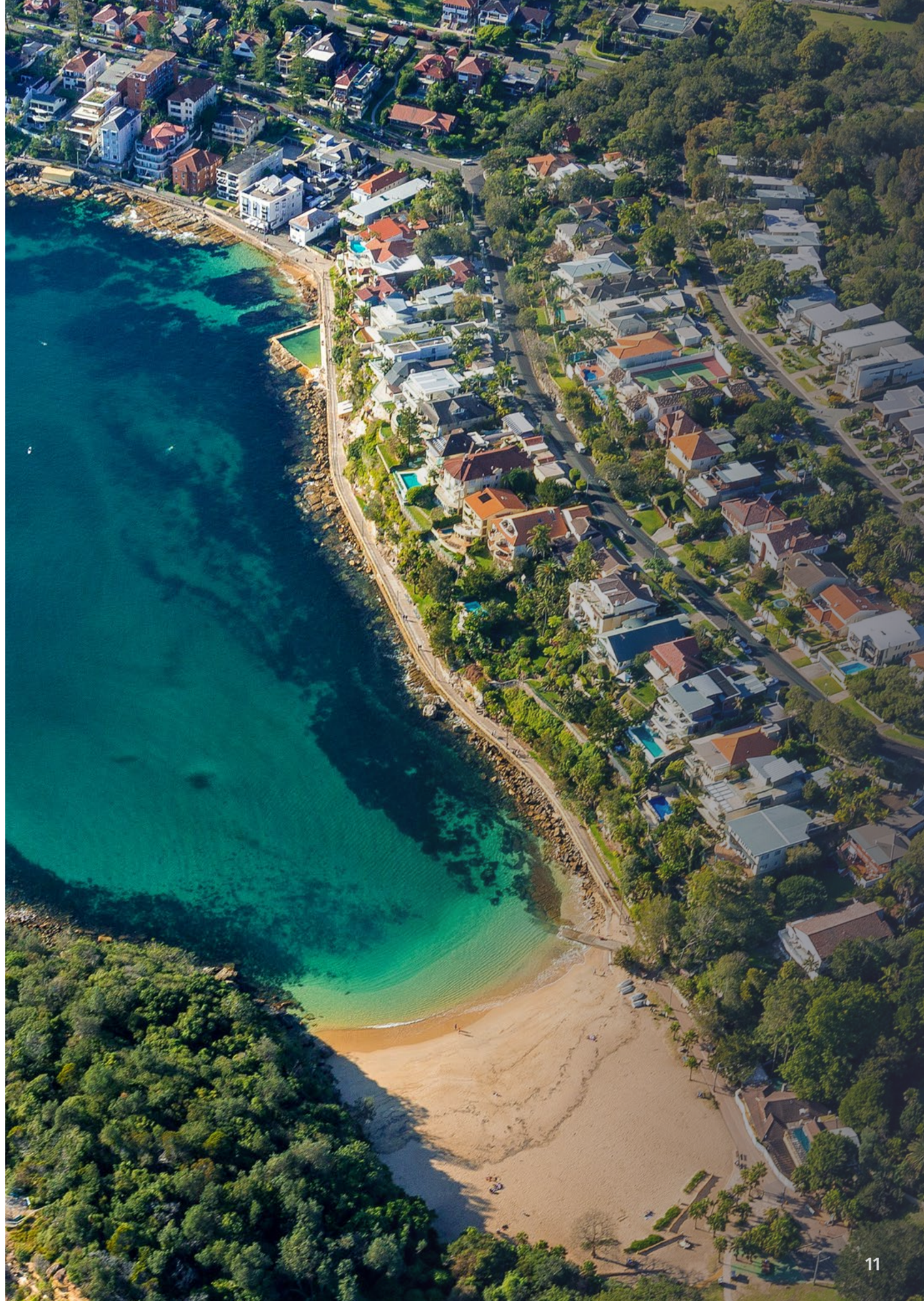
Schemes that concentrate on gaining efficiencies at the Government level will not necessarily succeed if there is no discernible benefit to the overall population. Similarly, a vendor-driven plan devised to showcase new or emerging technology will suffer if it lacks relevance to the community expected to employ it.

> "The most successful implementations of Smart City or Smart Community plans will be those that understand the implications of multiple parties' participation and have been designed around provision of services that meet the needs of today's (and tomorrow's) digital citizens."

Investment in technologies designed to enable Smart Cities is on the rise. According to the International Data Corporation (IDC), it will hit US$80 billion[3] this year. IDC says the evolution from "a collection of discrete flagship projects to a sizeable market opportunity" is driving investment and predicts that, as Smart City initiatives gain traction, that figure will increase to $135 billion by 2021.

The market will continue to draw entrants and a range of new technological developments will follow. Smart councils will remain focused on core competencies — the delivery of better outcomes for residents and ratepayers through improved efficiencies and ease of doing business — rather than on the technology itself.

Some Australian Local Governments are already doing just that and benefiting from additional funding through the Australian Government's Smart Cities and Suburbs Program[4], which is supporting the delivery of innovative Australian Smart City projects that improve the liveability, productivity and sustainability of cities and towns across the country.



‘Smart’ plans rely on digital transformation

Councils are complex organisations, providing manifold services that require interaction with a broad range of community members. With that complexity comes a large technology footprint and a range of disparate systems, which are used — to varying degrees of success — to meet the needs of the public and of the council itself.

Over the years, many Local Governments will have invested heavily in hardware and software — often a multitude of disparate systems and standalone applications — as well as dedicated in-house IT resources, pouring funds into infrastructure and solutions designed to streamline processes and workflows.

This scenario has probably served the needs of the internal environment and the wider community, so it is common to find an attitude of ‘if it ain’t broke, don’t fix it’, when it comes to making future plans.

This raises a crucial point, and one that many Local Government entities fail to recognise; a Smart City or Smart Community plan is a multi-year endeavour which is also an exercise in evolution. Today’s actions will have a marked influence on the eventual success — or failure — of any potential smart initiatives.

> “To realise ‘Smart Community’ ambitions, the underlying technology and architecture must be open and enabling. As a result, the journey must start with digital transformation and a SaaS-enabled environment.”

Running an assortment of standalone applications brings immediate challenges. It often means working with several vendors, as each application incorporates its own technology and database, and requires specific skill sets (either deployed in-house or outsourced) to implement system modifications or improvements. Councils will also need those systems to talk to one another, most commonly achieved by creating an elaborate integration layer, usually with significant cost overhead.

In trying to simplify the system, this approach effectively adds a layer of complexity that requires additional resources to manage. Even when pilot tests appear outwardly successful, it can be difficult to replicate that success when scaling to a real-world scenario. To realise ’Smart Community’ ambitions, the underlying technology and architecture must be open and enabling. As a result, the journey starts with digital transformation and a SaaS-enabled environment.

Smart councils realise this, appreciating that by simplifying their IT layer, they can remove the need for dedicated in-house resources, reduce capital expenditure and be free to focus on business outcomes.

> “Today’s actions will have a marked influence on the eventual success — or failure — of any potential smart initiatives.”

IoT Smart City and smart infrastructure:

Opening the door to tomorrow's transformative technologies

Planning for the future is inherently uncertain, more so when it involves trying to factor in new and emerging technologies. The relatively sudden rise of mobile computing is testament to the speed at which change occurs.

While we can't pre-empt tomorrow's transformative technologies with any degree of certainty, critical decisions made in the early stages of Local Government's digital transformation process can lay a better foundation on which to build and streamline the employment of new technologies when they are developed.

Smart Cities and Communities will increasingly rely on the transfer, collection and analysis of data. That data will be drawn from multiple sources and require an effective and efficient means of inter-communication if it is to deliver any value.

As everyday devices become smart-enabled, the IoT expands and Telstra has begun deploying Narrowband IoT (NB-IoT) technology to meet that additional demand. This technology accelerates IoT in Australia by providing opportunity to connect millions of new devices that send small volumes of data at very low power levels over the telco's mobile network. NB-IoT coverage is now offered in all major Australian cities and many regional centres, augmenting the previously established three million square kilometres of Cat M1 IoT coverage, which was turned on in 2017. With more than two million IoT devices currently connected, Telstra is forecasting huge uptake post-NB-IoT implementation, with four times as many devices projected for connection over the next five years.

The incipient 5G mobile network will deliver greater capacity, faster mobile data speeds and support connection of more devices with higher levels of reliability and lower latency. Telstra promises a seismic shift in connectivity — taking us from a world that connects people to one another and the internet, to a world of ultra-fast mobile speeds and IoT on a mass scale. This framework offered by NB-IoT and 5G is poised to support the Smart City designs of councils across Australia, with trial sites and innovation hubs launching in regional centres, as well as major cities.

To take advantage of the opportunities these initiatives provide, councils need to embark on their digital transformation journey with a keen eye on what the future holds. Employing an open-protocol architecture enterprise system will allow smart Local Government to take advantage of new technologies as they appear, without any need for complex re-engineering, paving the way to a smarter future.

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How to truly digitise Local Government services

If digital transformation is the key to 'smart' ambitions, identifying the right technology partner to unlock and enable digital transformation is crucial.

According to the Government Digital Maturity Index (DMI)[5] - 90 per cent of Australian and New Zealand Local Government Authorities agree digital is the future for Government and the provision of Government services, yet only 20 per cent believe their council to be doing enough to transition to a digital environment. The reality is very few councils have achieved a high degree of maturity around digital transformation.

As the November 2017 DMI Report states, the main reasons are threefold: 1. Council's resistance to change (19%), 2. Limited technical capability and infrastructure (17%) and, 3. A lack of leadership or strategy (14%).

To address these challenges and accelerate the pace of digital transformation, choosing to work with a partner who understands the technical nuances and distinctions of Government is critical. Equally is identifying a technology partner who understands the unique geographical aspects of Australia and New Zealand, as well as the distinctive characteristics, behaviours and preferences of our early-adopter, tech-saturated population.

OneCouncil – your critical path to Smart City enablement

A vital component of Smart City enablement is the delivery of excellent online access to Government services, as well as a high level of citizen participation. The only way a council can digitise its services is through the implementation of a mission-critical core application that is essentially the integration point for the practicable application of Smart Cities technologies. TechnologyOne's OneCouncil solution is that application.

Developed for Local Government, working with Local Government, OneCouncil enables Local Government Authorities (LGAs) to reduce costs, improve customer service and streamline processes through end-to-end management of council operations, future-proofing your council's infrastructure.

At TechnologyOne, we believe that at the core of truly digitised Government services there must be a 24/7 cloud-enabled, Software-as-a-Service (SaaS) application. Our software is the industry's only true, comprehensive enterprise SaaS solution built specifically for Local Government. It moves technical complexity and the need for infrastructure away from council into the cloud. By working with TechnologyOne, LGAs are able to focus on strategic leadership, business outcomes and change-management to accelerate and empower their digital transformation.

Smart Cities doing it well around the world

While some Smart City plans are doomed to fail, others stand out because they present a clarity of vision, realistic and achievable ambitions and a compelling view of the future.

Hong Kong

Hong Kong has long been recognised as one of Asia's premier business hubs, ranking 5th (out of 190) on the World Bank Ease of Business[6] listing for 2018.

Keen to solidify that reputation, Hong Kong's Smart City Blueprint[7] aims to establish the city as a breeding ground for innovation and development. The plan outlines goals across six major areas; mobility, living, environment, people, government and economy, with detailed strategies and initiatives for each mapped out over the next five years and beyond.

Hong Kong recognises the people-centric nature of a Smart City, with initiatives designed around delivering visible benefit to both residents and visitors. Aside from some of the more universal Smart City components, including intelligent transport, traffic management systems and waste reduction, Hong Kong has developed a range of strategies that put people first.

Like many developed cities, Hong Kong has an aging population. By 2096, it's expected that more than 31 per cent of residents will be aged over 65, so plans today reflect that projected change. Support for healthcare and ease of access for e-services and e-transactions will be facilitated through implementation of a Big Data Analytics Platform and development of a single eID for use across government and commercial services. Healthcare will be bolstered by a smart hospital approach that incorporates health record sharing and the development of a Patient Portal, enabling patients to actively manage their health via a secure, privacy protected facility.

At the other end of the spectrum, Hong Kong will nurture young talent and foster innovation and entrepreneurship through a focus on STEM learning, financial and non-financial support and incubation programs. This people-first focus positions Hong Kong as an attractive global innovation centre.

> "Hong Kong recognises the people-centric nature of a smart city, with initiatives designed around delivering visible benefit to both residents and visitors."

Launceston

A little closer to home, City of Launceston's Greater Launceston Transformation Project[8] is primed to put this regional Tasmanian city at the forefront of Australia's Smart City development. The project is a collaboration between Local, State and Federal Government, along with the University of Tasmania and Telstra. It also received an Australian Smart City Federal Grant under the first round of the Australian Government's Smart Cities and Suburbs Program.

Launceston is focused on positioning the city as a liveable and innovative regional centre, meaning its strategies and initiatives align with that vision and aim to deliver jobs and skills growth; business, industry and population growth; a vibrant, liveable city; and innovation and industry engagement.

The Greater Launceston Transformation Project will use the latest connective technology and new 3D virtual city modelling tools to transform city planning processes, deliver better educational outcomes and develop a community co-designed innovation hub.

The Project will deliver multi-faceted benefits including a revitalised university precinct that builds participation, research and development, as well as the Launceston hub of the National Institute for Forest Products Innovation. It will also support cooperation across councils to improve service delivery through smart technology – testimony that 'Smart' plans rely on an effective digital transformation strategy.

> "The Greater Launceston Transformation Project will use the latest connective technology and new 3D virtual city modelling tools to transform city planning processes, deliver better educational outcomes and develop a community co-designed innovation hub."

By focusing on the needs of the community, City of Launceston is able to develop an overriding vision and clearly conceive the range of strategies and initiatives required to meet that objective. Telstra's involvement in the project will see the city become a primary test site for the emerging 5G network, as well as full access to a Local Telstra NB-IoT network, allowing it to meet the aim of being a 'fully connected, tech-ready centre which is open and ready for business'.

Take the next step

Learn more about planning for a smarter future at:

Technologyonecorp.com/local-government

To have a conversation about your Smart City or Community plans, get in touch with our industry experts.

SmartCities@TechnologyOneCorp.com

References

1	Page 4:	Statistica: Number of Smartphone Users Worldwide 2014 – 2020
2	Page 4:	Deloitte 2017 Mobile Consumer Survey, The Australian Cut
3	Page 10:	Investments in Technologies Enabling Smart Cities Initiatives Are Forecast to Reach $80 Billion in 2018, According to a New IDC Spending Guide
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5	Page 10:	Government Maturity Index reported by Government News
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About TechnologyOne

TechnologyOne is Australia's largest enterprise software company, with offices across six countries. We create solutions that transform business and make life simple for our customers. We do this by providing powerful, deeply integrated enterprise software that is incredibly easy to use. Over 1000 leading corporations, government departments and statutory authorities are powered by our software.

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