

'Smart' isn't about doing new things - it's about doing things better.

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In this, the second of our thinkpieces, we explore how councils can create real value through smart city investments.

Councils exist to provide government for a local area. The various legislation that governs local councils across the Western world typically establishes democratic accountability, revenue raising powers and statutory functions relating, but not limited, to public health, waste management, transport, and land-use.

The rise of the Smart City agenda in local government creates many opportunities to enhance delivery of these core functions, as well as discretionary objectives such as economic development. However, the power and accessibility of new and emerging technologies creates the risk of focussing on doing new things rather than using technology to deliver greater public value and improve peoples' daily lives by improving existing functions and services.

- Successful delivery at scale will free up resources for experimentation and innovation -

A quick scan of the smart city projects in Australia in the past five years shows a great deal of innovative thinking. Professionals across the spectrum of services have been looking for ways to use technology to, among other things, reduce resource consumption, provide early warning of weather events, and to reduce pollution.

However, the good ideas have yet to be converted into cross-sector solutions that can be adopted at scale and therefore make a real difference. Let's take the Internet of Things (IoT) as an example. Nearly every IoT project in Australian local government has been a trial, an experiment,

or an innovation, and many of them are doing something new. In most cases projects result in a dashboard, or visualisation to tell us something we apparently didn't know. To date, very few (if any) of these innovations (new things) have improved a system or process, i.e., created real public value.

One of the reasons for this is the challenge of making a business case stack up for IoT. Once devices have been purchased and installed, network connectivity is paid for, and software to collate and report on the data is purchased, it is common for the costs to outweigh the benefits. This has led to an over-reliance on grant funding for experimental projects (doing something new), rather than core council funding to drive enhancements (doing things better).

However, most IoT vendors offer significant discounts for volume purchase of devices, network capacity can be spread across large numbers of connections, and the licensed software can crunch through the data from many devices without increasing in cost. The other side of the equation is the intent of the IoT project. In many cases it is driven by a desire to learn about the technology and what it can do, as opposed to being designed and delivered to realise a benefit – again doing something new as opposed to doing something better.

In June 2021, Gartner forecast the global number of connected IoT devices by the end of 2021 to reach 25 billion. McKinsey Global Institute reports that 127 new IoT devices are connected every second, with potential economic value of between \$4trillion and \$11trillion by 2025, with a CAGR of between 7% and 15%. McKinsey also forecasts that by the end of 2022 100% of the global population will have access to LPWAN coverage.

These facts and figures point to IoT being a significant part of our future. However, various global reports show that government is one of the slowest adopters of IoT, with only a small percentage moving beyond the pilot phase to full implementation - doing new things, rather than doing things better.

Let's look at an example - the collection of environmental data. Numerous councils have deployed sensors, connecting over (largely LoRaWAN) networks and publishing data for public viewing. Each one collecting and reporting a small sample in a localised context. In many cases this 'new' data and its publication is seen as an end in itself. Scaling of the new service is limited because it has limited, localised value, and is not embedded into an existing need or service offering, and therefore does not have core funding for scale deployment.

What if all this data were brought together to better understand the heat island effects of urban development? Before and after analysis of temperatures, shade effects, breezes and other data from across Australia can be combined with local contextual data (high rise, medium density, open space, tree locations, etc) to establish a pool of 'big data'. The big data would be of great value to urban designers, property professionals, universities and land-use planners to design and create better places – a core function of councils.

The combined purchase of devices and back-end software by council collaborators would create scale, which would bring down the unit cost of deployment and improve their underpinning business case(s). It would also drive increased network coverage through increased demand.

The scale production, configuration and installation of IoT devices creates jobs. The use of the data by various professional disciplines creates jobs. The innovators and entrepreneurs that use the data to build new tools create jobs. The public value is easy to see in heat island mitigation, public infrastructure cost and performance improvements and other measurable outcomes – doing something better.

Most council operations (democratic accountability, revenue raising powers and statutory functions relating, but not limited, to public health, waste management, transport, and land-use) have experienced some form of new (smart city)

technology pilot or trial somewhere in Australia. The next phase of the smart city journey needs to focus on the business cases to support scale deployment, for the realisation of measurable and real public value. This would establish smart city investments into core services and core funding.

- the use of the data by various professional disciplines creates jobs -

The best way to make the business cases work, and to derive the benefits from smart city technology is for councils to work together to enhance existing services at scale. In other words, to do things better. Successful delivery at scale will free up resources for experimentation and innovation – doing something new.

Good quality services, easily available and useful information, efficient financial management and overall accountability are basic expectations of ratepayers. Smart city technology can help realise these expectations and create real public value as well as opportunities for economic development. However, improving core services and creating public value should not be compromised by a focus on doing new things, just because technology makes it possible. Create value through doing things better, don't just do new things.