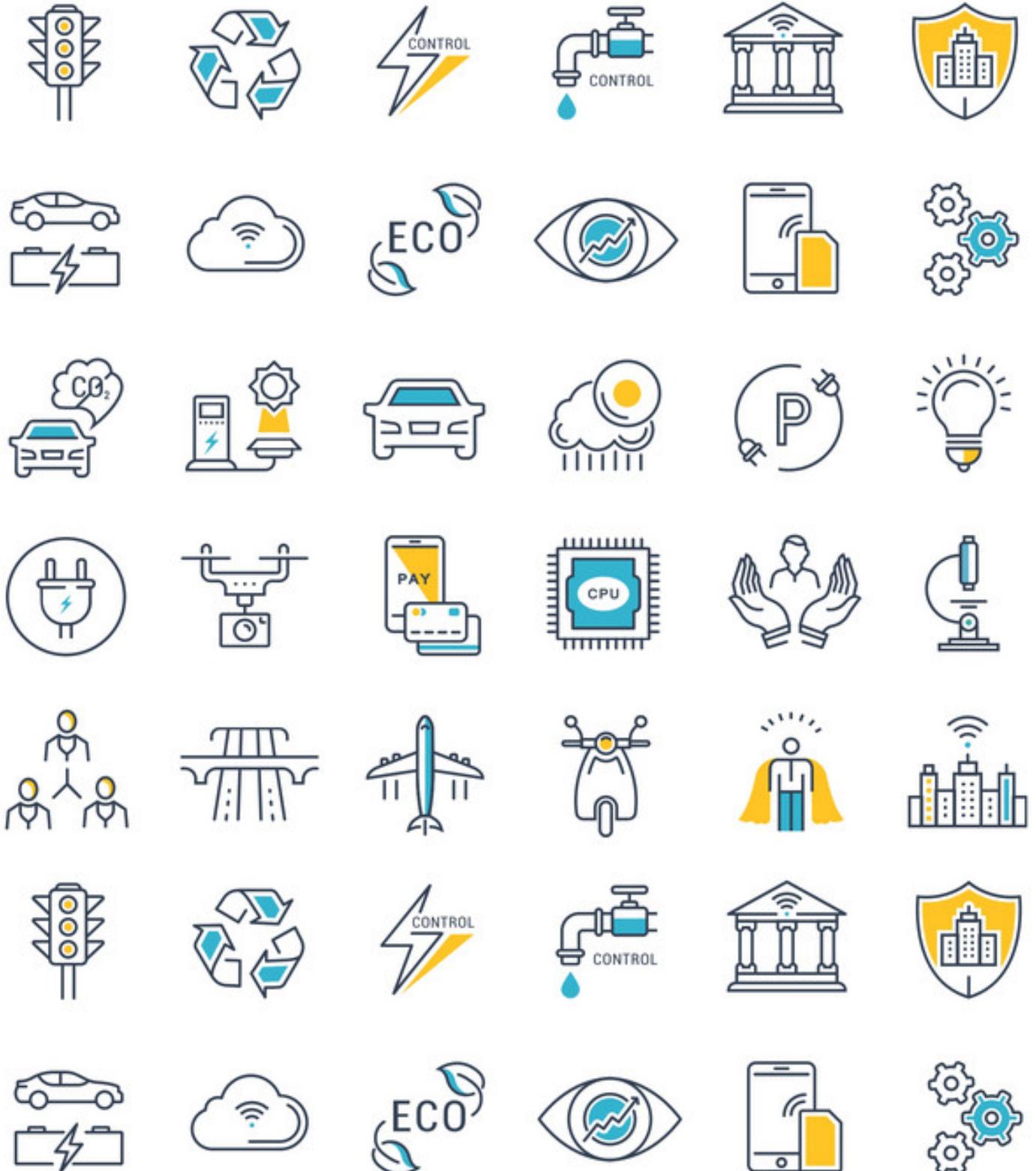


THE BIGGEST OPPORTUNITY FACING LOCAL GOVERNMENT IN 5 YEARS?

# SMART TECH.



**Emerging Leaders Program Group Assignment 2018**

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**Smart Tech  
Final Version  
December 2018**

This document has been produced through the Emerging Leaders Program developed by Local Government Professionals in association with The University of South Australia.

We would like to acknowledge and thank LGITSA, council staff, CEO's and industry stakeholders who responded to online and in depth surveys.

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# Contents

## 01

### INTRODUCTION

Executive Summary.....	05
Understanding this report.....	07
Purpose.....	07
Introduction.....	07
Methodology.....	09

## 02

### RESULTS

Summary of results.....	11
Tables and graphs.....	12

## 03

### DISCUSSION AND SUMMARY

Discussion.....	16
Summary & recommendations.....	18

## 04

### REFERENCES AND APPENDIX

References.....	20
Appendix 1: Survey Monkey questions.....	22
Appendix 2: In Depth Interviews.....	23
Appendix 3: KMPG In-Depth Interview Learning Summaries.....	24
Appendix 4: Implementation plan.....	25



# Executive Summary

This report answers the question, what is the biggest opportunity facing Local Government in the next five years? This report aims to:

- Provide a 5 year road-map for how Local Government can position itself to provide the greatest benefit to rate payers in the implementation of smart technology;
- Identify opportunities to facilitate smart technology;
- Respond to the changing diverse needs of the community;
- Describe priorities and recommendations in the future implementation of smart technology across the state.

The report provides a summary of where South Australian councils are currently positioned in the provision of smart technology including approaches in service delivery and operations.

Discussion, insights and recommendations regarding different strategies being applied were developed through survey and in depth telephone interview results.

While the findings of this project were in line with previous reports, this document furthers the understanding of smart technology in a Local Government setting and provides guidance for furthering our understanding and implementation of smart technology.

The recommendations from this report aims to deliver a unified and collaborative approach to the implementation of smart technology in a Local Government setting.

In order to efficiently enable the delivery of smart technology it is recommended that a Steering Committee be set up to assist in the development of strategies and other key enablers such as:

- Prepare a cost benefit analysis toolkit
- Review a ‘shared service’ approach for procurement of smart technology
- Provide assistance to councils in the preparation of policies/strategies and applying for funding;
- Incorporate a specific tailored program for regional councils given lack of resources and small populations.
- To establish a “Smart Lab” network to encourage business and community participation in the use of common spaces such as smart labs, and shared events plus training sessions are fundamental to engage different stakeholders .

***“What matters is creating fun, surprising places where people want to live, work and be healthy”***

(Source Smart Cities Council, 2013).

01

# Introduction and methodology



## **This report answers the question: *what is the biggest opportunity facing Local Government over the next 5 years?* The report has been prepared through research undertaken via the Emerging Leaders Program run by LG Professionals.**

### **Understanding this report**

This report has been broken up into three sections.

The first section provides an introduction, including information on the context of smart technology as well as the methodology undertaken.

Part two takes an in-depth look at the survey results and focused conversations with key groups/ professions in the smart technology space.

Part three provides discussion on the findings and recommendations.

### **Purpose**

The purpose of this report is to examine how the South Australian Local Government Sector is currently positioning itself to adopt and apply smart technology applications, and whether current approaches, strategies and trials are effective.

The objective of the review is to highlight current best practice and develop recommendations on how councils could maximise uptake of smart technology and ensure benefits are delivered to both council and rate payers over the next 5 years.

Recommendations made in the report will also assist in informing initiatives of external agencies such as community groups, private individuals, government agencies and the business sector who play a pivotal role in the future of smart technology.

This report aims to:

- Provide a 5 year road-map for how Local Government can position itself to provide the greatest benefit to rate payers in the implementation of smart technology;
- Identify opportunities to facilitate smart technology;
- Respond to the changing, diverse needs of the community;
- Describe priorities and recommendations in the future implementation of smart technology across the state.

### **Introduction**

South Australian councils face a number of challenges over the next five years such as: rate capping; continued traffic congestion; rising utility and waste levy costs; in-fill and subsequent loss of green open space; climate change; environmental degradation; water scarcity and isolation of rural communities (Department of Planning Transport and Infrastructure, 2017). To tackle such challenges across the sector, it's clear that smarter ways need to be developed whilst providing better customer service (University of Adelaide, 2018).

One approach that has potential to assist councils become 'smarter' is adoption of smart technology applications.

It is important to note, the use of the terminology of 'smart technology' in this report over 'smart cities' is intentional and deliberate. Although meaning essentially the same thing as 'smart cities' (which can be defined as "applications that adopt 'Information and Communications Technology' (ICT) in order to enhance liveability, workability and sustainability of a community (Smart Cities Council, 2013). 'Smart technology' doesn't infer it is location based, i.e. can only be applied in a city.

Smart technology applications collect information through sensors, other devices and systems. It then communicates that data using wired or wireless networks. Lastly, it "crunches" (or analyses) the data to understand what is happening now and what's likely to happen next.

South Australian councils need to plan carefully to make the most of new opportunities available through smart technology (NCES National Construction Equipment Conference, 2018). A well-designed smart technology project should aim to improve the liveability, productivity and sustainability of cities and towns.

According to the Department of the Prime Minister and Cabinet (2018), smart technology also provides opportunities such as: economic transition and diversification; job efficiency, workforce up skilling and improved networks; reduce the demand on centralised housing around cities and providing access connectivity

# Intro continued

to job opportunities; uplift of green open spaces; improve availability and attraction of human capital.

Although smart technology may have many attractive perks, it also brings challenges that local governments need to identify in order to resolve.

Some smart technology applications may result in poor communication where compatibility issues emerge when different systems are used, which impair efficiency and increase costs for the long term. Furthermore a customer-centric approach needs to be taken when assessing every smart system, to determine whether it offers real value to local residents, businesses or government and addresses specified needs.

Lastly smart technology applications are built for the future, not just for today. Each system needs to be future-proof as much as possible, to ensure it has a high chance of remaining relevant in the years to come and that costly

replacements won't be required (Smart Cities Council, 2017).

Data has commercial value as well as public value. With more and better quality data about who's doing what, there is scope for new business models where the value that can be extracted from that data is monetised. As data custodians, SA councils have considerable data-analytics potential in their hands, which they must balance with public imperatives such as equity and privacy (Australian Centre for Smart Cities, 2018; KMPG, 2017; Smart Cities Council, 2017).

Good quality data about service provision also gives local governments the information they need to price those services in new ways, capture value, and enter performance-based contracts where suppliers can share in efficiency gains and the benefits of innovation.

## THE THREE CORE FUNCTIONS OF A SMART CITY

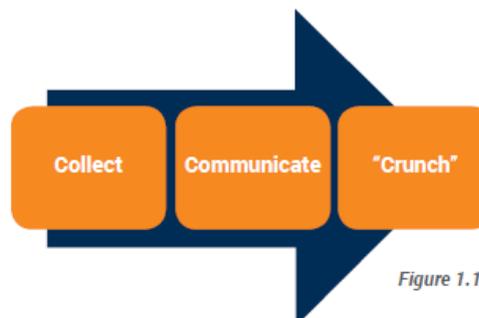


Figure 1.1

- 1 **Collect**  
*information about current conditions across all responsibility areas (power, water, traffic, weather, buildings, etc.).*
- 2 **Communicate**  
*information, sometimes to other devices, sometimes to a control center and sometimes to servers running powerful software.*
- 3 **Crunch**  
*data, analyzing it to present information, to perfect (optimize) operations and to predict what might happen next.*

**Figure 1.** The Three core functions of a smart city: collecting, communicating and “crunching” (Smart Cities Council, 2017).

# Methodology

To examine how smart technology can be the biggest opportunity for Local Government over the next 5 years, the methodology was based around 5 phases, described below.

## **Phase 1: Research**

The first phase of the project involved high level research into smart technology applications. Research involved (but was not limited to):

- Web-based research (e.g. Google searches finding credible information on the topic, TED talks, YouTube, academic literature);
- Discussion with key internal staff at the team members relevant council with the aim of investigating key issues/opportunities;
- Review of relevant council strategies relating to smart technology (e.g. Digital Strategies); and
- Review of Local Government Association / State Government reports/strategies.

## **Phase 2: Engagement**

Phase 2 of the project moved into targeted engagement of key identified stakeholders. Based on phase 1, questions were developed to inform two separate surveys. Survey one targeted the Local Government IT Network (LGITSA) and Chief Executive Officers (CEOs).

Key details for the survey were as follows:

- Identification and collation of key stakeholder contact details for distribution of the survey.
- The surveys were web based (e.g. Survey Monkey).
- The surveys were distributed and available to complete for a period of four weeks.

Electronic survey questions can be seen in Appendix 1.

## **Phase 3: Analysis**

Phase 3 involved analysis of all information collated by the group. This phase commenced during phase 2 as soon as survey data becomes available. Phase 3 included:

- Collating information from surveys and analysing it; Describing any trends and summarise results;
- Benchmarking analysis comparing SA Local Governments; and where they sit within a national and international context.

## **Phase 4: Targeted meetings**

Phase 4 involved in depth interviews of best practice organisations to seek out key recommendations for councils that are less advanced in this space. Questions can be viewed in Appendix 2.

## **Phase 5: Recommendations**

Phase 5 involved the production of this report which discussed the survey and in-depth findings and highlighted opportunities for the South Australian local government sector.

## **Phase 6: Presentation**

Based on feedback from fellow Local Government Professional emerging leaders a final report was submitted and presented to Local Government CEO's and relevant stakeholders in December 2018.

02

# Results



# Results

## Survey of CEO and LGITSA

An electronic survey was undertaken in mid 2018 targeting Chief Executive Officers of all 68 South Australian councils and the “Local Government Information Technology South Australia” Group (LGITSA).

A total of 39 responses were received from 31 individual councils made up of 11 metropolitan and 20 rural councils (representing a 48% response rate).

The survey asked up to nine questions focusing on smart technology strategy and initiatives, where detailed results are outlined in Appendix 1. A summary of key findings included:

- 61 % of councils have developed or are developing a smart technology strategy while only six of these councils have a smart technology strategy in place.
- Five metropolitan councils have a current smart technology strategy while only the Rural City of Murray Bridge has a current strategy and six other rural councils are developing strategies.
- 83% of current strategies align to either a federal, state or local government strategy with 90% of smart technology strategies in development also aligning.
- 21 councils have either undertaken or propose to undertake a smart technology initiative. The survey identified a range of initiatives that have or are planned to be undertaken throughout South Australia by councils as detailed in Table 1 below.

**Table 1:** Smart technology initiatives planned or underway across South Australian councils

Smart Technology Stream	Initiatives
Assets	Street lighting, carparks, sewage, asset monitoring and utilisation
Digital Citizen	Digital transactions, applications, interactive way-finding, weather
Education	Science, technology, engineering and mathematics (STEM) programs
Energy	Solar power
Mobility	Digital device support, network establishment
Networks	High speed Internet (Gigabit and NBN), public Wi-Fi, IOT networks
Transport	Electric vehicle charging stations, driverless vehicles

Sixty percent of initiatives are or will be resourced through non dedicated existing council staff and resources or collaborative approaches with the public and private sectors.

The biggest inhibitors for both metropolitan and rural councils in undertaking smart cities initiatives are:

- Return on investment
- Lack of strategy
- Current funding

The survey provided further insights into a lack of clear vision, competing business priorities and minimal regional support for initiatives supporting the lack of strategy approach.

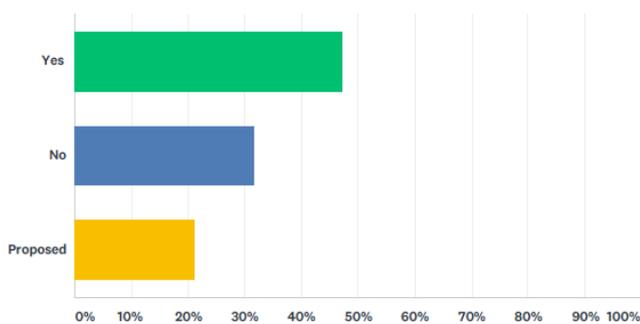
Metropolitan and rural councils had consistent key drivers of:

- Economic development
- Improving customer experiences
- Environmental and sustainability outcomes
- Gain efficiencies

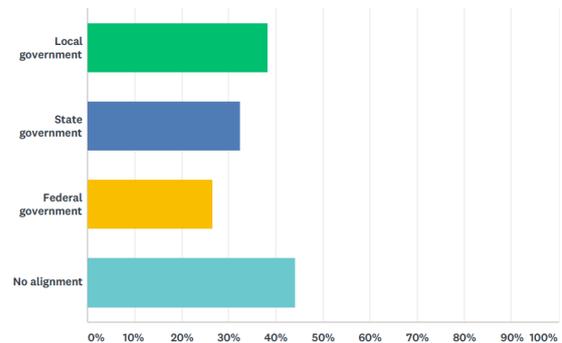
Councils suggested that consideration of metropolitan and rural approaches separately could lead to improved outcomes including creation of overarching strategies and funding strategies for smaller councils. It was identified that new technologies could be seen as distractions rather than delivering an outcome for the community.

**Results highlights:**

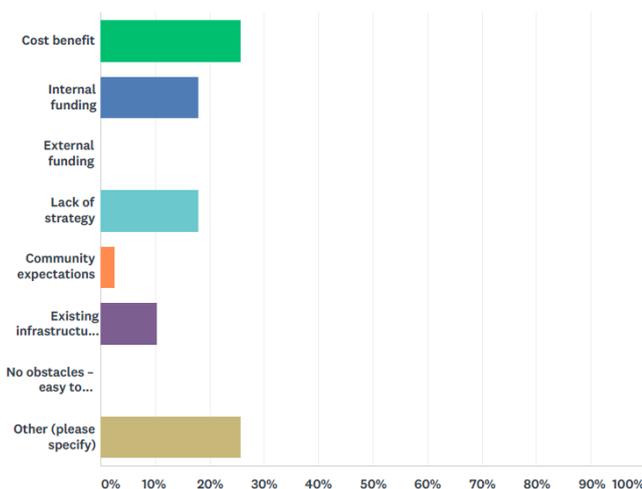
*Has your organisation undertaken a smart technology initiative?*



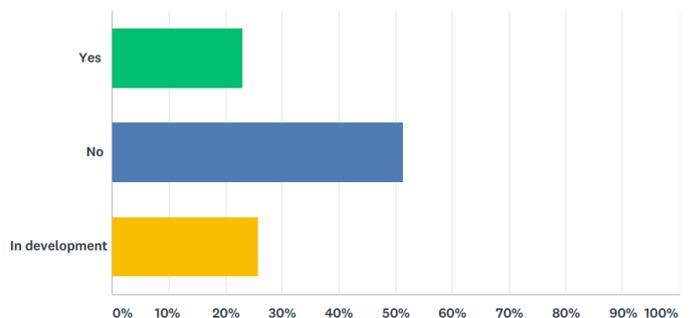
*Does your organisations smart technology strategy align with other government sector smart technology strategies?*



*What do you see as the biggest inhibitor / obstacle in implementing smart technology?*



*Does your organisation have a smart technology strategy?*



### ***In Depth Findings***

A total of seven in-depth interviews were completed focusing on a mix of private and local government organisations that included Smart Cities Council of Australia & New Zealand; LVX Community; City of Charles Sturt; City of Prospect; City of Playford; Murray Bridge Council and the Local Government Association of South Australia.

Detailed answers to eight key questions for each organisation are summarised in Appendix 2, whilst other in-depth findings by KMPG that interviewed City of Adelaide, Prospect and the Smart Cities Council of Australia and New Zealand were reviewed and summarized in Appendix 3 (KMPG, 2017). A summary of the key findings of the in depth interviews completed as part of this study are summarized in Table 2.

**Table 2:** Summary of key findings of the in-depth interviews.

<b>Question</b>	<b>Key findings</b>
For projects and services that link to smart city applications, what outcomes are important to you?	Outcomes that were important to organisations interviewed varied widely and ranged from: better customer experience, improvements in local economy, workability, livability, health and wellbeing, sustainability, safety, beautification, improvement of ‘play-space’, broadband connectivity (infrastructure), building and knowledge (workforce), innovation (building relationships), digital equality (access to technology and skills), advocacy ( identifying leaders for positive change), increased community connections and access ( people, places, spaces, experiences and opportunities), increasing value to the community ( efficiencies, cost, savings, enhanced services to reduced rates).
Where is the best place for local government to apply smart technology approaches in your view?	Linkage to corporate strategy was advised as a good place to start, in particular tackling the greatest challenges facing a particular area of the community, where smart technology can be applied as a ‘solution’ or an ‘enabler’. To help kick start a strategy early “on ramp” investments were highlighted as important where mainstreaming smart technology applications into existing capital upgrade projects, developing IoT networks and good connectivity were listed as key examples. It was viewed that any project that helped to improve and achieve the above listed ‘desired outcomes’ were a worthy focus for smart technology applications. Other areas that respondents identified as needing smart city approaches included assets and infrastructure( particularly transportation), development and regulation, application and online tracking of progress, access to the community facilities, public and community safety, aged and disability care and communication with residents of non - English speaking communities.
What is required to take a council to the next stage, if they are not fully transformed?	It was advised by two organisations there needs to be a move from piloting to scaling/ replicating phases and better integration into day to day business. Avoiding being crippled by “one off” projects was also important and to ensure deep learnings are captured from each pilot project and applied to changes in policies, programs and business processes. Other ideas were to maintain funding through grant access, adequately train staff and elected members, ensure a robust/ clear strategy or plan is developed/implemented, utilise resident satisfaction survey to build in smart technology to help identify issues/ideas, and ensure good internal and external collaboration.
Are you part of an intelligent community forum or any smart technology partnership(s)?	The Smart Cities Council of Australia and New Zealand, the Global Intelligent Forum, the IoT alliance, the Local Government Asset Management Network, Local Government IT network, Planning Institute, Adelaide University, and the Adelaide University Smart City Consortium. Once council was in the early stages of forming a ‘smart city’ partnership with a major city in the USA and has an independent smart city advisor. One of the initiatives of the LGA is to establish a Metro Local Smart Cities network that will assist in development of smart cities strategies.

Question	Key findings
<p>Do you think factoring in smart technology into procurement policies and specifications are important and can you give examples?</p>	<p>It was viewed that procurement along with cyber security and corporate governance were the three largest constraints for councils where there was a need for flexibility to embrace often untested and evolving ideas and applications. Ipswich Council have developed some innovative clauses that allow them free reign to sole source specialist smart technology providers. There is a great opportunity for a “shared services” approach that aims to aggregate the procurement demand allowing for greater scale and buying- power in purchasing. However one respondent warned that general procurement policies are already criticised as being overly complicated for suppliers, so if smart technology was factored in there may be a greater reluctance to bid for work especially in more regional councils. Lastly, it was viewed that the sector should work with procurement early and do due diligence on what is needed by councils, test the market and specify a set of ‘standards’.</p>
<p>Have you talked to a community group about what smart technology is and what is needed from their perspective?</p>	<p>It was confirmed that customer expectation is increasing in relation to: (1) embracing new technology; (2) innovation/modern and progressive; and (3) access Wi-Fi / Internet / NBN. The majority of the respondents have yet to engage with community groups to confirm these trends and to identify issues that may be able to be resolved by smart technology. Feedback was that the concept was largely foreign and most rate payers perceive it as online payments and apps. There was only one respondent that confirmed it utilised a resident satisfaction survey to build in smart technology questions to help it identify issues/ideas.</p>
<p>Do you think training and development within councils related to smart cities is important?</p>	<p>The general consensus from most respondents was that council’s needed to develop better literacy around smart cities, particularly within strategy, services and operational sections of council. Adequate skills and training was cited as a critical path for successful implementation and management of Smart City. The types of training suggested by one respondent including sharing of case studies, industry demonstrations and workshops that discuss problems and formalized possible strategies. One opportunity flagged was Smart Cities Council of Australia and NZ training and workshops (80% of training changed mindsets). Another respondent made the point that although we have the technology to accommodate ‘big data” collection we have to be aware of how to future proof the way we build, capture and plan for the future. Lastly for smart technology to work it requires participation from businesses and the community to develop and use new services. To encourage this participation the use of common spaces such as smart labs, and shared events plus training sessions are fundamental to engage different stakeholders.</p>
<p>Is there anything else you would like to discuss or mention about your smart technology journey?</p>	<p>Tackling major urban challenges wont work if councils fail to love data. Furthermore if councils don’t embrace smart technology they won’t survive given the ability to secure more effective / efficient investments. South Australian councils generally also have a poor record at following ISO37106 Smart City Strategy Guidelines Standards and it is recommended that councils consider this standard when developing their strategies. One council advised that the Local Government sector needed to be less vendor focused and more resident focused whereby the first step is to find out what is needed and then source the technology to find a solution.</p> <p>From a regional and rural perspective it was expressed there are issues with implementing smart technology frameworks due to population size, physical area of the council and low levels of staffing and budgets. Grants are now aimed at collaboration across councils requiring significant budgetary commitments. There is concern in regional areas that the availability and quality of online services, together with often lower socio-economic base and higher levels of disadvantage, will result in an increase in the digital divide between metro and regional areas.</p>

03

# Discussion and summary

...ique  
...mply and take action  
...rise and focus on keeping it simple  
...ping it moving.  
...are passionate  
...re proud of our authentic heritage and provenance.  
...celebrate our successes and learn from our mistakes.  
...We are stronger delivering together  
...We thrive on being part of a global team empowered to deliver,  
...we celebrate our diversity and work energetically towards an exciting future.

# Discussion

## Survey

Although smart technology agenda is 13 years old, the journey has just begun for the South Australian Government Sector and there is still much to be done.

This was reinforced by the survey findings in Section 2 where 51% of SA councils did not have a strategy in place while 25% were developing their strategy (i.e. total 76% without endorsed strategy). There is a collaborative opportunity, therefore between councils with respect to the development and review of smart technology strategies.

Furthermore it was found that 83% of current strategies aligned to either a federal, state or local government strategy with 90% of smart technology strategies in development also aligning. This showed that current federal and state strategies are starting to successfully influence the transition of South Australian Councils to smart technology.

However, where Council did have a strategy in place, 44% lacked alignment with other broader strategies.

The survey results also showed that there was a strong uptake of smart technology initiatives despite having no strategies in place (i.e. seven councils have or are proposing to undertake smart technology initiatives without a strategy in place) (Table 1). Smart technology initiatives that are not associated to a strategy pose risks to councils as the alignment of any projects undertaken may differ to that of the organisational objectives.

The cost benefit of smart technology projects was also perceived to be the biggest inhibitor to implementing smart technology strategies. This was likely due to competing priorities internally and the difficulty to accurately map out the economic, social and

environmental benefits of a smart technology projects.

The creation and adoption of quality strategies is critical in improving service deliveries to the community. This belief is echoed by the work already undertaken by the Metropolitan Local Government Group (MLGG) which proposes four potential pathways to improve Adelaide's impact and visibility in the world smart technology landscape (University of Adelaide, 2018). These four pathways include:

1. Common grounds for data collection and measurement (homogenisation of data). Sharing information – lessons learned/dashboard
2. Creation of working groups (industry, academia and government) to facilitate smart technology projects / Increase innovation process through idea cross-fertilisation
3. Identify South Australian strengths in order to become a leader in smart technology projects around the world. Creation of a South Australian Smart City Strategy.
4. Share resources to increase smart technology project performance (economies of scale and scope).

## In Depth

The in depth findings outlined insights into how SA councils can more successfully mainstream smart technology into its business practices (Table 2).

Firstly potential smart technology outcomes were diverse, emphasising the breath, creativity and complexity of where smart technology can be applied. Linkage to corporate strategy was advised as a good place to start, in particular tackling the greatest challenges facing a particular area of the community, where smart technology can be applied as a 'solution' or an 'enabler'. It was no surprise that these recommendations strongly aligned with other smart technology case studies from across Australia and the world (Arup, 2017; Arup, 2017a; Arup 2018; Catapult Future Cities & Arup, 2017).

It was viewed that procurement along with cyber security, corporate governance and inequity between rural and metro councils (i.e. lack of Wi-Fi, IT infrastructure and budgets) were the three largest constraints for councils. Such barriers were also echoed in the literature along with a multitude of solutions which should inform due diligence on respective strategies and projects (Smart Cities Council , 2013; Caragliu, et al 2011;IBM, 2018 ). However, it was viewed that SA councils had no choice but to push forward, embrace smart technology and ‘love data” if it’s serious about tackling major urban challenges.

Experts also advised that to transform the local government sector, SA councils should avoid being crippled by ‘one-off’ projects and instead capture and record learnings from each pilot project and apply changes to internal policies, programs and business processes. This belief should perhaps be noted by the Department of the Prime Minister and Cabinet (2018), and be used to adjust future ‘Smart Cities and Suburbs Program’ funding rounds to assist in addressing such an issue.

Another suggestion to accelerate smart technology across SA councils was to increase participation in an intelligent community forum or a smart technology partnerships such as the Adelaide University Smart City Consortium Group (2018) or to team up with a successful council either within Australia or abroad.

Some experts also argued that smart technology needed to be linked to ‘people’ and the desired outcomes were actually needed by the community. According to the Smart Cities Council (2013), by keeping ‘people’ the primary focus of a smart technology strategy, this will ensure SA councils achieve higher levels of “health and well-being” and ‘sustainability’ for its constituent’s. What matters is creating fun, surprising places where people want to live, work and be healthy. Despite the above however, the majority of the in-depth respondents surprisingly have yet to engage with the community given the concept was largely foreign and difficult to consult on.

# Summary & recommendations

No matter what you call it, 'smart cities' or 'smart technology', there is no hiding from it. Over the next five years Local Government can position itself to deliver maximum community benefit and a unified vision across the whole state.

Overwhelmingly, the results from the survey undertaken as a part of this study identified that there is an inherent lack of strategy when it comes to implementing smart technology. Where strategies are in place, they more often than not lacked a broader alignment with state and federal strategies.

In order to efficiently enable the delivery of smart technology it is recommended that a Steering Committee is set up to assist in the development of strategies and other key enablers such as:

- Prepare a cost benefit analysis toolkit tailored for smart technology projects given results of survey (Table 1)
- Review a 'shared service' approach administered by SA LGA for procurement of smart technology (refer to Ipswich Council clauses that allow flexibility to source specialist smart technology providers)
- Provide assistance to all Councils (Regional and Metro) in the preparation of policies/strategies;
- Provide support to councils to implement strategies and apply for funding;
- Provide training and networking opportunities, specifically focusing on peer-to-peer learning and technical matters;
- Provide up to date resources and support information sharing through a website,
- E-newsletter, blog articles and forums.
- Incorporate a specific tailored program for regional councils given lack of resources and small populations.

Without an overarching steering committee in this space, it is likely that councils will continue to act on an individual basis which will provide minimal broader community benefit.

A steering committee will be able to oversee the efficient roll out of smart technology as well as provide assistance and direction on the implementation of strategies, which is why it's the biggest opportunity Local Government has within the next five years.

Furthermore it is recommended that strong linkages to respective corporate strategies are maintained by councils who are developing Smart technology strategies. In particular tackling the greatest challenges facing a particular area of the community, where smart technology can be applied as a 'solution' or an 'enabler' is recommended.

Councils should also not re-invent the wheel and aim to utilise the Smart Cities Council of Australia and NZ Smart Readiness Guide (Smart Cities Council, 2013) and align with ISO37106 Sustainable cities and communities – guidance on establishing smart technology operating models for sustainable communities (ISO, 2018).

It is also recommended that the Steering Group consider establishing a "Smart Lab" network to encourage business and community participation in the use of common spaces such as smart labs, and shared events plus training sessions are fundamental to engage different stakeholders. This could be linked to a public facing website similar to WSUD SA. The smart Lab would aim to link to the already established University of Adelaide Smart City Consortium Group (2018) as well as be tasked to facilitate the formation of other linkages to Southern, northern and regional locations and create links to other universities.

Councils should also try and engage with their community via resident satisfaction survey to build in smart technology questions to help it identify issues/ideas that can inform strategy development. This will ensure smart technology delivery will result in uptake and success.

All these recommendations have been summarised in Appendix 4 within an Implementation Plan.

04

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# **Appendix 1:**

## Survey Monkey Questions

## Q1 Organisation name

Answered: 39 Skipped: 0

#	RESPONSES	DATE
1	City of Port Adelaide Enfield	9/19/2018 4:34 PM
2	Adelaide Hills Council	9/19/2018 3:48 PM
3	Rural City of Murray Bridge	9/19/2018 12:29 PM
4	Playford Council	9/18/2018 7:05 PM
5	District Council of Karoonda East Murray	9/18/2018 3:29 PM
6	City of Salisbury	9/18/2018 2:59 PM
7	Coorong District Council	9/18/2018 1:55 PM
8	Berri Barmera Council	9/18/2018 1:47 PM
9	Town of Gawler	9/12/2018 6:19 PM
10	Port Adelaide Enfield	9/12/2018 12:03 PM
11	City of Tea Tree Gully	9/10/2018 9:17 PM
12	City of Charles Sturt	9/10/2018 2:00 PM
13	Mount Barker District Council	9/6/2018 5:23 PM
14	Whyalla City Council	9/6/2018 3:23 PM
15	Mid Murray Council	9/6/2018 12:53 PM
16	Yorke Peninsula Council	9/6/2018 12:16 PM
17	District Council of Grant	9/5/2018 5:32 PM
18	Northern Areas Council	9/5/2018 2:36 PM
19	City of Charles Sturt	9/5/2018 12:52 PM
20	Port Pirie Regional Council	9/5/2018 12:50 PM
21	Port Pirie Regional Council	9/5/2018 12:14 PM
22	city of west torrens	9/5/2018 12:06 PM
23	City of Tea Tree Gully	9/5/2018 12:00 PM
24	Yorke Peninsula Council	9/5/2018 11:41 AM
25	The Flinders Ranges Council	9/5/2018 11:37 AM
26	City of Adelaide	9/5/2018 11:32 AM
27	The Barossa Council	9/5/2018 11:28 AM
28	City of Charles Sturt	9/5/2018 11:27 AM
29	City of Holdfast Bay	9/5/2018 10:59 AM
30	Adelaide Hills Council	9/5/2018 10:46 AM
31	District Council of Streaky Bay	9/5/2018 10:11 AM
32	City of Onkaparinga	9/5/2018 9:54 AM
33	Naracoorte Lucindale Council	9/5/2018 8:41 AM
34	City of Charles Sturt	9/4/2018 10:33 PM
35	District Council of Yankalilla	9/4/2018 9:36 PM
36	Wakefield Regional Council	9/4/2018 9:19 PM
37	Loxton Waikerie DC	9/4/2018 9:15 PM
38	City of Mitcham	9/4/2018 8:14 PM



## Q2 What is your position at this organisation?

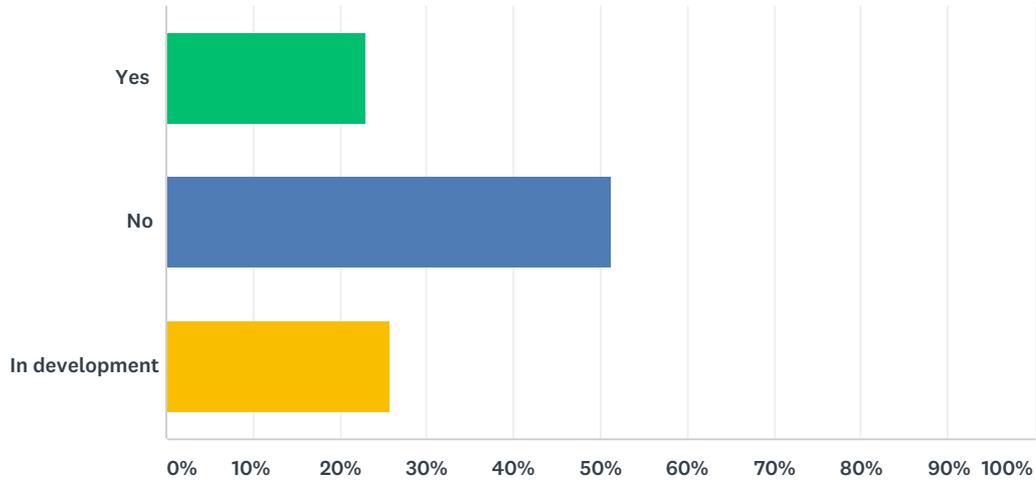
Answered: 39 Skipped: 0

#	RESPONSES	DATE
1	Corporate Information Manager	9/19/2018 4:34 PM
2	Manager ICT	9/19/2018 3:48 PM
3	Chief Executive Officer	9/19/2018 12:29 PM
4	CEO	9/18/2018 7:05 PM
5	CEO	9/18/2018 3:29 PM
6	Manager Business Systems and Solutions	9/18/2018 2:59 PM
7	Information Services Coordinator	9/18/2018 1:55 PM
8	CEO	9/18/2018 1:47 PM
9	ICT	9/12/2018 6:19 PM
10	CEO	9/12/2018 12:03 PM
11	CEO	9/10/2018 9:17 PM
12	Manager Information Services	9/10/2018 2:00 PM
13	Manager ICT	9/6/2018 5:23 PM
14	CEO	9/6/2018 3:23 PM
15	Director of Corporate & Financial Services	9/6/2018 12:53 PM
16	CEO	9/6/2018 12:16 PM
17	ICT Coordinator	9/5/2018 5:32 PM
18	CEO	9/5/2018 2:36 PM
19	IT Platforms Lead/Smart Cities Lead	9/5/2018 12:52 PM
20	Manager ICT	9/5/2018 12:50 PM
21	CEO	9/5/2018 12:14 PM
22	manager information services	9/5/2018 12:06 PM
23	Business Solutions Team Leader	9/5/2018 12:00 PM
24	Leader Systems and Technology	9/5/2018 11:41 AM
25	CEO	9/5/2018 11:37 AM
26	Product Manager Technology Platforms (CTO)	9/5/2018 11:32 AM
27	Manager Knowledge and Technology Services	9/5/2018 11:28 AM
28	Cloud Solutions Architect	9/5/2018 11:27 AM
29	CEO	9/5/2018 10:59 AM
30	Systems Analyst	9/5/2018 10:46 AM
31	CEO	9/5/2018 10:11 AM
32	CEO	9/5/2018 9:54 AM
33	CEO	9/5/2018 8:41 AM
34	CEO	9/4/2018 10:33 PM
35	Chief Executive Officer	9/4/2018 9:36 PM
36	CEO	9/4/2018 9:19 PM
37	CEO	9/4/2018 9:15 PM
38	Ceo	9/4/2018 8:14 PM



### Q3 Does your organisation have a Smart Cities strategy?

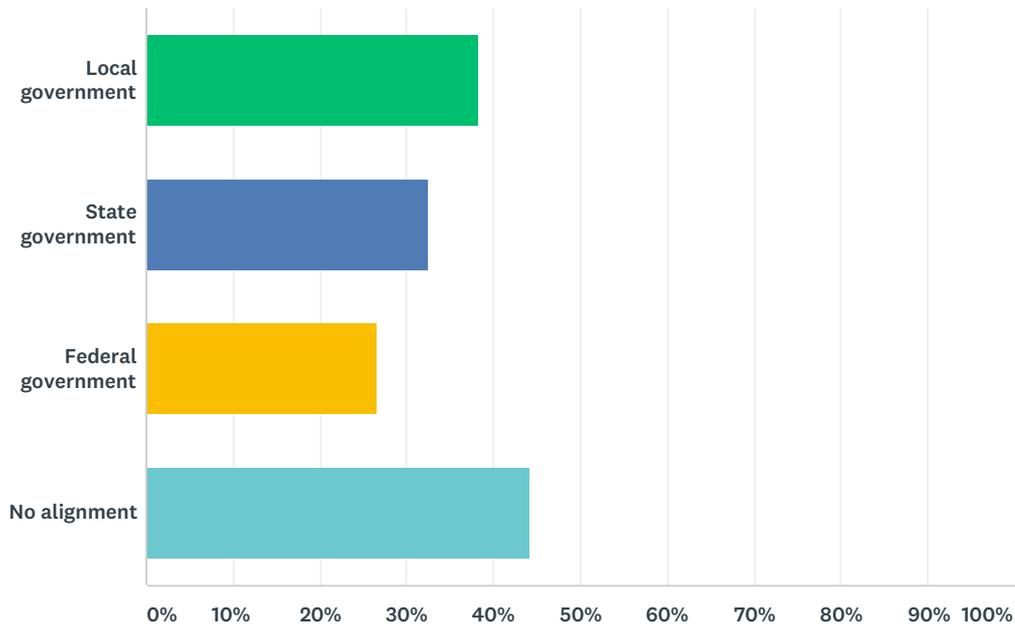
Answered: 39 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	23.08%	9
No	51.28%	20
In development	25.64%	10
<b>TOTAL</b>		<b>39</b>

## Q4 Does your organisation's Smart Cities strategy align with other government sector Smart Cities strategies?

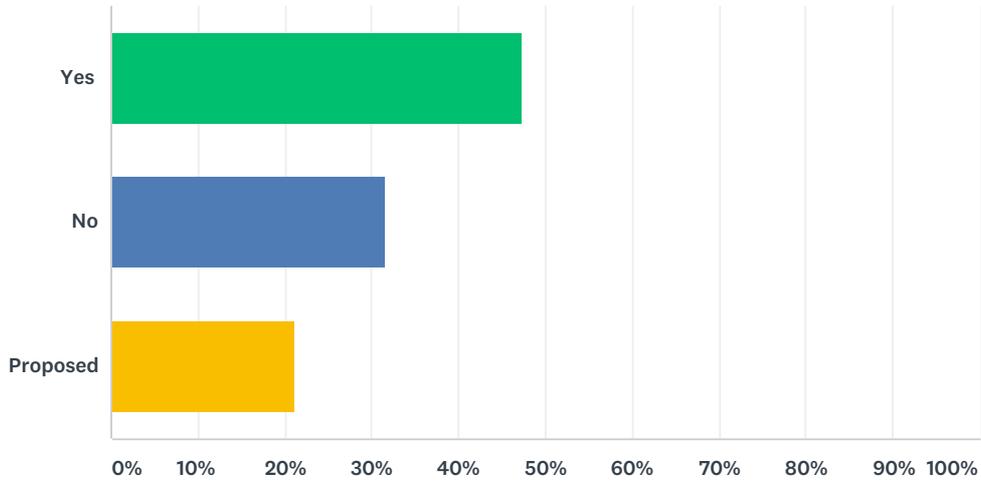
Answered: 34 Skipped: 5



ANSWER CHOICES	RESPONSES	
Local government	38.24%	13
State government	32.35%	11
Federal government	26.47%	9
No alignment	44.12%	15
Total Respondents: 34		

## Q5 Has your organisation undertaken a Smart Cities initiative?

Answered: 38 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	47.37%	18
No	31.58%	12
Proposed	21.05%	8
TOTAL		38

## Q6 Please provide details of your organisations Smart Cities initiatives undertaken or proposed.

Answered: 30 Skipped: 9

#	RESPONSES	DATE
1	Interactive Wayfinding, Public WiFi and Asset Monitoring	9/19/2018 4:34 PM
2	IoT Network - Sensors connected to Council Assets	9/19/2018 3:48 PM
3	Digital Strategy Change Plans	9/19/2018 12:29 PM
4	storm water, Street Lighting, Parking sensors, Driverless bus trial, smrt working trials, connectivity	9/18/2018 7:05 PM
5	None	9/18/2018 3:29 PM
6	Multiple projects including customer interactios, digital spaces and information, lighting and wayfinding, public digital access	9/12/2018 6:19 PM
7	Way finding through our tourist precinct	9/12/2018 12:03 PM
8	WiFi, smart messaging, smart solar powered rubbish comacting bins, smart technology for our street sweeper, automated irrigation network controllers, automated water recycling network controllers and promoting Council events and services thurgh our various social media channels to name a few	9/10/2018 9:17 PM
9	Smart parking, smart bins, LPWAN antenna for sensors to support school STEM projects. Various planned initiatives including open data, sensor and real time reporting proof of concepts etc.	9/10/2018 2:00 PM
10	Parking sensor trial	9/6/2018 5:23 PM
11	1. Provide infrastructure to allow the roll out of gigabyte bandwidth to the city. 2. pursing an autonomous vehicle trial	9/6/2018 3:23 PM
12	Installation of public kiosks in townships and beacons for interpretative trails.	9/6/2018 12:53 PM
13	NA	9/6/2018 12:16 PM
14	Magical Park subscription for the Port MacDonnell Foreshore Development. Integration of multiple Community Wastewater Management Systems (CWMS) into a single system	9/5/2018 5:32 PM
15	Initiatives have been identified in our Strategy - <a href="https://www.yoursaycharlessturt.com.au/36175/documents/78181">https://www.yoursaycharlessturt.com.au/36175/documents/78181</a>	9/5/2018 12:52 PM
16	WiFi, CCTV, Street Lighting	9/5/2018 12:51 PM
17	Provision of free wifi in selected towns	9/5/2018 12:14 PM
18	Community GIS, end-to-end digital experience, beacons, smart assets	9/5/2018 12:06 PM
19	A number of continuous improvement, capital and operational projects at CTTG align with Smart Cities objectives, though don't have a standalone strategy to drive them. We are currently implementing a pilot Internet of Things network, working on digital customer engagement (Customer First), online forms and development applications, location intelligence (GIS) open data publishing and incorporating smart initiatives into asset renewals and projects.	9/5/2018 12:00 PM
20	Measuring water meters remotely, camping site occupancy, walking trail, jetty and road utilization, weather sensors, dirt road surface degradation measurement.	9/5/2018 11:41 AM
21	Nil - internet speeds and capacity no good enough	9/5/2018 11:37 AM
22	Economic Insights, People Movement, Smart Parking, Digital Wayfinding, City Insights (Insights to existing data), 10Gig Adelaide	9/5/2018 11:32 AM
23	.	9/5/2018 11:28 AM
24	Smart parking, smart bins	9/5/2018 11:27 AM
25	LED Public lights, trial of a driverless vehicle, CCTV and smart sensors to increase safety and building monitoring, moving systems and software to the Cloud	9/5/2018 10:59 AM
26	Investigating uses for IOT sensors on Council assets	9/5/2018 10:46 AM

## Emerging Leaders 2018 - Project team 3 - Smart Cities

27	We are looking at smart bollards and also proximity detection for economic development, marketing and infrastructure usage	9/5/2018 9:54 AM
28	LEDstreet lighting conversion with smart fittings, compactor bins, etc	9/4/2018 10:33 PM
29	Have completed WiFi of townships, Smart Bin with WiFi, Solar Panels on all buildings, installed 2 electric vehicle charging stations with other coming shortly and have budget for a smart pole this year.	9/4/2018 9:36 PM
30	WiFi proposed in country town centres	9/4/2018 9:19 PM

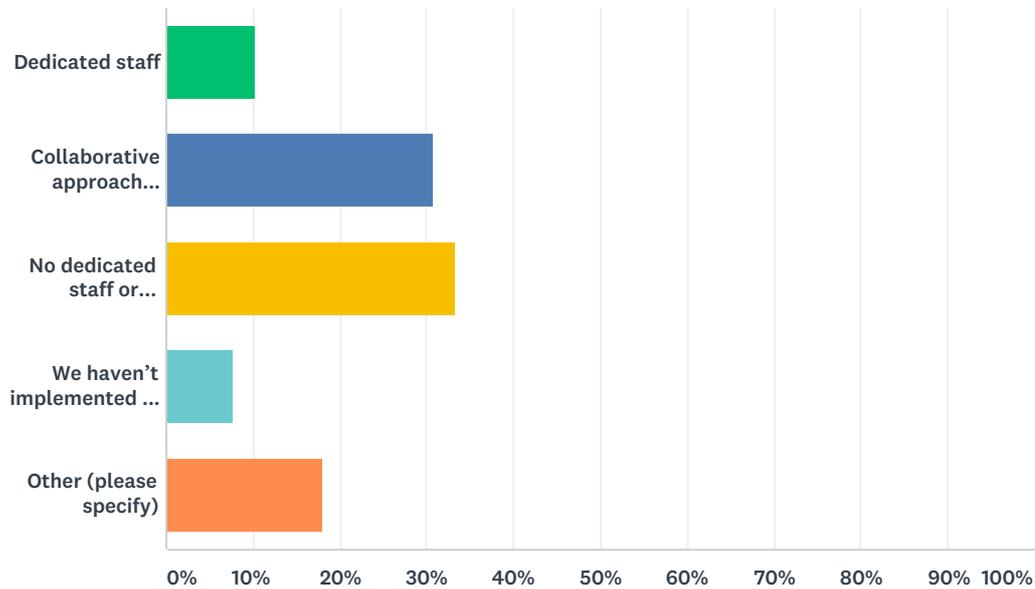
## Q7 What is the purpose of Smart Cities initiatives within your organisation?

Answered: 30 Skipped: 9

#	RESPONSES	DATE
1	Tourism, Economic Development and Asset Management	9/19/2018 4:34 PM
2	To pilot the use of an IoT Network in the Adelaide Hills Council Area	9/19/2018 3:48 PM
3	Improving Customer Experience/Service	9/19/2018 12:29 PM
4	future proofing of city and employment opportunities	9/18/2018 7:05 PM
5	NA	9/18/2018 3:29 PM
6	Partnering with digital leaders and the community we will embrace the digital age and deliver tangible and beneficial solutions	9/12/2018 6:19 PM
7	Better intergration of urban environment into lives of residents and businesses	9/12/2018 12:03 PM
8	To improve our services to our community	9/10/2018 9:17 PM
9	To support and enable delivery of the community and corporate plan, and guide the creation of a smart community.	9/10/2018 2:00 PM
10	In response to Hahndorf Township Plan - to facilitate finding car parks and reducing congestion	9/6/2018 5:23 PM
11	Part of a suite of initiatives to revitalise and grow our economy.	9/6/2018 3:23 PM
12	Access to public internet facilities and increase tourism.	9/6/2018 12:53 PM
13	NA	9/6/2018 12:16 PM
14	Tourism/Entertainment, Improved management and visibility of the CWMS sites	9/5/2018 5:32 PM
15	To more efficiently and effectively deliver our Community Plan Objectives. To attract knowledge, creativity and investment helping to grow the economy	9/5/2018 12:52 PM
16	Future Connectivity, Community inclusion, Reducing Cost, Safer Communities	9/5/2018 12:51 PM
17	for tourism purposes (services available) and to assist local businesses provide information to people using our wifi	9/5/2018 12:14 PM
18	customer service, asset management, efficiency and productivity improvements	9/5/2018 12:06 PM
19	current initiatives are driven by the existing Council Strategic objectives and goals in achieving improved service delivery, efficiencies and continuous improvement	9/5/2018 12:00 PM
20	collect data to improve business processes	9/5/2018 11:41 AM
21	N/A	9/5/2018 11:37 AM
22	Better Experiences and Outcomes for all City Users, Economic Growth of Adelaide and Surrounds	9/5/2018 11:32 AM
23	.	9/5/2018 11:28 AM
24	A Smart City combines the physical and digital worlds to deliver a sustainable, prosperous and inclusive future for its citizens. It has people at its heart!	9/5/2018 11:27 AM
25	To create a city that thinks and responds efficiently to consumer needs.	9/5/2018 10:59 AM
26	To achieve efficiencies through better use of data	9/5/2018 10:46 AM
27	Provide real time information both push and pull	9/5/2018 9:54 AM
28	Deliver better services to our community - efficiency our effectiveness. Position our city for future opportunities.	9/4/2018 10:33 PM
29	Meet Community demand, become a destination and cleaner living.	9/4/2018 9:36 PM
30	Economic development	9/4/2018 9:19 PM

## Q8 How does/would your organisation resource Smart Cities initiatives?

Answered: 39 Skipped: 0

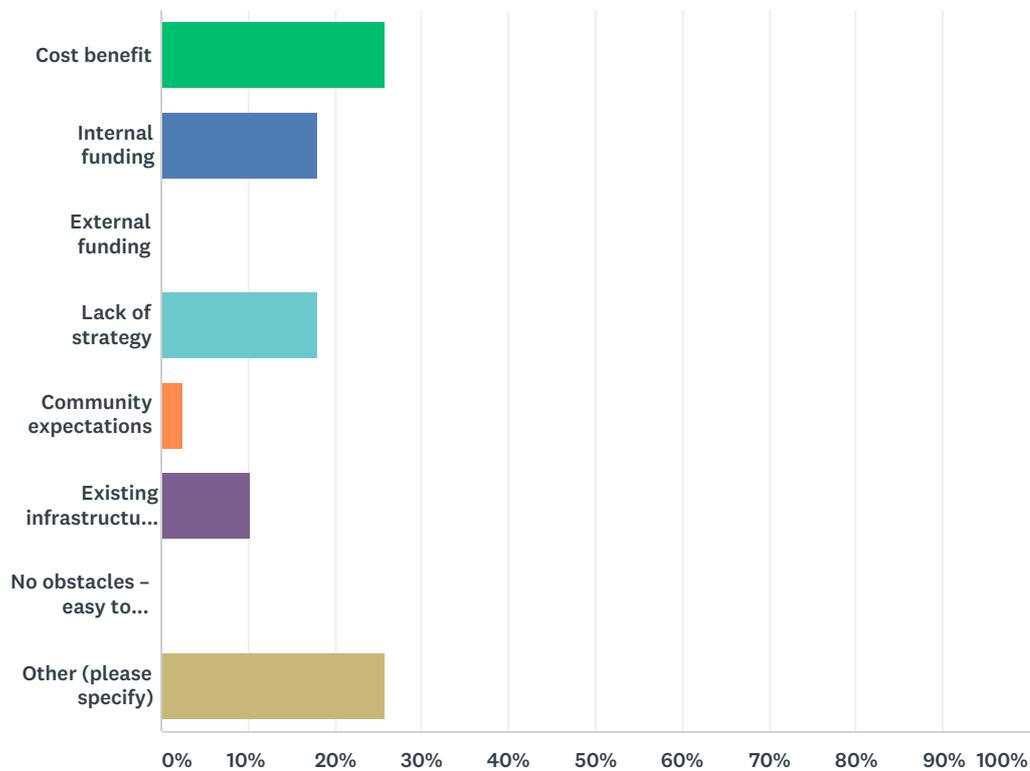


ANSWER CHOICES	RESPONSES
Dedicated staff	10.26% 4
Collaborative approach through public/private partnerships	30.77% 12
No dedicated staff or resource	33.33% 13
We haven't implemented any smart cities initiatives and do not require a resource	7.69% 3
Other (please specify)	17.95% 7
<b>TOTAL</b>	<b>39</b>

#	OTHER (PLEASE SPECIFY)	DATE
1	For our Pilot it's a collaborative effort between Council Departments	9/19/2018 3:48 PM
2	Through our routine service delivery using existing Council resources and/or our capital works programs	9/10/2018 9:17 PM
3	A collaborative approach is taken with business units identifying initiatives aligned with the Strategy, and funding and resources allocated through the annual budget bid process.	9/10/2018 2:00 PM
4	Using existing staff to progress improvements	9/5/2018 12:06 PM
5	Multiple - Dedicated Staff, Collaborative Partnerships across all tiers of Govt and also Private Sector (e.g. TPG)	9/5/2018 11:32 AM
6	Strategy that is operationalised across the organisation, but with identified staff taking leadership role on identified projects / Initiatives.	9/4/2018 10:33 PM
7	Would depend on the project.	9/4/2018 8:14 PM

## Q9 What do you see as the biggest inhibitor/obstacle in implementing Smart City initiatives?

Answered: 39 Skipped: 0



ANSWER CHOICES	RESPONSES	
Cost benefit	25.64%	10
Internal funding	17.95%	7
External funding	0.00%	0
Lack of strategy	17.95%	7
Community expectations	2.56%	1
Existing infrastructure capacity	10.26%	4
No obstacles – easy to implement	0.00%	0
Other (please specify)	25.64%	10
<b>TOTAL</b>		<b>39</b>

#	OTHER (PLEASE SPECIFY)	DATE
1	Funding general	9/10/2018 9:17 PM
2	Lack of state government support to the regions. They try to apply capital city methodologies to regional areas.	9/6/2018 3:23 PM
3	Internet service is not good even with new NBN therefore impractical to deliver in a rural environment	9/5/2018 2:36 PM
4	Procurement policy and budget cycles.	9/5/2018 12:52 PM
5	Competing business priorities	9/5/2018 12:06 PM

## Emerging Leaders 2018 - Project team 3 - Smart Cities

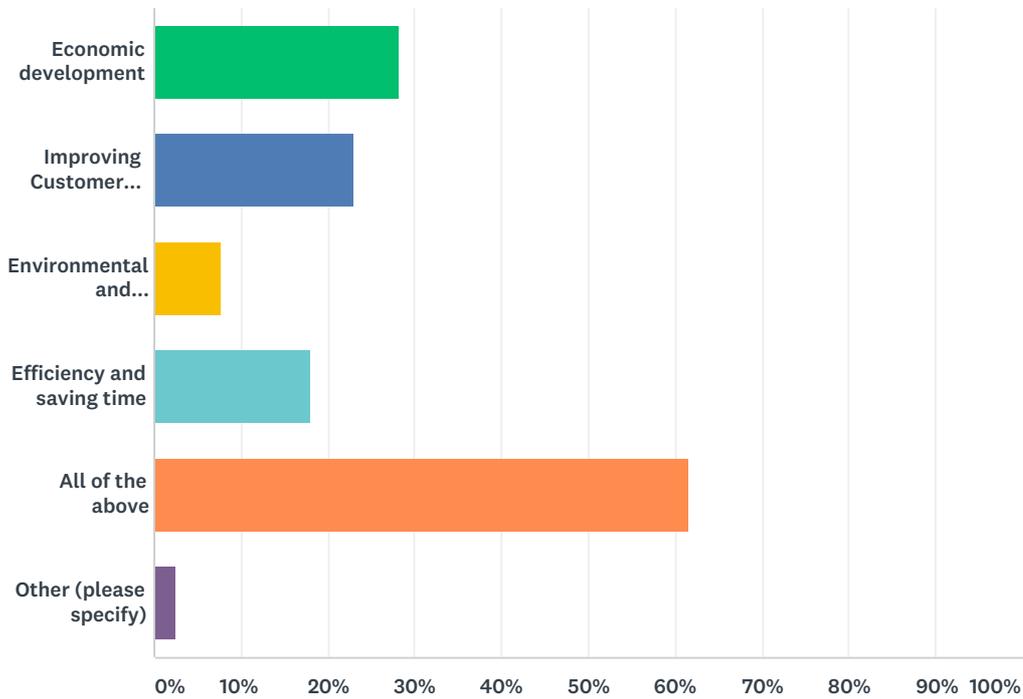
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6	Understanding and awareness of where opportunities are available, within existing systems and services as well as innovation projects to create new smart capabilities for Council and communities	9/5/2018 12:00 PM
7	At times it can be all of the above depending on the particular initiative. However, the key one I would say is the "human element" whereby these initiatives are "new" and education of the many possible outcomes can only do so much at times. Success does lay in commitment to the outcome and maintaining focus on that - in our case its predominantly all about improved "Customer Experience" whatever that may entail.	9/5/2018 11:32 AM
8	The budget bid cycle prohibits innovation through 'okay to fail'	9/5/2018 11:27 AM
9	Clear outcomes not defined yet	9/5/2018 10:46 AM
10	Imagination and ideas of what could be, combined with cost effectiveness.	9/4/2018 10:33 PM

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## Q10 What were/would be the key drivers for adopting Smart Cities initiatives?

Answered: 39 Skipped: 0



ANSWER CHOICES	RESPONSES
Economic development	28.21% 11
Improving Customer experience	23.08% 9
Environmental and Sustainability outcomes	7.69% 3
Efficiency and saving time	17.95% 7
All of the above	61.54% 24
Other (please specify)	2.56% 1
Total Respondents: 39	

#	OTHER (PLEASE SPECIFY)	DATE
1	Creating something "boutique" and "unique" that allows SA and Adelaide to differentiate itself from every other city around the world - the past 3 years have given us success in this area....however "Smart Cities" is now a bandwagon everyone is on so we need to push towards the next thing beyond.	9/5/2018 11:32 AM

## Q11 Do you have any other comments in relation to your organisation and Smart Cities strategy and/or initiatives?

Answered: 20 Skipped: 19

#	RESPONSES	DATE
1	No	9/19/2018 3:48 PM
2	Customer Satisfaction and Staff Satisfaction are integrally linked	9/19/2018 12:29 PM
3	For smaller regional councils, a regional strategy as opposed to a council strategy would be of benefit in terms of attempting to get things up and running. Some recent funding was announced, but it was a minimum of \$50K matched, which for a small council off its own bat, is not realistic - this would mean a \$100K project in a small town to provide wi-fi for example.	9/18/2018 3:29 PM
4	Smart Cities has been renamed Smart Communities and we make decisions about digital technologies using the Smart Community principles	9/12/2018 6:19 PM
5	no	9/12/2018 12:03 PM
6	Although we do not have a formal smart cities strategy the idea of smart cities concepts is built into our current programs and projects	9/10/2018 9:17 PM
7	Have supported the state MOU to deploy Sigfox Low frequency network across the district. This network is suitable for low volume deployments, however for high volume deployments such as parking sensors this solution would be prohibitively expensive and implementation of an alternative technology such as LoraWAN should be considered and would prove more economical in the long term.	9/6/2018 5:23 PM
8	no	9/6/2018 12:16 PM
9	It's important that we have a greater Adelaide approach to many of these initiatives so meaningful collaboration and leadership is critical	9/5/2018 12:52 PM
10	No Comments	9/5/2018 12:51 PM
11	NO	9/5/2018 12:14 PM
12	We are progressing customer service and asset management initiatives of higher priority at present but see that smart city initiatives will become important.	9/5/2018 12:06 PM
13	Many Councils are participating in conversations around Smart City initiatives and the LGA is about to commence development of a Smart Cities blueprint and framework. We are at a critical juncture with early adopters implementing some smart city initiatives, but most still formulating what it will look and feel like - i.e. whether a separate strategy is needed or 'smart' initiatives already have a place in existing strategies with some clearer understanding, awareness and effort. Good luck with the project, we would love to see a continued conversation between Councils across the state and nationally to achieve a shared goal and framework to assist in accelerating the development and maturity of all Councils and communities in creating space and policy for citizen led innovation to thrive.	9/5/2018 12:00 PM
14	No	9/5/2018 11:37 AM
15	As our projects come to completion which we have spend the past 3 years planning and executing, and we still are perhaps 12months away from reaping all the fruit of our toils, it has been very successful	9/5/2018 11:32 AM
16	It was a while coming but I am really happy with it.	9/5/2018 11:27 AM
17	This is the future. We all need to dip our toe in the water. A project-by-project approach will yield some experience, but a strategic approach is better for the long term.	9/5/2018 10:59 AM
18	It's important to use technology that's here right now and not always be looking into the future	9/5/2018 9:54 AM
19	Its an emerging area and important to take risks and try new things but not get distracted by the toys!	9/4/2018 10:33 PM
20	Happy to discuss in more detail if required.	9/4/2018 9:36 PM

## **Appendix 2:** In depth interviews

# In Depth Interview Questions & Responses

## **Q1. For projects and services that link to smart city applications, what outcomes are important to you?**



Smart City applications should improve workability, livability and sustainability of a city. Also applications should result in improvements in productivity and health and well-being both internally and externally.



For this question I refer to our generally accepted definition that we propose to our clients: “A Smart City provides a safer, more usable and more beautiful environment in which to work and play, while at the same time delivering economic and environmental benefits to all”.

Any project that contributes to this is outcome is important. Smart Cities are about people. Technology can be an enabler, but it is never the solution. The reason to strive to be a Smart City is the very same reason that we strive to be smarter people: to improve the quality of our lives and to provide benefit to the world and everyone and thing in it. Smart does not always mean “Tech” – Some Examples of Non-tech Smart City we’ve worked on:

- Repainting lines on the road to be ready for autonomous Vehicles, Las Vegas
- Innovative traffic flow strategies, Seattle
- Polylingual Messaging, Los Angeles
- Wellbeing Indices, Santa Monica
- Identifying and messaging those eligible for welfare, Playford



Great strategic decisions made by smart data collection. Predicting the cause and effect of optimised and constraint solutions.



Broadband connectivity (infrastructure), building and knowledge (workforce), innovation (building relationships), digital equality (access to technology and skills), sustainability (drive growth) and advocacy (identifying leaders for positive change).



That the community have greater connections (and access) to people, places, spaces, experiences and opportunities.

That we are finding and creating value for the community (efficiencies, cost, savings, enhanced services etc to reduce the rate burden and provide responsible government)



Ease of use – at both ends of the spectrum, uptake by community, accessible to community (technology and cost), works alongside traditional service delivery for those without traditional service access.



The LGA SA has adopted the Smart Cities Council of Australia and New Zealand's definition "using technology and data for good". We then make a distinction "soft" and "hard" smart cities and then between "internal" and "external". Soft is how councils think about smart cities, how they strategise and organise themselves. Hard is the actual infrastructure, such as PC's, mobile phones, sensors etc. Internal is the technology used in side a council by council staff for administrative purposes that aim to increase effectiveness and efficiencies. External includes "smart-poles", parking apps and the like. The outcomes that are important to the local government sector include the use of technology and data to increase community wellbeing whilst achieving increases in efficiencies and effectiveness. It is ALL about the citizen (In this case the rate-payer, local business or tourist/visitors).

Outcomes can be thought of in terms of councils better understanding the wants and needs of its constituents such as customer service delivery, procurement (using local suppliers where appropriate, increased start-ups, business growth and job creation, timely road work completion, administrative and governance transparency, red tape reduction,

Examples:

- New business opportunities for existing and new business to develop and deliver improved or new services (e.g. use of big data to understand customer needs and business development opportunities)
- Better customer experience for locals and visitors, accessing new services and interacting with different city channels in an easy and smart way.
- Economic growth of the area as a result of new customers/business growing their business and generating a pole of attraction of more business and visitors.
- Generating synergies among different companies and the public sector enabling a cluster of collaboration where specialization and scale economies provide even more value added for new and improved services (Think Silicon Valley).

## Q2. Where is the best place for Local Government to apply smart city approaches in your view?



Every morning when you wake up there are 3000 new IT applications that enter the market. Therefore being led by the technology always will be a losing strategy for a Council. Instead it was recommended that Councils initially review their main corporate strategies objectives and plans and use these to prioritise where smart city applications are applied. To be able to measure performance and develop SMART goal is critical associated with applications so that effectiveness can be reported back to senior leadership teams.

Adam also mentioned the importance of early “on-ramp” investments (i.e. existing capital upgrade projects such as main street upgrades or developing a suitable IoT network with good connectivity). Furthermore the importance of ‘data’ needs to be valued by the organisation and it is recommended that time be dedicated to developing a robust data policy that considers ‘open’ vs ‘private’ data.

However depending on key challenges and issues this may vary from Council to Council. Adam advised that the Council have developed an effective tried and tested framework for strategy development that can be applied.



Smart City is a process and a way of thinking, not just a suite of technology and projects. Anywhere were the objectives of point 1., above, can be better served and met, then Smart City should be considered based upon its merit.

Commonly targeted areas of benefit are:

- Reduced electricity consumption
- Reduced water consumption
- Reduced waste and increased recycling
- More efficient traffic flow
- Enhanced Public Safety
- Economic Activation
- Improved Wellbeing
- Beautification
- Improved Education
- Improved Resilience
- Increased Connectivity, Data and Knowledge Sharing



Asset Management in particular within transportation to capture pedestrian and vehicle growth and the effects they have on the associated assets (roads, paths, environment etc) .



Measuring against the key indicators above in day to day business.



To be really 'smart' individual councils should be applying smart city approaches to the greatest challenges facing their area or community. Being a smart city is about addressing the greatest challenges or barriers for a community – the technology solution deployed is just a solution or an enabler.

From a 'finding value' perspective, it would be standard for local government to apply smart city approaches to customer interface, workforce mobility (eg inspectors, EHOs, field staff) and measuring public asset utilisation etc.



Development and regulation- application and online tracking of progress, infrastructure & asset – maintenance and issues reporting, access to community facilities, public & community safety, aged & disability care through home support & communities with cohorts of non-English speaking backgrounds.



Given Smart Cities is a way of thinking and a way of acting, the application of smart cities should be embedded in all that councils do. When planning and budgeting councils should identify what questions they need answered and then see if technology and data can answer them. Smart City approaches should only be used if they are going to make a material difference and not for technology sake.

In the first instance councils should take a citizen first approach and invest in technology that improves the interaction between the rate-payer/business and the council and an example could be the ease to register a cat or dog online.

At this stage, where majority of local governments are in their first steps, the projects should focus in areas that provide services with high impact

for the greater number of people with proven simplified implementation (known methodologies, vendors and timeframes etc).

In a more general sense it is the data collection and analysis that is/will be the cornerstone of the use of technology and data for good (Smart Cities approach).

### Q3. What is required to take a Council to the next stage, if they are not fully transformed?



Most Councils in Australia are in piloting projects and are yet to hit the scaling and replicating phases (i.e. fully transformed phase). There is a need to move away from Councils being crippled by “one off” projects. It is also important to ensure that deep learnings are captured from each pilot project and that policy and programs are amended accordingly. The need for business cases on every single smart city initiative is “old school” thinking and instead as long as initiative links back to corporate strategy it should be considered.



LVX’s experience in providing these Smart City Advisory Services has seen us develop a clear, robust, iterative and proven engagement strategy with a compact timeframe. This is known as the LVX Global “Smart City – 360 Vision” Program and has six phases: (1) Mobilisation; (2) Consultation Plan; (3) Maturity Assessment and Global Benchmarking; (4) Smart City Framework; (6) Implementation Roadmap; (7) Final Report.



Build a Smart City Strategy plan, or if unsure look at another organisations one to see if they have addressed topics/ideas that might be applicable.



Advocacy and collaborating with residents to improve lives of residents and operations of businesses. What do people in the area actually need. Every year the City of prospect undertake a resident satisfaction survey which has key questions around smarts that help identify issues / ideas.



It has to move away from pilot or individual ‘smart’ projects to operational integration into the day to day of business units. Eg there’s no point collecting great data about asset utilisation if there isn’t a process for the operational unit to use that data it to adjust their services etc.



Funding through grant access, adequately trained and resourced staff, elected member support (age profile of some members can be an issue with some initiatives). Community support in a challenging rate environment where Council spending on other than 3R's is under question.



Main challenge for councils is the lack of a clear smart city strategy. This is required to create a roadmap that will allow a gradual smart cities transformation.

Smart Cities transformation is not a quick fix, rather it is a continuous process of several initiatives aligned producing a change in how the city works, interacts with their stakeholders and provide value for their businesses, citizens and visitors. The key is collaboration and coordination within and without the council.

#### Q4. Are you part of an intelligent community forum or any smart city partnership(s)?



As stated in Q3., Smart Cities Council of Australia and New Zealand is the peak body for smart cities and as such is part of a global “intelligent community forum”. The Council has a lot of key partnerships such as an IoT alliance, Planning Institute and others that allow merging of resources and capacity building.



- Member & LVX Global Representative, Smart Cities Council, (Global)
- Member, Lonmark Smart Cities Council, (Global)
- Member & LVX Global Representative, Institute of Public Works Engineers Australasia, (“IPWEA”)
- Member, Australian Smart Communities Association, (“ASCA”)
- Independent advisor and project designer to WA Government’s Public Transport Authority for lighting, technology and Internet of Things, (“IoT”), and Smart City implementation
  
- Independent advisor and project designer to City of Perth re: digital transformation strategy, smart technology, lighting and data collection; project designer to various projects including successful submission to the Federal Government’s Smart Cities & Suburbs Program 2017.
  
- Independent advisor and project designer to City of Playford re: Smart City Strategy, Digital Transformation and Internet of Things, (“IoT”) adoption and implementation
- Independent advisor and project designer for Sunshine Coast Council re: Smart City Implementation for Mooloolaba Foreshore Revitalisation Project
- Independent advisor, project designer and commercial, technical and risk due diligence to Brisbane City Council and Brisbane Airport Corporation, (owned by Brisbane City Council), in relation to Smart City and IoT Technology adoption and digital transformation.
- Project Designer and Smart City Strategy Development for Carrick Hill Estate Arts & Culture Precinct, City of Mitcham
- Project Designer and Federal Government Smart Cities & Suburbs Program Grant Submission Lead for City of Unley’s successful Heywood Park Smart Precinct Project
- Technology advisory, design and technical due diligence for:
  - NSW Government’s Royal Botanic Gardens Smart Precinct
  - City of Sydney’s Smart Lighting Project
  - Moreton Bay Regional Council’s Petrie Mill Smart Precinct
  - City of Los Angeles Smart Node Project



I am part of the South Australian Local Government Asset Management Network membership, Local Government IT and SA Local Government GIS Community.



Relationships with Adelaide university, Smart City Consortium



We are in the early stages of forming a 'smart city' partnership with a major city in the USA. We have an independent smart city advisor.



No



The LGA SA collaborates with the Smart Cities Council of Australia and New Zealand and the University of Adelaide's Smart Cities Consortium.

One of the initiatives of the LGA is to establish a Metropolitan Local Government Smart Cities Network. This group will assist in the implementation of the Metropolitan Smart City Strategy.

**Q5. Do you think factoring in smart cities into procurement policies and specifications are important and can you give any examples?**



This is absolutely critical for Councils. Too often the current day procurement processes are to purchase pens and paper. However there is a need for an overhaul when procuring smart city applications given they are often 'not well tested' and are 'evolving'. Ipswich Council have developed some innovative clauses that allow them free reign to sole source specialist smart city applications for example.



Procurement along with cybersecurity and corporate governance are the 3 largest constraints in the adoption of smart city solutions. LVX's standard guidelines for government in relation to procurement are:

- Procurement in the smart city market should take place directly with approved/selected vendors following appropriate procurement processes in order to de-risk emerging technology
- To the extent possible vendors should own the risk of their products and services for the agreed period of any supply agreement, further de-risking the project for the client
- Long term indexed commercial metrics & warranty obligations must be in place prior to proceeding with procurement
- Tenders should provide vendors with a "whole of opportunity" view, but on a client controlled basis, (call options for future works)
- Go to market with preferred but flexible procurement strategies and invite tenderers to propose their own terms
- With other cities/councils to get the best commercial outcome
- Ensure procurement policies have been reviewed and amended to accommodate prevalent Smart City & IoT vendor solutions



We always seek innovation value adds for each project within our procurement process. In more recent projects we've seen big data being offered to be stored on cloud storage which is incorporated into online API's for viewing and reporting. We've seen improved data collection techniques and data quality assurance methods using Smart technologies to drive high order data.



This is an area where traditional government always has an issue ( i.e. cart before the horse). There is often not a large number of tech providers to go out to, therefore a lot of red tape to justify sole sourcing. It's a very challenging area.



A big yes if we want integrated, secure, smart technology solutions installed across our city and council assets (and this means things link building management systems, lighting, CCTV, car park sensors etc)

Every time we build a new asset, we need to tender for these things and we can't specify specific brands so we end up with an assortment of different technology brands and capabilities.

Ideally we should work with procurement early and do a due diligence check on what we need, test the market and specify a set of 'standards' for each piece of technology. Then when we tender, it's for this exact product.



Depending on the procurement this may be worthwhile. General procurement policies are already criticised as being overly complicated and unwieldy for suppliers, so if smart cities was factored in, it may lead to increased reluctance to engage in tendering for Council work. The system would need to be simplified and require a base format that does not need full replication for every procurement template.



Yes. Procurement policies will be critical to the success of any smart cities strategy and implementation. The success will be contingent on the level of collaboration within council decision- making to ensure the various moving parts of the council are aware of the smart cities strategy and use the "roadmap" to guide what and how they procure technology. The great opportunity is for a "shared services" approach that aims to aggregate the procurement demand allowing for greater scale and buying-power in purchasing.

**Q6. Have you talked to a community group about what smart cities is and what is needed from their perspective?**



The Smart Cities Council Australia and New Zealand are yet to action, however on Monday 29th October the Canterbury Banks Town Council will be reviewing the effectiveness of their recent community engagement process completed for their Smart City Strategy. In particular a focus will be made on vulnerable groups within community particularly youth, elderly and migrants.



Keynote speaker and working group member for:

- SA Metropolitan Local Government Group Smart Cities Strategy
- Western Sydney Smart Cities Action Cluster
- IALA Sydney Olympic Park Smart Cities Working Group
- Parks & Leisure Association of Australia, ("Smart Parks")
- Smart City & IoT Cybersecurity advice and policy for SA Government
- Deloitte/World Bank Developing & Third World Smart City Resilience Strategy Group
- Delegate, World Smart Cities Council Conference, Silicon Valley, May 2018
- Delegate, World Smart Cities Conference, Washington DC 2018, October 2018
- Delegate, World Smart Cities Conference, Sydney, October 2018
- Special Advisor, Institute of Public Works Engineering Australasia SLSC Working Group



We have collaborated in the GIS and Local government community on Smart Initiatives in asset data management and what suggested measures should be in place for various organisations. We have not considered residential community engagement.



Refer to question 3 above.



Embracing new technology  
Being innovative/modern and progressive  
Access WiFi/internet/NBN for all residents



Basic discussions, the concept is still largely foreign and most see it as use of apps and other online payments. More than one language in any application development.



The LGA SA is the peak body for the local government sector and as such we don't tend to communicate to community groups, that is the domain of the individual councils. However, we have run two Smart Cities Strategy Workshops with 92 people representing local government, State Government private enterprise and universities.

The main objective of these workshops was, besides understanding the context of smart city in SA, to create a support network and create an overarching strategy working as an 'umbrella' framework for SA local government

**Q7. Do you think training and development within Councils related to smart cities is important?**



Yes extremely important – this is at the heart of what the Smart Cities Council Australia and New Zealand do - knowledge is power. The council runs training and workshops (80% of this is changing mindsets). Smart Cities is actually quite simple and as per the Smart readiness guide to apply eight recommended enablers. <https://rg.smartcitiescouncil.com/>



It's a given that if new functions demand new skills then training and development is required. This is true for any endeavour, not just the Smart City landscape. Adequate skills and training is critical path for the successful implementation and management of Smart City.



I think as we have the technology accommodate “big data” collection we have to be aware of how to future proof the way we build, capture and plan for the future. This kind of initiative sometimes requires external expertise.



Not everyone needs to be an expert. As long as they are across where Council is going and align with the key indicators of the relevant Council Strategic plan.



Yes, I think Council's need to develop better 'literacy' around smart cities.

Strategy, services and operational people need some 'smart city 101' – don't need all the tech lingo but a translation of what it actually means and how it's relevant to them – you'll lose people at internet of things.



Yes so that there is a full understanding of the implications of the technology and how best to utilise it for overall community benefit. Training will also help “sell” the products to the community.

Yes. Smart City initiatives require the participation of the business and the community to develop and use new services. To encourage this participation the use of common spaces such as smart labs, and shared events plus training sessions are fundamental to engage the different stakeholders.

Three types of sessions that could be used as smart city training to understand background and status of smart city initiatives are:

- Case studies: Different organizations (public or private) telling they journey by implementing a particular type of solution.
- Industry demos: Vendor providing information of specific products and services
- Workshop: Open session to discuss problems and formulate strategies or action plans.

**Q8. Is there anything else you would like to discuss or mention about your smart city journey?**



The agenda is 13 years old and the Smart Cities Council Australia and New Zealand has been running for six years. However there is still much to be done and the journey has just started. Taking major urban challenges won't work if Councils fail to love data. Furthermore if Councils don't embrace smart cities they won't survive given the ability to secure more effective/efficient investments. Communities depend on Councils getting it right and it's a very exciting time for Councils and stakeholders that assist in planning cities. However applications of smart cities need to be tailored to community needs and demographics to be truly successful.



As above per question 7.



No



Less vendor focused and more resident focused. Find out what they want and then source the tech to find the solution.



Councils need to be really aware of not starting with a technology solution and going from there. This makes us vulnerable to vendors who want to sell all sorts of products that we might not need, or is not the priority for us at that time.

We should always be starting with a real and relevant community problem or challenge, and then finding the tech solution.



Regional & Rural councils have issues with implementing a smart city framework due to factors such as smart city framework due to factors such as population size, physical area of council, the number of communities (towns, budgets and staffing).

Grants are now aimed at collaboration across councils requiring significant budgetary commitment, which can be beyond the resources of the regional local governments, either separately or in groups of councils. The benefits are for councils with the denser populations and larger budgets.

There is concern in regional areas that the availability and quality of online services, together with often lower socio-economic base and higher levels of disadvantage, will result in an increase in the digital divide between metro and regional areas.

There would need to be gradual rollout and dual systems in place to ensure services are appropriately delivered to the community.



- The 19 councils in the Metropolitan Local Government Group are in different stages of progress with their Smart City journey.
- Basically, we can divide them in 3 groups. One group is in strategy planning stage, a second one is in the first stages of testing and the last one is underway the implementation of solutions.
- The Smart City Journeys depends of leadership of councils (Mayors and CEOs) and their maturity of understanding and vision about Smart Cities. That is reflected in the distribution of the 3 groups mentioned before.
- For non-metropolitan councils, the main challenge and opportunity is the “tyranny of distance” and lack of scale for mercantile activity. The solution is to “join them all up” using technology.” using same technologies and services could create competitive advantage for business and people.

## **Appendix 3:**

In depth interview, KPMG in-depth interview  
learning summary

## KMPG In-Depth Interview Learning Summaries

City of Adelaide - Martin Haese, Mayor, City of Adelaide

<https://home.kpmg.com/au/en/home/insights/2017/11/smart-cities-making-adelaide-competitive-liveable-martin-haese.html>

- Great seaways between sustainable green and smart.
- Important to manage the public conversation – what’s in it for them and how is it going to make their life better?
- City welcomes and embraces education and learning first part and secondly a city that embraces technology to enable creativity, jobs and economic development.
- Must measure everything – reported on annually to determine success
- In-house or via partnerships
- CISCO smart city lighting, energy, water and traffic.
- Local governments and the wider public sector are embracing the smart cities and communities movement to deliver real outcomes for their citizens.
- The important part of driving a strong technology agenda is to actually manage the public conversation. An important part is to have it as a very benefits based conversation. When talking to a commercial or residential rate payer – what’s in it for them? How’s it going to make their life better?
- The power of data infrastructure to enable more prosperous and resilient communities.
- Our keystone project is a **ten gigabit data network** for the City of Adelaide. We actually view that as infrastructure, as infrastructure that will make Adelaide more competitive.
- The city itself will be relying on this infrastructure to become more sustainable by improving energy performance and increasing the use of renewable energy in the city’s buildings, driving low-emission activities and transforming waste and recycling.
- It’s what people will do with it that matters – the entrepreneurs, the start-ups, the corporates, the property, creative and investment communities – this will ensure that the city thrives.”
- Whether that is a carbon reduction discussion, a traffic management or water or energy management discussion - data and foundational infrastructure like data networks are extremely important. So there’s strong link between being a smart city and being a green city.”

<https://home.kpmg.com/au/en/home/insights/2017/11/smart-cities-improving-services-city-of-prospect-cate-hart.html>

- The council has been conservative in its approach to smart technology
- The community is at the heart of their smart city programme
- Intelligent Communications Framework
- Training Development
- Partnership with University of Adelaide
- Incubator scheme for small businesses
- “Smart cities is more than technology...it’s much more about supporting the community. One of the challenges of smart cities is maintaining the relevance of the terminology and ensuring that the community understand it’s not just about gadgets...”
- “The opportunity to work with the **Intelligent Community Forum** came up a number of years ago and the council decided it would be a good way to frame its approach to servicing the community. [The forum] has a range of indicators that need to be demonstrated in order to be recognised as an ‘intelligent community’. Those indicators now underpin our strategic management plan and hence our service delivery model.”
- The City of Prospect’s recent waste tender demonstrates this approach. Instead of purchasing compacting bins or bins that notify when they are full, the council has sought bids for waste management delivered on a platform of smart technology and innovation. With the smart technology the council can measure the quantity and type of waste being collected.
- We won’t go out and buy it”. Instead the key question for the council is “how can we structure our tender of services around opportunities to introduce smart technology
- Driven from economic development and community development focusing on interfaces
- Smart App for parks that summarise services
- Maintaining the relevance of terminology

Adam Beck, Executive Director, Smart Cities Council, ANZ

<https://home.kpmg.com/au/en/home/insights/2017/11/smart-cities-local-government-seize-opportunity-adam-beck.html>

- National Smart City Plan from a policy and funding availability
- There are about 10–15 local authorities that are really embracing this agenda, they have the strategy, staff and resources in place and are deploying. There's another 20 or so that are moving to that place and there are a couple hundred that are just starting their journey.
- Local crises in energy, housing affordability and climate are wake-up calls which will allow the smart city movement to take the lead, as we have with the green building movement, by applying the smart city concept to building design, urban development and infrastructure.
- By breaking it down into smart precincts, smart campuses, smart urban development and infrastructure; we can start to shift our thinking. The take-home message is learn from others, but also learn by doing ( i.e. North America, Europe & India).
- Getting there through strong and networks
- Importance for Pier to Pier
- Smart Cities Chronicles – lessons learnt
- Mind set around smart cities – becomes a risk and cost exercise

## **Appendix 4:** Implementation plan

# IMPLEMENTATION PLAN

Action number	Action	Comment	Responsible party	Implementation time frame
<b>Steering committee setup</b>				
1	Steering committee set up with the aim to: <ul style="list-style-type: none"> <li>• Provide assistance to all Councils in the preparation of policies/strategies;</li> <li>• Provide support to Councils to implement strategies;</li> <li>• Provide training and networking opportunities, specifically focusing on peer-to-peer learning and technical matters;</li> <li>• Provide up to date resources and support information sharing through a website,</li> <li>• e-newsletter, blog articles and forums.</li> <li>• Incorporate a specific tailored program for regional Councils given lack of resources and small populations.</li> </ul>	The role of the committee is to oversee the efficient roll out of smart technology as well as provide assistance and direction on the implementation of strategies to Local Government in SA.	LGA	Short
<b>Possible actions arising from the steering committee and for individual Council's</b>				
2	Undertake a cost benefit analysis	Steering committee to undertake cost benefit analysis on the implementation of smart cities technology on behalf of Local Government.	Steering committee	Short
3	Ensure ongoing linkages between respective corporate strategies and Smart Technology Strategies.	Linkages between Council and broader state / federal strategies will ensure a level of consistency.	Steering committee / Councils	Ongoing
4	Utilise the Smart Cities Council of Australia and NZ Smart Rediness Guide.	As to not 're-invent' the wheel - this document provides guidance on establishing smart city operating models for sustainable communities.	Steering committee / Councils	Ongoing
5	Align strategies with ISO37106 Sustainable Cities and Communities - guidance on establishing smart city operating models for sustainable communities (ISO, 2018)	As to not 're-invent' the wheel - this document provides guidance on establishing smart city operating models for sustainable communities.	Steering committee / Councils	Ongoing

## Definitions

Short: 0-3 years

Medium: 3-5 years

Ongoing: for the life of the plan

# IMPLEMENTATION PLAN CONT.

6	Establish a “Smart Lab” network	To encourage business and community participation the use of common spaces such as smart labs, and shared events plus training sessions are fundamental to engage different stakeholders. This could be linked to a public facings website similar to Water Sensitive Urban Design SA.	Steering committee	Medium
7	Undertaking a Resident Satisfaction Survey	To build in smart technology questions to help Council’s identify issues/ideas that can inform strategy development .	Councils	Ongoing as required
8	Provide a shared place for data collection and measurement.	Information sharing	Steering committee	Ongoing as required
9	Advocate for a South Australian Smart Technology Strategy	To provide a clear vision for the state	Steering committee	Short
10	Assist councils in resource sharing	To enhance efficiencies	Steering committee	Short

## Definitions

Short: 0-3 years

Medium: 3-5 years

Ongoing: for the life of the plan

