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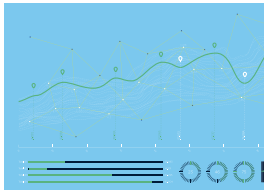
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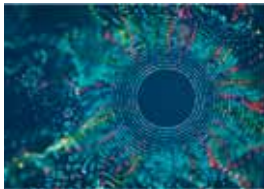
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Insider



Smarter data on the horizon

Improved analytics will unlock new worlds of efficiency and better decision-making for all levels of government.

"A fundamental shift." That's how The Hackett Group's Roy Barden describes the move to advanced analytics within government, a trend that will help to power a process that most of us had probably assumed was standard procedure anyway — that is, evidence-based policy. As Barden says in our interview article in this issue ('Advanced analytics for all'), government is a data-rich environment, and the more that data can be mined and analysed the better off we will all be... through more efficiency and better outcomes. This will be especially true in fields such as health (particularly preventative healthcare), security, education and finance.

One challenge presented by the advanced analytics push is that of developing and maintaining a skilled workforce who can implement the strategy and then capitalise on its possibilities. Barden argues that it will be horses for courses — some of that expertise will be best located in-house (even to the extent of setting up centres of excellence), while the rest can be fielded externally.

Barden also points out that public servants will need to come to terms with a new breed of colleague — artificial intelligence — and the machine-assisted decision-making it will bring. It's a bit of a brave new world, but one that seems unstoppable. In an age of Siri and Alexa, we've all become accustomed to some level of dealing with AI and chatbots... so if such technology can help public servants operate more efficiently and flexibly by automating routine functions, who could possibly argue against it?

Of course, advanced analytics requires lots of data storage and processing, and in this day and age most of that is taking place in large data centres. If you're in any way involved in such activity, then you mustn't miss the **NSW Government Digital Marketplace conference and exhibition** on 13 September at Royal Randwick in Sydney. With a theme of 'Empowering Digital Communities', you'll be able to meet international digital leaders, government experts and industry professionals addressing the most important policies, management and leadership issues for the future of digital government and the role of public-sector information experts. The event will feature a CIO panel, NSW Government agency exhibits, case-study presentations from government executives and a physical representation of the 'DigiHub' digital marketplace. Full details are available at <http://events.publicsectornetwork.co/events/nsw-government-digital-marketplace/>. Registration is free for public sector professionals, academics and not-for-profit experts, so there's really no excuse for you to not be there!

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GOVERNMENT SERVICES
IN AUSTRALIA.

Jonathan Nally



f 'digital transformation' has been the buzzword phrase of the past five years, 'advanced analytics' is set to take over during the next five. What are advanced

analytics? They are analytics that enable analysis at a more granular level using more diverse datasets, and which will provide access to insights that were out of reach of analysts in the past. For example, there are studies that correlate the likelihood of heart disease in specific communities with the language used in their Twitter posts.

"It means a fundamental shift," said Roy Barden, Practice Leader—

Asia Pacific for The Hackett Group, a strategic transformation consultancy. "We have seen much discussion around the difficulty of shifting towards evidence-based policy. Advanced analytics will change the game on this.

"Government is a data-rich environment," Barden added. "Agencies such as the ATO, Home Affairs and the Department of Health hold large datasets that provide significant opportunities to generate value for all Australians... some of it is already being exploited. Advanced data analytics has the potential to fundamentally change decision-making processes."

Advanced analytics will also bring fundamental changes in service delivery models, as self-service analysis, activity automation and decision rights allocation will all be affected as the technology matures. This kind of evolution is oftentimes a blind spot for organisations, as advanced analytics technology can grow organically.

"Public servants will need to get more used to machine-assisted decision-making. This will require a cultural shift, and a technical one — to be able to challenge and learn from automated analytics processes," Barden said.

"Our point of view is to be proactive in designing an analytics service delivery model, which places organisations in an advantageous state to make the most out of these technologies," he added.

What about the differences in analytics needs and capabilities between the public and private sectors? Is there a gulf there?

"From a technical perspective, no, not really. But from a change, education and deployment perspective... yes, huge!" Barden said.

"Public perception is the main driver," he added. "There is a tacit understanding that Facebook and Google will use your data — although

there is now some pushback on this — but for government to be doing this is seen as something completely different."

Additionally, according to Barden the private sector historically has been driven by data — for them it is an extension, whereas for the public sector it is something newer.

Barden said there are three points to be considered:

- Analytics objectives should be guided by each government agency's purpose and strategic objectives.
- Those objectives typically have a greater emphasis on social value, eg, public health, security, education, influencing public sentiment, and even happiness.
- The data that government holds on individuals, and how this data is used, managed, stored and disposed of, will drive a higher need for oversight and scrutiny than in the private sector.

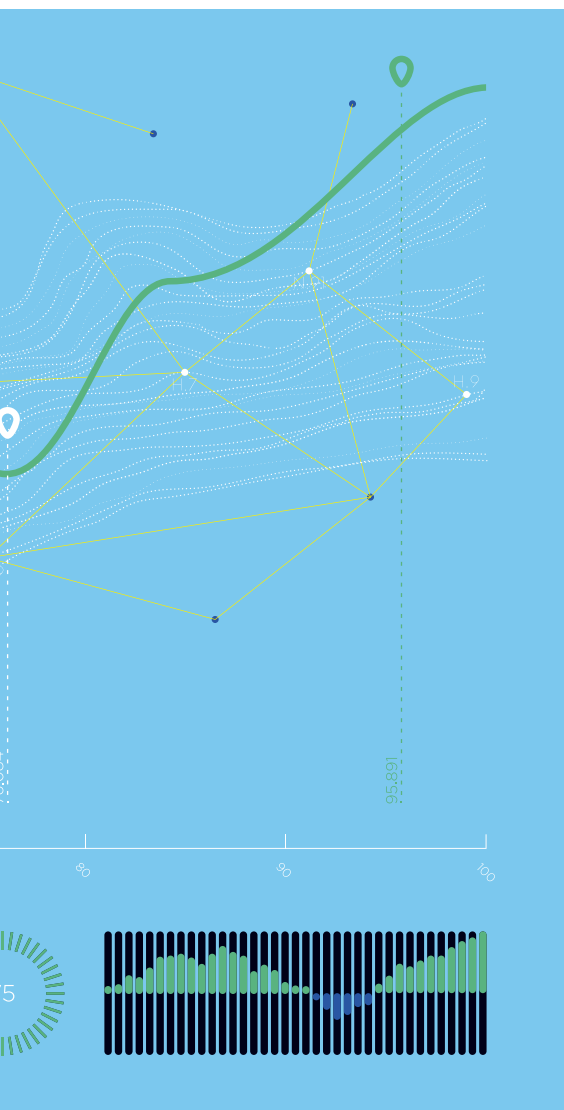
DELIVERING CAPABILITY

Are there particular sectors of public administration in which governments can best deploy advanced analytics, or will it be universally useful?

"The glib response would be universal, but the reality is that it will be focused on data-rich environments," Barden said. "The critical consideration is where will analytics be likely to deliver the most value?... which is a consideration also applicable to the private sector."

According to Barden, there is a risk of investing significant resources and effort developing analytics solutions but with the side effect of a massive opportunity cost, ie, it would have been better to have invested the efforts on something else. He said that selecting the appropriate use cases is key.

"Areas such as government procurement, government grant allocation and preventative health are



all examples of areas where analytics can deliver significant value,” he said.

SKILLS AND SHARING

Another key question is where should capability be developed to deliver on this — should governments build it themselves or buy from others? Specifically, which capabilities are required to commission analytics outcomes and what capabilities are needed to deliver those outcomes. “In our view, elements of the latter can be outsourced but the former needs to be developed as an in-house capability,” Barden said.

Advanced analytics often requires significant organisational- or topic-specific knowledge to add context to the analysis. “It makes sense to grow this internally,” Barden added.

Having said that, there are highly specialised technical skills that may not be cost-effective to develop for a single agency. “For example, the development of custom-made machine learning solutions — going beyond the standard packages available in the market and open source solutions — may require specialist skills from time to time that may be better sourced in an analytics-as-a-service or government-shared services model,” Barden said.

And should, say, a state government have a single, central analytics capability, or should smaller departments and agencies institute their own?

According to Barden, the case for some sharing of analytics capability is clear. “Centres of excellence can provide the critical mass to allow people to develop their careers in analytics,” he said. “On the other hand, domain knowledge is important, which would suggest benefits in specialisation. So, we are talking somewhere between the single monolithic capability and complete fragmentation.

“The big question for governments is the same one they face for any

shared and common service — do they let such clusters evolve or do they intervene to promote a landscape of capability?” he added. “The track record of governments doing this is mixed, so any intervention needs a proper advanced analytics strategy and suitable initial funding.”

“Analytics can be delivered through virtual centres of excellence, which can form a network of agency specific and shared resources. Note that governance and workload management require specific attention in this model,” Barden added.

“The ability for an agency to deliver more effectively on its purposes will be increased,” he said. “The establishment of the Data Analytics Centre in NSW, for example, is an example of governments realising the potential for advanced

to recruit thousands of IT specialists,” Barden said, citing a recent senate committee that advocated the development of something along the lines of the UK government’s Digital Academy.

In some cases, solutions are cloud based and/or open sourced. Sometimes the staff supporting analytics processes are outsourced or hired in an analytics-as-a-service model, which, in some instances, further reduces the need for heavy involvement from IT.

Of course, artificial intelligence is already all around us, from automated chat-bots to Alexa. It is a technology that is increasingly creeping up on us often without us even realising it. Where will AI fit into government IT, and analytics in particular?

“Our point of view is to be proactive in designing an analytics service delivery model, which places organisations in an advantageous state.” — Roy Barden, The Hackett Group

analytics to deliver better services to Australians.”

AI TO THE RESCUE?

There is, of course, an increased need for computer scientists, solution architects, cybersecurity specialists and other staff traditionally associated with IT functions. But data analytics requires skills beyond the realm of IT. There is an increased need of ‘analytics savvy’ managers who need to know how to commission analytics outcomes for their functions. There is also a need for staff with advanced knowledge of statistics and modelling, for example, who are not necessarily classified as IT specialists.

“There is a recognition already that the Australian public service needs

“Like the initial years of internet, people feel that AI will be big, but the extent of it and its impact on our society will become clear only over the next few years,” he added. “I still remember the launch of the iPad when no-one (except perhaps Steve Jobs) really knew what they would use it for.

“The resource model is shifting, and often where the data is held, processed, analysed and consumed is spread across the globe. And yes, artificial intelligence can reduce human touch points in this value chain.”

Barden thinks that there are potentially endless opportunities to use analytics backed by AI to augment our capabilities, and government will be no exception.



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MAKING SMART CITIES A SUCCESS

Dylan Bushell-Embling

A UK REPORT ON SMART CITIES CONTAINS RECOMMENDATIONS THAT AUSTRALIA MAY WANT TO INCORPORATE INTO ITS OWN FUTURE CITIES STRATEGIES.



Governments around the world are exploring ways to make their cities smarter and more livable for

residents, and Australia is no exception. The Australian Government can take some cues from its closest international partners to help it fulfil its smart city ambitions.

The UK's All Party Parliamentary Group on Smart Cities recently published the report from its inquiry into a UK government smart city strategy. The report contains a series of recommendations that could inspire Australian politicians to implement their own reforms.

The report found that in government there is skepticism and even concern about the concept of smart city technologies. 'Smart' technologies

are often considered at best to be expensive gimmicks and at worst to be a threat to the security and livelihood of the citizens the technologies are supposed to benefit.

Among the public themselves there is also confusion and a lack of understanding about the concept. The report cites a need to demystify and simplify the term for the public consciousness.

This aligns with recent research from marketing company Posterscope, which found that less than a quarter (23%) of UK consumers had even heard of the term smart city. But when informed about projects such as smart water, smart energy and smart traffic control initiatives, consumers were quick to see the potential benefits.

Australian governments at all levels may therefore want to consider

campaigns to increase public awareness of smart cities and their benefits.

According to the report, smart cities are accessible for people of all needs and physical abilities, can better support the most vulnerable members of society and have local authorities that work closely with their citizens to develop revolutionary new services.

Smart city technologies also have the potential to reduce the strain on the UK's National Health Service by opening up data sharing in health care, make transport more efficient by introducing smart technology such as smart ticketing and bring a myriad of other benefits.

The global smart cities market is meanwhile predicted to grow to US\$1.94 trillion (\$2.63 trillion) by the end of 2023, meaning that countries that take the lead with the smart cities agenda have



huge potential to tap into the growing smart cities market overseas.

RECOMMENDATIONS

The report also gives a series of recommendations for the UK government. A key suggestion involves strengthening ministerial responsibility for smart cities.

The report suggests options including introducing a Minister for Smart Cities, reinstating the post of Minister for Cities or introducing a Minister for Interoperability in charge of managing smart cities across the numerous sectors covered such as transport, health, energy and digital.

Australia is well placed in this regard, as the federal government already has a Minister for Urban Infrastructure and Cities, as well as an Assistant Minister for Cities and Digital Transformation.

Meanwhile, the report also recommends creating a library of key smart city data accessible by local authorities and the private sector.

This library should include case studies of best and worst practice, economic analysis of previous smart city projects including data on return on investment, a trove of design patents, as well as points of contact for fostering collaboration.

Going further, the report calls on the government to develop a framework for smart cities — complete with foundational principles and rules — for local authorities to use as a jumping off point.

Such a framework could include setting common standards for procurement to address the deficiencies of traditional procurement practices for smart city projects. It may also include guidelines for more strategic investment, as well as centralised standards for measuring the performance of smart cities.

LOCAL CIOs NEEDED

The report also recommends that the government produce messaging aimed at encouraging local governments to adopt a smart culture.

Such a culture would put citizens at the heart of the smart cities agenda, be outcomes focused with technology seen as a means to achieving these outcomes and put collaboration between cities before competition.

Government should also promote a culture of breaking down silo thinking and thinking horizontally rather than vertically. The report likewise recommends encouraging data sharing to improve the delivery of public services, promoting the message that cities can't afford not to innovate and

encouraging a culture of permission to fail.

In another recommendation that the Australian Government may want to consider, the report recommends that the UK government play a role in encouraging local authorities to appoint CIOs and chief digital officers, and seek to establish a national forum of these officers. Likewise, at a national level, the report suggests forming a central body of CIOs from each government department.

The report suggests that the government develop return-on-investment models for smart city projects that recognise the fact that both the costs and benefits of smart city initiatives are split across multiple budgets.

Finally, to secure a position for the UK in the global smart city technology market, the report calls on the government to play a role in promoting homegrown technologies overseas, such as by sending representatives of UK cities on global trade missions.

"The report sets out how, with a few small steps, the government can support the expansion of smart cities and allow them to recognise their potential. The economic potential of the UK becoming a leader in smart cities is huge — with the smart approach helping cities become more efficient and with a burgeoning overseas market ready to tap in to," APPG on Smart Cities Chair Iain Stewart MP said.

"A coherent strategy from central government is needed to ensure a joined-up approach between businesses. As a first step, the government should create a central virtual library of resources and best practice, and set foundational principles and rules that cities can follow."

Headlines

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Tas rolls out body-worn cameras for police

The Tasmanian Government is rolling out body-worn cameras for all police officers in the state.

The government has committed \$3.4 million over four years to provide the cameras to Tasmania Police, which is aimed at improving the safety of police officers and the community.

Following extensive consultation with police agencies across Australia and overseas, and a robust tender process, Axon Public Safety Australia has won the contract to provide Tasmania Police with a body-worn camera and digital evidence solution.

“Today, the first of the staged rollout of body-worn cameras will be deployed to frontline officers stationed in Hobart. The rollout will extend to frontline police officers stationed at Launceston, Devonport and Burnie in

the coming months,” said Michael Ferguson, Minister for Police, Fire and Emergency Management.

The body-worn cameras will capture audio and visual evidence direct from incident scenes. Based on evidence from other jurisdictions across the world, it is anticipated that the use of the cameras will positively influence the behaviour of people interacting with police.

This, in turn, will contribute to a safer working environment for frontline police officers.

“The use of body-worn cameras will also further contribute to the delivery of accountable, transparent and professional policing services to the Tasmanian community,” said Ferguson.

The use of body-worn cameras will be supported by the introduction of enabling legislation to parliament later this month. In the short term, police will use the devices under existing legislative provisions.

“The Tasmanian Government is committed to continuing to provide Tasmania Police with contemporary equipment and technology to increase the safety of our police officers, community members and victims of crime,” said Ferguson.

City of Perth going SaaS

The City of Perth has signed an eight-year software-as-a-service (SaaS) deal with Brisbane-based TechnologyOne to adopt the vendor's OneCouncil solution.

The city plans to use the solution, which has been developed specifically for local governments, to undergo a significant digital transformation.

According to City of Perth CEO Geoff Glass, the suite will initially be deployed internally in mid-2019, while online services developed using the solution will be rolled out to customers in the third year of the project.

“This isn't just an IT implementation, it's so much more than that. We are expecting OneCouncil to completely transform our business and facilitate the delivery of excellent digital services to our customers, giving them unprecedented access to self-service anytime, anywhere,” he said.

“Rather than starting with a blank slate, OneCouncil is a preconfigured software solution, which will allow us to accelerate our implementation and experience efficiencies sooner. Switching to SaaS will also see the City benefit from significant year-on-year cost savings, world-leading data security and the ability to stay at the forefront of innovation through regular system upgrades.”

He said that using a single, integrated enterprise software solution will allow the council to drive operational efficiencies and deliver quicker response times to residents.



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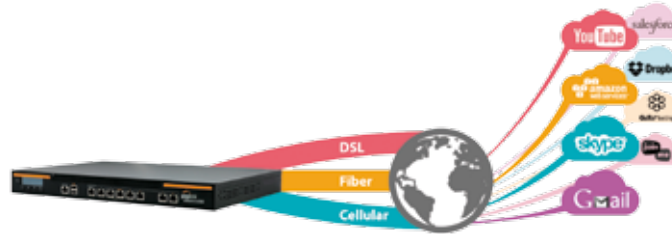


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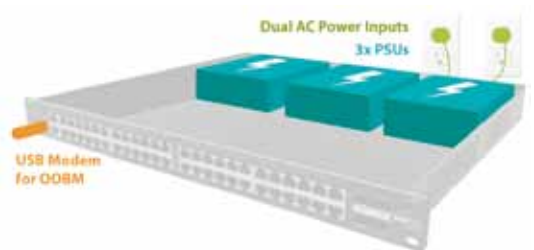
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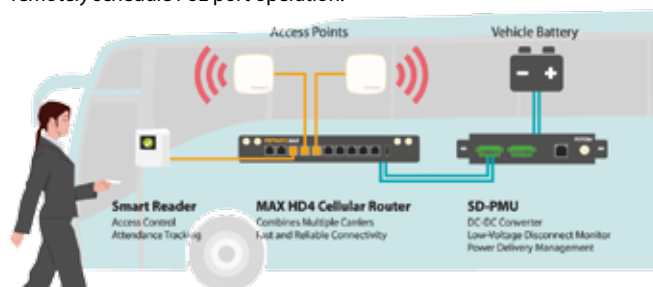
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The Peplink SD-PMU Advantage

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GRAFFITI, GARBAGE AND FIRES

HOW A.I. CAN TACKLE CITY PROBLEMS

Alan Zeichick

CONSOLIDATING NUMEROUS DATA STREAMS INTO A CITY'S DATA LAKE WILL ENABLE AI-POWERED APPLICATIONS RUNNING ACROSS MULTIPLE DEPARTMENTS.

The garbage truck rumbles down the street, and its cameras pour video into the city's data lake. An AI-powered application mines that image data looking for graffiti — and advises whether to dispatch a fully equipped paint crew or a crew with just soap and brushes.

Meanwhile, cameras on other city vehicles could feed the same data lake so another application detects piles of garbage that should be collected. That information is used by an application to

send the right clean-up crew. Citizens, too, can get into the act, by sending mobile phone pictures of graffiti or litter to the city for AI-driven processing.

Applications such as these provide the vision for the Intelligent Internet of Things Integration Consortium (I3), a new initiative launched by the University of Southern California (USC), the City of Los Angeles and a number of stakeholders including researchers and industry. At USC, I3 is jointly managed by three institutes: the Institute for Communication Technology Management (CTM), the Center for Cyber-Physical Systems and the Internet of Things (CCI) and the Integrated Media Systems Center (IMSC).

“We’re trying to make the I3 Consortium a big tent,” said assistant professor at the USC Marshall School of Business’s Institute for Communication Technology Management (CTM) Jerry Power, who serves as executive director of the consortium. “Los Angeles is a founding member, but we’re talking to other cities and vendors. We want lots of people to participate in the process, whether a start-up or a super-large corporation.”

As of now, there are 24 members of the consortium, including USC’s Viterbi School of Engineering and Marshall School of Business. And companies are contributing resources. Oracle’s Startup for Higher Education program, for example, is providing US\$75,000 per year in cloud infrastructure services to support the I3 Consortium’s first three years of development work.

The I3 Consortium needs a lot of computing power. The consortium allows the cities to move beyond data silos where information is confined to individual departments, such as transportation and sanitation, to one where data flows among departments, can be more easily managed and also lets cities use data contributions from residents or even other governmental or commercial data providers. That information is consolidated into a

city’s data lake that can be accessed by AI-powered applications across departments.

The I3 Consortium will provide a vehicle to manage the data flow into the data lake, explained Cyrus Shahabi, a professor at USC’s Viterbi School of Engineering and director of its Integrated Media Systems Center (IMSC). IMSC is using Oracle Cloud credits to create advanced computation applications that apply vast amounts of processing needed to train AI-based, deep learning neural networks and use real-time I3-driven data lakes to recognise issues, such as graffiti or garbage, that drive action.

IMSC is developing a suite of open source software that can run in the cloud or in a city’s own data centres. The code and documentation will provide the base needed for cities, states or even large university campuses to create data lakes and invent new applications of IoT technology. Initially, IMSC is focusing on collecting and analysing images from still and video cameras.

IMSC’s software will be ported to I3 as a data broker, which will ingest streams of camera information, using deep learning to label the data (such as ‘area with graffiti’) in the cloud and make that data available to other applications through I3. The data will also contain valuable metadata, such as the GPS location of the camera, the direction the camera was facing and the image’s environment, such as urban, suburban, rural, parkland or wilderness — all of which are possible in Los Angeles’ 1300-plus square kilometres.

“Labelling is the part that’s very computational-intensive,” he said, “and in a streaming environment, it’s difficult to do this labelling in real time. That’s where the Oracle Cloud credit is very useful. It significantly improved the speed at which we can train the machine-learning systems to efficiently perform the data-intensive classifications so we can do labelling very quickly.”

The I3 research is important because it is “taking us closer to the reality of an IoT-enabled smart city ecosystem”, said Oracle Group Vice President Patrick Mungovan. And the research could be applied in the future well beyond municipalities to other connected community efforts, Mungovan said.

Power sees many future applications of the I3 Consortium’s work, some of which are in development with the City of Los Angeles. One system in the works could integrate video feeds from city-owned and private car parks and parking structures, and work with a mobile app to guide drivers directly to open spaces. Another project would rapidly spot and classify fires burning within the city.

The fire use case is very complex, as it requires accurately understanding whether a fire poses a real danger: The Los Angeles Fire Department doesn’t want to miss uncontrolled fires, but it doesn’t want to deploy trucks and firefighters for false alarms or controlled burns. That’s where the AI comes in, plus USC’s own computer scientists, who are always on the lookout for really tough problems to solve. “We may put in our own resources because fire classification is a challenging research project,” Shahabi said.

The I3 Consortium, announced in November, is still in its formative stages, raising money, signing up partners, conducting feasibility studies and working on intellectual property agreements.

Once the foundational work is complete, the real work begins: Getting data into the data lake, processing it to add value and then using that information to drive action. “If you’re not driving action, there’s no value,” Power said. “We want lots of IoT data to go into the lake, and we want to make that data actionable. That’s our vision.”

Alan Zeichick is a senior technology editor for Oracle.

DECIPHERING CLOUD SERVICES IN THE FEDERAL GOVERNMENT

FEDERAL CLOUD SERVICES HAVE MADE HUGE STRIDES IN RECENT YEARS, BUT CHALLENGES REMAIN.

Kevin Noonan, Chief Analyst, Practice Leader for Public Sector, Ovum



Cloud services as an umbrella term continues to be one of the hot topics for government managers, but the real-life implications of cloud transition can be much more nuanced.

Recently, Ovum completed its latest in a series of surveys of cloud services in the Australian federal government, building on the results of an earlier 2015 survey. The two surveys show a clear change in the government market, as it evolves and becomes more comfortable with cloud.

Policy and planning are important ingredients in government for setting cloud direction, but these ingredients need to be supported by a strategy of cultural change within the enterprise.

The 2015 survey found that government policy was the top business driver for moving to the cloud. At first glance, this would appear to be a welcome response, indicating that government cloud policy had achieved its objective. However, more in-depth assessment revealed a very different interpretation of these results. Other survey responses in the 2015 survey showed that 'government policy' was also the highest priority business use case. Follow-up face-to-face interviews revealed a high degree of suspicion of cloud solutions. Many agencies were reluctantly moving to cloud and were doing it only because it was government policy. In 2015, the key message was about a forced march, which was lacking energy and commitment to cloud transition.

Getting on with the job

The 2018 survey clearly showed that the government marketplace had changed

considerably. While government policy still ranked high in survey responses, it was just one of many business opportunities being explored using the cloud.

Government managers were no longer focusing on whether cloud would do the job, but on how to drive and manage the transition to cloud-based solutions.

Shadow IT was also an issue that was heavily nuanced in survey responses. Many saw cloud as a way of dealing with shadow IT, because cloud-enabled IT services seem to be more agile and more responsive to changing business needs. However, there was also a darker side to shadow IT. Cloud has opened the door to a plethora of unapproved cloud solutions. During the face-to-face interviews, one business manager noted that it was possible to use non-IT funds to spin up a solution, run the solution and then spin it down, before anybody even noticed.

Cybersecurity now a strength

Cybersecurity was the area of significant change in the period between the two surveys. The 2015 survey reported significant concerns that commercial cloud offerings were not up to the job of meeting stringent government requirements. Many government managers were unconvinced. The 2018 survey reported a significant turnaround. This time, security was listed as the top reason for transitioning to the cloud. Even though there are heightened concerns about cybersecurity, cloud is now seen as part of the solution, rather than part of the problem.

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CENTRES OF ATTENTION

Jonathan Nally

HAVING CONSOLIDATED 130 DATA CENTRES DOWN TO JUST TWO, THE GovDC PROJECT IS SAVING THE NSW GOVERNMENT MILLIONS OF DOLLARS PER YEAR.

In 2013, the NSW Government began the mammoth task to consolidate 130 government data centres down to just two in the space of five years. Now complete and known as GovDC, the centres are located at Silverwater in Sydney and Unanderra in Wollongong, and are operated by Equinix on behalf of the NSW Government.

GovDC provides a range of solutions to government customers, including a

private cloud network, secure links to the public cloud, a single-sign-on service and an e-commerce platform. A Managed Services Backbone provides inter-data centre connectivity between Silverwater and Unanderra to enable geographically diverse data recovery, data migration and synchronous replication with less than a 1.3 ms delay.

By all accounts GovDC has been a great success and an exemplar of its kind. It's no wonder the project was the

global winner of the 2014 Brill Awards for Efficient IT.

To get an update on how GovDC is performing and the uses to which it is being put, we spoke with Shae Howard, Director, GovDC and Marketplace Services, Innovation and Digital Governance.

GTR: GovDC HAS BEEN A VERY BIG PROJECT. TO YOUR KNOWLEDGE, HAS SUCH AN EFFORT BEEN ATTEMPTED ELSEWHERE BEFORE?

Shae Howard: The NSW Government was the first government in Australia to have successfully implemented whole-of-government data centre reform. There has been significant interest from other state governments around the country to understand the project and its success.

GTR: HAVE ALL DEPARTMENTS AND AGENCIES NOW MIGRATED ONTO GovDC?

SH: GovDC has a presence in all 10 NSW department clusters. Some have migrated via a simple lift and shift activity, while others have reduced their footprint during the migration due to virtualisation. Smaller agencies have chosen to take all their services via the cloud.

To secure savings and ensure pre-existing leases are exited in a timely and efficient manner, two agencies have been granted extensions. These agencies are expected to finalise their migration by the end of 2019 when their current leases expire.

GTR: YOU'RE TRYING TO ENCOURAGE COUNCILS AND EDUCATIONAL INSTITUTIONS TO USE GovDC AS WELL. HOW IS THAT GOING?

SH: We are encouraging a range of public sector organisations to take advantage of the benefits of GovDC. We currently have a variety of councils and university tenants using our solutions.

GovDC is building capability designed to empower the public sector to harness

digital technologies. Our service offering has extended to not only state government but now, local and federal governments, universities, state-owned companies and NGOs.

Our services provide the public sector with a secure, reliable and affordable means to tap into the power of the cloud. Our data centres operate 24x7x365, are purpose-built, modern, reliable, energy efficient, secure and are able to grow with agency demand.

We have the only facilities in Australia to receive a Tier III operational certification from the Uptime Institute, promising 99.98% availability of services.

GTR: IS THE MARKETPLACE PROVIDING THE EXPECTED BENEFITS, AND ARE THERE PLANS TO EXPAND IT?

SH: The GovDC Marketplace was created to help NSW Government agency customers connect with providers of data centre and cloud services. Building on from this great start and the feedback we have collected from both our customers and suppliers, we are moving to the newly launched buy.nsw to improve user experience.

buy.nsw is a marketplace for cloud applications, infrastructure and hosting. The development team is working hard to add new ICT categories into the platform and increase functionality for our users.

GTR: ARE YOU ABLE TO GIVE ANY FIGURES ON COST SAVINGS FROM GovDC?

SH: Overall benefits being realised by the GovDC reform project are in excess of \$13 million per annum. As mentioned above, the data centres are certified to Uptime Institute Tier III and delivering at least 99.98% availability at each data centre. So far, uptime has been 100%.

Electricity consumption has reduced by over 40% and GovDC is rated 4.5 stars NABERS for Data Centres. This reduced consumption of electricity is saving about 13,000 tonnes of carbon

dioxide, which is equivalent to taking 2800 cars off the road.

GTR: CAN YOU SEE A TIME WHERE GovDC WILL HAVE BEEN SO SUCCESSFUL THAT YOU'LL HAVE TO VASTLY EXPAND IT?

SH: In the initial build, four data halls were constructed at Silverwater and two data halls at Unanderra. By early 2017, all space had been consumed and the NSW Government committed to expand across both sites. By December 2017, construction was complete and new tenants commenced their migration in to the expanded space.

GTR: FOR USERS, WHAT ARE SOME THE BIGGEST ADVANTAGES TO COME FROM GovDC?

SH: For tenants, the process of onboarding to GovDC is seamless and easy, as all the commercial arrangements have been put in place between the NSW Government and the data centre operator.

This is a big component for any organisation wanting to move to a new data centre space. Tenants can review their requirements with the GovDC team, sign any internal paperwork and begin their migration within days if they are ready to do so. There are no facility-related issues for them to look after and manage.

GTR: HAVE THERE BEEN ANY UNEXPECTED BENEFITS TO COME FROM GovDC?

SH: GovDC is proving to be valuable across a broad set of public sector organisations. Universities, state-owned corporations, NGOs and specialised vendors to government are expressing interest in utilising our GovDC services.

GovDC and the Marketplace will be on show at the NSW Digital Government Marketplace conference and exhibition in Sydney on 13 September. For details, go to <http://events.publicsectornetwork.co/events/nsw-government-digital-marketplace/>.

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BIG DATA'S BIGGEST OBSTACLES

Adam Beck, Executive Director, SCCANZ

LOCAL GOVERNMENTS ARE BEGINNING TO GRASP THE POTENTIAL OF DATA ANALYTICS, BUT IT IS STILL EARLY DAYS.

In 2016, global technology analyst Gartner pessimistically predicted that 60% of the world's data initiatives would fail. By the end of last year, this number had been revised up to 85%.

While it's important to fail fast, no one wants to fail often. How can local governments overcome the many obstacles they face as they become data-driven organisations?

Most councils face a similar core challenge: back-end systems. Improving those back-end systems can be stymied by the data quality and complicated by the vast array of services that any council undertakes.

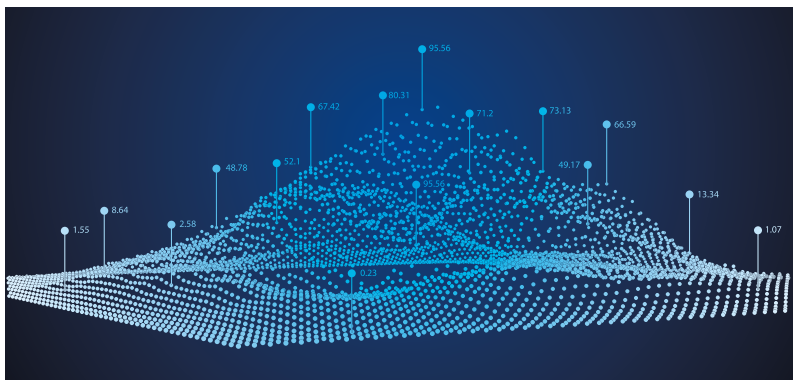
"Local governments have limited experience working with big data, since most of our traditional datasets are largely limited to the number of properties and residents," said Dr Adam Mowlam, who manages Wyndham City's Smart Cities Office.

"Traffic volumes, people movements, video analytics and social media sentiment analysis are all key big datasets which could inform policies and advocacy strategies. But without growing skills in big data and using tools such as artificial intelligence, we won't realise the full benefits."

Chris O'Connor, Manager of Digital and Data at the City of Casey in Victoria, says the first step is to address what he calls "the mechanics of data" — how to capture it, where to store it, how to refine it and how to analyse it.

"The mechanics are relatively straightforward to address, as long as you have the technical knowledge to identify the products that really solve your problems," O'Connor said.

"Straightforward doesn't mean cheap, quick and easy — it is hard to bring together data from different source systems and build central data hubs to enable analysis at scale — but >>



“Our experience so far has shown us we need to build a solid foundation of information management, and to treat information as a strategic asset.” — Darryl Ellis, Logan City Council

there are proven market solutions,” he added.

BREAKING DOWN THE SILOS

While breaking down information silos “may not be the most exciting or shiny aspect of the data world”, it is nonetheless essential, said Darryl Ellis, Logan City Council’s Business Solution Architect.

“Our experience so far has shown us we need to build a solid foundation of information management, and to treat information as a strategic asset,” he said.

Ellis and his team are working hard to “strike a balance between identifying the gaps in our information management and also delivering working prototypes of advanced analytic techniques”.

This approach, he hopes, will inspire people with the possibilities for big data, while also ensuring “knowledge transfer and a shared understanding of what is necessary from both people and processes”.

O’Connor agrees that cultural change is the hardest obstacle to overcome.

His team faces several cultural change challenges, including “building appreciation of data governance

responsibilities as a part of, rather than an addition to, one’s job” and “getting people to think outside of the service verticals and understand the benefits of data collection to other use cases”, he said.

“We are working with people to change our processes and practices, so data can be incorporated into all our decision-making. We are helping people to choose the right projects that deliver real benefits — and to prioritise useful data projects ahead of interesting projects. And we are also trying to shift perceptions of the legal framework as an enabler of data sharing and use, rather than as a blocker. But it’s all a work in progress.”

CONNECTING THE DOTS

Northern Beaches Council is collecting a large amount of data to provide better services and adapt to changing needs, according to Chief Information Officer Nathan Rogers.

Rogers says one of the greatest challenges for councils is identity verification of people who sign up for online services, and points to the work of the Australian Government’s Digital Transformation Agency as an important step forward.

“Without access to identify verification data from sites like MyGov, it’s very difficult for us to do. We see there is an opportunity to link services with state and federal agencies through a data transfer agreement. This would reduce the number of times customers have to interact with governments at all levels.

“Imagine, for example, automatically receiving a parking permit replacement when you register a new vehicle — this is what linking up services could do.”

SHRINKING THE SKILLS GAP

The local government sector is beginning to grasp the potential of data analytics, but it is early days, according to our smart cities chroniclers.

“Executive-level decision-makers are beginning to see the value of data analytics, and understand how it can unlock digital transformation programs,” said Dr Mowlam.

“But a lack of skills and experience with emerging technologies can limit innovation,” he added.

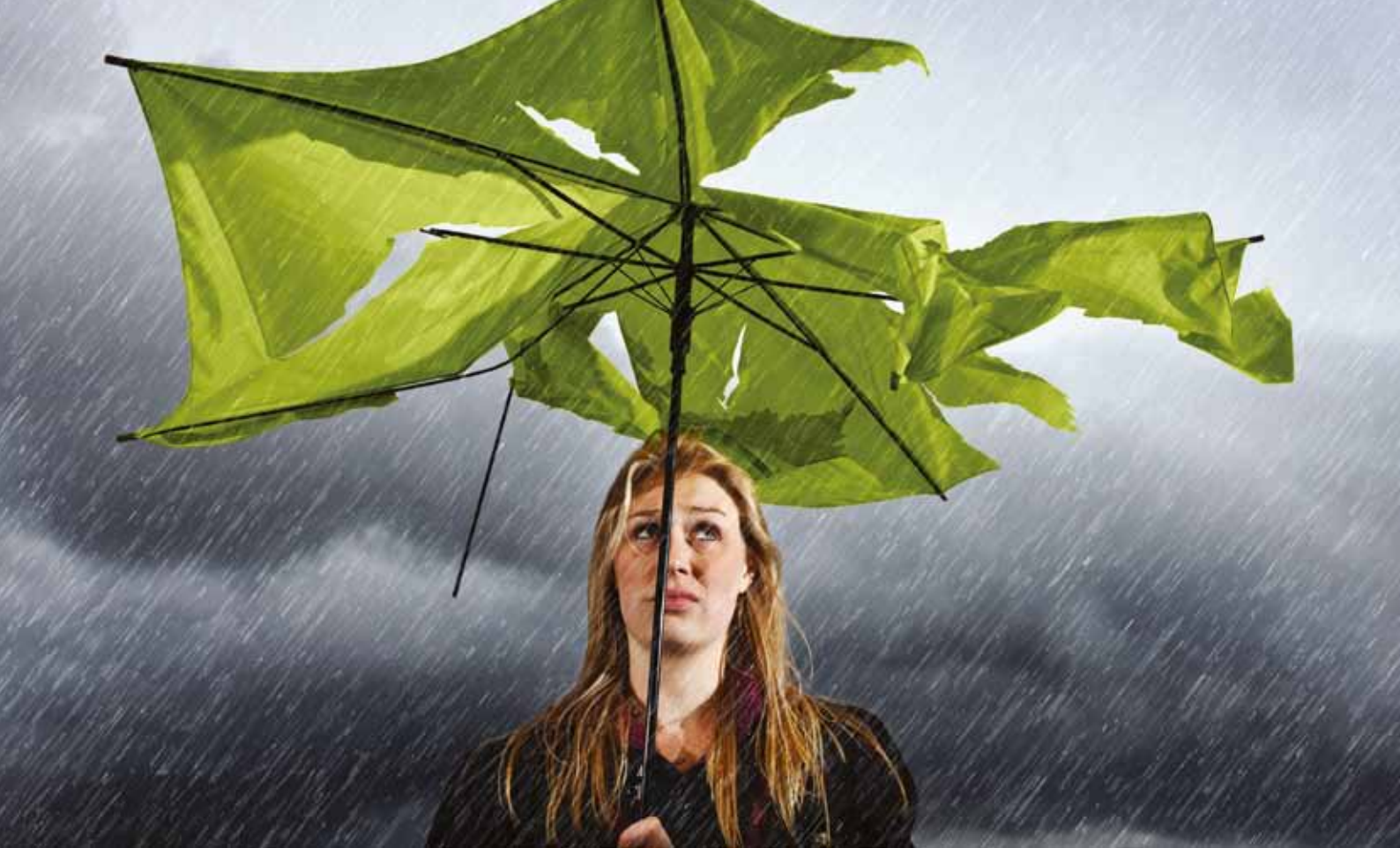
“Animal patrol, for example, may advocate for digital forms to monitor community issues related to a dog barking, whereas a basic sound sensor would be a more robust solution in terms of true digital transformation.”

We also need to grow the pool of talented data analysts. “The pay and organisational structures of local government are generally not designed to cope with the starting salaries of data experts,” said Dr Mowlam.

O’Connor agrees. The capability of the organisation across the whole value chain from collection to use is a huge challenge but “not impossible”.

The secret? “Executive support and funding to bring in or build experience, plus a willingness of the IT and information management teams to modernise systems and processes.”

First published on smartcitiescouncil.com.



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LAW ENFORCEMENT AND SECURITY AGENCIES ARE COMING TO GRIPS WITH A DELUGE OF DATA AND THE URGENT NEED FOR INTELLIGENT ANALYSIS.

It seems that every day we hear of another example of a data breach, ransomware attack, network compromise and even election tampering. The 21st-century technology that has so revolutionised our world for the better is being used against us by the bad guys. And often the bad guys seem to be winning.

So, what is the solution? Is it better technology? More good guys on the job? Better sources of data? No doubt all of those will help, but raw materials are only as good as the purpose to which they are put. And in the security world that means analysis and intelligence. That's where the solution will lie.

To learn more about the application of intelligence for law enforcement and security, we spoke with Steve Bennett (Director, Global Government Practice, SAS) and Guy Bourne (Senior Industry Consultant, SAS A/NZ) to get their expert views on the challenges ahead.

GTR: CYBERCRIMINALS AND TERRORISTS ARE JUST AS SMART AS WE ARE. WHAT CAN WE DO TO STAY ONE STEP AHEAD?

Steve Bennett: Tools and technology alone aren't sufficient to give government an edge. What makes the difference is the use of technology coupled with law enforcement and intelligence expertise and workflow. The security agencies we

MAKING INTELLIGENCE MATTER

Jonathan Nally



work with around the world resonate with this kind of approach because it empowers and augments their existing workflows and tradecraft, helping them to do what they do, better and faster. The best way for organisations to stay a step ahead is to use technology to support and enable their mission, not just install a bunch of tools.

Guy Bourne: Importantly, organisations need to understand new technologies, and how they can be used strategically by either side. It should go without saying that operational efficiencies should be in place, but often, particularly where there has been little investment in IT for long periods, we see a lot of talented analysts struggle to keep up with the accelerated pace and volume of data that needs consideration.

GTR: HOW CAN STRUCTURED AND UNSTRUCTURED DATA BE MORE EFFECTIVELY COMBINED?

SB: Most government agencies describe themselves as no longer wishing they had more data, but rather that they are drowning in data and finding it difficult to make use of it. A critically important way that agencies can take a leap forward in using more of what they have is to leverage that data just as it is. But instead of taking inordinate amounts of time to attempt to convert unstructured data into structured data in hopes that it's easier to use, advanced techniques in text analytics and artificial intelligence for the first time allow agencies to extract value from all of their data — structured, unstructured or a mixture of the two.

GTR: WHAT ARE SOME BEST PRACTICES FOR INTELLIGENCE STRATEGIES AND IMPLEMENTATIONS?

GB: Having strategic vision, and the executive support to deliver, is essential. Intelligence is a process that requires creativity and careful thought. In high-pressured environments there will always be pressure to act fast, but this needs

to be balanced with considering the information and intelligence at hand. Executive support backs up the analysts on the coalface and helps deliver quality intel products. When it comes to implementing AI and other analytical techniques, the key thing is to involve the specialist early on. We're generally talking about a huge cultural change, and the analysts will only buy in if they understand the tools.

GTR: HOW CAN ORGANISATIONS BRIDGE THE GAP BETWEEN COMING UP WITH A STRATEGY AND THEN IMPLEMENTING IT?

SB: As Peter Drucker said, "Culture eats strategy for breakfast." A strategy is necessary for success but not sufficient. Implementing a strategy for success requires the ability to convert high-level strategic goals into tightly scoped, achievable and measurable objectives — which are then used to help shape and guide the culture of the organisation. Operational staff in security agencies must buy in to the strategy and the plan for implementing it, otherwise it's just another mission statement.

GTR: ARE GOVERNMENT AGENCIES AND DEPARTMENTS SILOED WHEN IT COMES TO SECURITY INTELLIGENCE AND THREAT MITIGATION?

SB: While not universally true, unfortunately many law enforcement and security agencies in countries around the world are in fact quite 'siloed' in terms of intelligence and threat awareness. The reasons for this are varied — sometimes historical, sometimes cultural, sometimes just accidental. But it is almost always universally bad in terms of security outcomes for citizens. The solution is to apply platform approaches to data management that appropriately protect and restrict truly sensitive data while at the same time facilitating free flow and integration of other information for better integrated situational awareness.

GB: In Australia, we're seeing a strong move towards collaboration, and this makes sense. When it comes to public safety, it is simply unacceptable for a government not to be able to act when it has the information. A number of organisations are actively exploring a 'need to share' mentality, but in putting this into practice, we must consider the impact of new technologies on security policies and architectures. The Human Rights Commission has just launched a program to explore the issue.

GTR: HOW DOES SAS APPROACH THE INTELLIGENCE CHALLENGE?

GB: The marketplace for intelligence used to be split clearly into specialist search and visualisation, and analytics-driven investigations, typically used more in intelligence functions in financial services (FS). The trend in the market is that the needs of most intelligence functions — FS, government or otherwise — are converging and require both capabilities, leading to consolidated offerings. This means that a lot of vendors have had to learn how to do artificial intelligence, machine learning and even traditional statistical analysis, which isn't easy! In the government space there needs to be a conscious effort to measure the potential ethical impacts, understanding biases in the data, and how to change information collection to help modernise practices. We feel that SAS's experience in this area and our consultative approach really separates us from the competition when it comes to adopting these technologies.

SAS Institute Australia Pty Limited



Steve Bennett



Guy Bourne



ANALYTICS FOR BORDER SECURITY

Dylan Bushell-Embling

**AUSTRALIA IS
ENCOURAGING GLOBAL
GOVERNMENTS
TO EMBRACE
COLLABORATION AND
ANALYTICS TO TACKLE
DOMESTIC AND BORDER
SECURITY THREATS.**

A globally networked world requires a globally networked, data-guided approach to maintaining national security and effective border protection, according to Department of Home Affairs Secretary Michael Pezzullo.

During a presentation at Public Sector Network's 4th annual Australian Security Summit (AuSec 2018) in Canberra earlier in July, Pezzullo said that in the era of globalisation and unparalleled connectivity, traditional models of security risk are breaking down and must be completely rethought.

"The pervasiveness of networks, which is so intrinsic to globalisation, has transformed the very idea of vulnerabilities," he said.

"Connectivity and the growth of networks are outpacing national laws, rules, regulations and policies — and indeed the technical comprehension of many regulators and administrators."

Pezzullo said that cybersecurity considerations are now "infusing every consideration pertaining to critical infrastructure security, for instance, and the integrity of elections — to name but two areas".

This is posing new challenges for authorities. For example, widespread

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adoption of encrypted communication is helping to aid terrorists, drug traffickers, money launderers, child exploitation syndicates, inside traders and others in hiding their illicit activities.

“Now, is that an argument not to have encrypted communications? No, it is not. But is it an argument to rethink how we access communications? Yes, it is.”

Meanwhile, governments must consider transforming their law enforcement and national security practices to encourage greater collaboration between nations to tackle serious threats such as organised crime.

“Our strategy for dealing with transnational, serious and organised crime, for instance, will need to increasingly look like the global counterterrorism campaign. Where intelligence-led disruption and control strategies ... all have to be in the lead,” Pezzullo said.

“We certainly need to rethink the paradigm that domestic security and law enforcement can be exclusively executed within national jurisdictions.”

But compared to defence and intelligence collaborations such as Australia’s involvement in the Five Eyes initiative, policymakers have not yet commenced the journey of closer collaboration in the domestic security space, with the notable exception of counterterrorism.

Pezzullo said the government plans to seek to rectify this when it hosts the Five Country Ministerial meeting of interior and homeland security ministers at the end of August.

Technological and process transformation also has a key role to play in improving national security and border protection, he added. Since the 2014–15 financial year, the Australian Government has granted an additional 1.3 million visas — representing an increase of 20% — despite the Department of Home Affairs having 200 fewer staff.

“We did this ... through smart management, new approaches and



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especially by bringing in new leaders and excellent people — with expertise in national security, case and volume management, analytics, the building of risk models and those who can develop and apply operationally deployable decision support systems,” Pezzullo said.

“Internally, we have engaged in significant business process re-engineering ... a significant increase of digital online visa lodgement processes; very significant business process automation; and self-initiated internal business improvement reviews designed to figure out where the work is best done, by whom and with which systems. We have also significantly expanded our biometrics program.”

Using data analytics, the Department of Home Affairs is also using data analytics and predictive modelling to develop improvements in areas including Australia’s visa risk assessment intelligence capability. The department estimates that this capability generated savings in the 2016–17 financial year of around \$100 million.

“We are halfway through the rolling out of that program. It was based on extensive reviews and scoping work,” Pezzullo said.

“At the same time, we built a program of enhanced structured linkages to the Australian intelligence community. No longer were we reliant on transactions around watch lists. The predictive models

actually generated leads — in many cases — in relation to prospective applicants who were on no-one’s watch lists.”

Ultimately, modernising the nation’s approach to domestic security while taking full advantage of a globally connected world will enable organisations such as the Department of Home Affairs to focus on their workforce as their best asset, Pezzullo concluded.

“Training them and exploiting their deep subject matter expertise and turning that to national advantage is key. Building systems and processes to support them to make good quality decisions is central,” he said.

“But above all, they need intelligence and data. And that ultimately means connecting your systems to the most sensitive datasets around, exploiting that data at an industrial scale and in a way that is increasingly reliant on automated analysis and assessment.”

Above all, departmental programs and activities should fit within “a coherent strategy which rethinks the networked world in which we live”, he said.

“A strategy which can reconcile that world with the reality of national systems of sovereignty, law and territorial integrity. Absent that reconciliation, all we will be doing is delivering our programs and undertaking our activities without a strategic conception of what we are doing.”



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CO-DESIGN AT THE HEART

Jonathan Nally

A MAJOR CHANGE TO TAX AND SUPER REPORTING REQUIRED CLOSE WORK BETWEEN THE AUSTRALIAN TAX OFFICE AND SERVICE PROVIDERS.

From 1 July this year, employers with 20 or more employees began reporting through Single Touch Payroll (STP) — a major change to the way employers report their tax and super information to the Australian Tax Office (ATO). To find out how the ATO worked with digital service providers (DSPs) and the wider industry to deliver this large-scale project, we spoke with Michael Karavas from the ATO's STP team.

GTR: WHAT IS SINGLE TOUCH PAYROLL ALL ABOUT?

Michael Karavas: Under STP, employers report payroll and superannuation information to the ATO at the same time they pay their employees. STP streamlines payroll reporting to the ATO by leveraging the payroll software technology that employers already use. There are three options for employers to report via STP; they can either:

- use their existing payroll software once it is updated by their software provider to enable STP reporting;
- adopt a new payroll system that is STP-enabled; or
- use a third party, such as a registered tax agent, to report through STP on their behalf.

GTR: HOW DID DIGITAL SERVICE PROVIDERS AND THEIR DEVELOPERS RESPOND TO THIS CHANGE?

MK: This was a large-scale and complex change for DSPs, yet most were able to meet the 1 July start date. We have effectively managed the transition through our deferral process — where DSPs were given the opportunity to stagger the transition of their customers to STP across their products, which has allowed them to manage this complex change.

GTR: WHAT WORKED WELL WITH THE STP PROJECT?

MK: We built a very robust co-design and engagement process with our DSP partners. This was key to ensuring that the ATO and most DSPs were STP-enabled from 1 July.

The DSP industry is diverse, made up of large multinational providers with multinational clients, through to mass-marketed providers who focus on small to medium businesses. The systems used by these DSPs also vary in terms of degrees of capability and complexity.

We had to co-design a framework that supported different business processes and products on offer. As a result, the ATO provided a choice for

DSPs around such things as timing of reporting out-of-cycle payments and how to report corrections, so they can adopt the process that best suits their products.

Co-designing STP allowed us to understand different payroll processes, be responsive to the needs of our stakeholders and work through any concerns quickly and efficiently. Based on the success of the STP model, this has become a template for other projects in the ATO that involve working with the DSP industry.

GTR: WHAT HAVE BEEN THE KEY LEARNINGS GAINED SO FAR?

MK: It can be a big step for employers to move into Standard Business Reporting (the technology we use for STP). One of the most important steps is for employers to make sure they have the right permissions in place to ensure that they can lodge an STP report. There are specific requirements around the set-up of STP and employers have needed the most assistance at this early stage. For example, we need to ensure that the employer has the right authorisations in place, and that these are recorded accurately within the ATO systems so that once the employer starts reporting with STP, we recognise that it is being lodged by an authorised representative. We've been working closely with employers and bookkeepers to streamline this process.

We have also worked closely with DSPs to effectively communicate with employers, to ensure they can access



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the right information at the right time. We will continue to work collaboratively with DSPs as we bring more employers onboard with STP.

GTR: WHAT IS THE FOCUS DURING THE TRANSITION PERIOD?

MK: The transition period for STP is staggered because it's linked to the deferral process. It allows us to see what employers are doing each time they report, and if we see errors or repeated actions which cause problems in sending and receiving the file, we can work directly with the employer to fix them. Our focus is to support employers and their DSPs and provide updated information based on what we learn throughout the transition period. We

view this as a 'test and learn' approach, and by analysing employer behaviour, we can adapt or better target our communication with employers as they transition to STP throughout the year.

GTR: HOW IS STP-ONBOARDING TRACKING?

MK: Since the start of July, we've seen steady growth in the number of employers reporting through STP with over 1000 new employers starting their reporting on some days. We expect this number to increase significantly in the coming months.

GTR: WHERE TO FROM HERE?

MK: The first year of STP is a transition year for employers with 20 or more

employees. We'll continue to work with DSPs and their clients to support them as they continue reporting or transitioning to STP. There is also a focus on bringing small businesses into STP reporting. While the legislation to extend STP to all employers is yet to pass, we're already thinking about how we can work with employers with 19 or fewer employees who can transition quite easily through their existing online or cloud-based software. We've been engaging with the industry to discuss developing products that are 'fit for purpose' for those employers who don't currently use fully functional payroll software. This obviously provides a lot of opportunity for DSPs in terms of product development.

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SCALING IN THE BALANCE

Dean Lacheca, Research Director, Gartner

GOVERNMENTS MUST REIMAGINE THEIR APPROACH TO SERVICE DEVELOPMENT AND DELIVERY AS THE EFFECTS OF DIGITAL BECOME CLEAR.



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As governments look to become leaner and more efficient, scaling personalised government services may not be counterintuitive if digital is used effectively. The alternative — investing in ad hoc digital initiatives that add a digital veneer to government — makes momentum difficult to sustain across changes in leadership or political priorities.

The social and economic benefits of governments' investment in digital solutions increases significantly when delivered at scale. To do this effectively means scaling across multiple perspectives — up, across and out.

Scaling up through all aspects of a government department delivers organisation and citizen benefits. Scaling across the silos of a local, state or federal government delivers whole-of-government (WofG) and community benefits. Scaling out into the social,

community and financial ecosystem that government supports benefits the whole community.

Scaling digital government is inherently challenging. This was highlighted in the recent federal government senate committee report on digital delivery of government services. Moving government services to digital channels as solutions to a specific problem, for example, can offer immediate benefits, but may limit the political appetite and budget for further scaling.

Large-scale programs across government struggle with a lack of community trust in governments' ability to deliver change; competing political or leadership agendas; and existing legislation, governance, accountability, risk and procurement controls.

Whether you're scaling up, across or out, all of these dimensions are interdependent, relying on common technology platforms, leadership, collaboration and governance.

According to Gartner's 2018 CIO survey, government CIOs cite culture, insufficient resources and access to talent as top barriers to scaling digital transformation.

SCALING UP

Digital government comes from humble beginnings. Early e-government programs were linked directly to efficiency and transparency, with the focus on making traditional services available through online channels.

The unfortunate consequence of these early efforts is that some government executives failed to see the benefits of digital, beyond placing citizen-facing online services on top of legacy processes. This resulted in a lack of understanding of the business drivers for digital transformation and a reluctance to commit to the level of organisational change needed.

Digital government is government that is designed and operated to create

>>



value for citizens and the community by taking advantage of data in optimising, transforming and creating services. Government organisations that are able to advance their level of digital maturity will be more successful at scaling.

Many governments already have mature digital strategies in place, which also address changes in underlying legislation. The NSW Government's digital strategy is a great example, which explicitly states that "frameworks will be established to support new legislation that is digital by design. Legislation that is fit for the digital age does not preclude emerging technology and new digital business models."

Realising the benefits of digital at scale is about using technologies to transform all aspects of the organisation. This transformation affects structures and business processes. It also changes how we work with service providers, partners, businesses and constituents.

This level of transformation requires CIOs to identify the right opportunity based on multiple forces — culture, regulation and technology. These forces can then be used as a focus for engaging the rest of the organisation and the rest of government in digital transformation.

SCALING ACROSS

While scaling up within a government organisation delivers localised benefits to both the organisation and citizens,

the real benefit of digital government can be seen when it's scaled across.

The most visible manifestation of this can be seen in state government investments in WofG portals such as Service NSW and Service Victoria or the federal government's myGov. But it is also happening behind the scenes with investment aimed at improving data sharing across government.

The focus is on how government delivers services and is implementing public policy that benefits both citizens and itself. It's about identifying the value to the citizen that digital transformation offers when it's connected across government agencies.

Scaling this way builds on the digital capabilities of individual government organisations. It can support or force a degree of transformation on slower moving departments. In some cases, it can also happen despite the lack of progress of individual government organisations.

Citizen value, government value and the digital capability to successfully deliver the desired result are the three most important forces when scaling across government.

Complexities and challenges exist in every aspect of the journey, from the technical through to financial and political. The path taken and the progress made are often shaped by politics and personal agendas.

SCALING OUT

A traditional government-centric approach focuses on government channels, with traditional ICT partners helping to build and deliver their services. Governments must reimagine their approach to service development and delivery as the implication of digital on the ecosystems they leverage, support and orchestrate manifests.

This kind of thinking can be seen in the recently published Queensland Government Digital Strategy (PDF). That government has made collaboration a priority, committing to making open data useful and usable by industry and community. It is also committed to increasing the number of Queensland start-ups and small-to-medium enterprises that are providing services to government.

Governments' ability to scale out digital government depends on their ability to build on the digital foundations established to engage and empower the ecosystems in which they operate.

By combining the capabilities and resources of ecosystem partners, government organisations can deliver operational efficiency, enable frictionless service delivery and build confidence in government services, which would be impossible to create alone. It can also prompt economic development, innovation and disruption of traditional ecosystems.

In addition, it can assist in addressing the digital divide. Specialist ecosystem partners can bridge the gap to those who can't effectively participate in a digital society through digital literacy services. It can also provide human services to help special needs groups participate in digital society.

Dean Lacheca is a Research Director at Gartner, advising public sector CIOs and technology leaders on the transition to digital government. He covers topics including digital strategy, digital workplace, open data, government case management and citizen engagement.

Featured products

Portable outdoor emergency digital signage

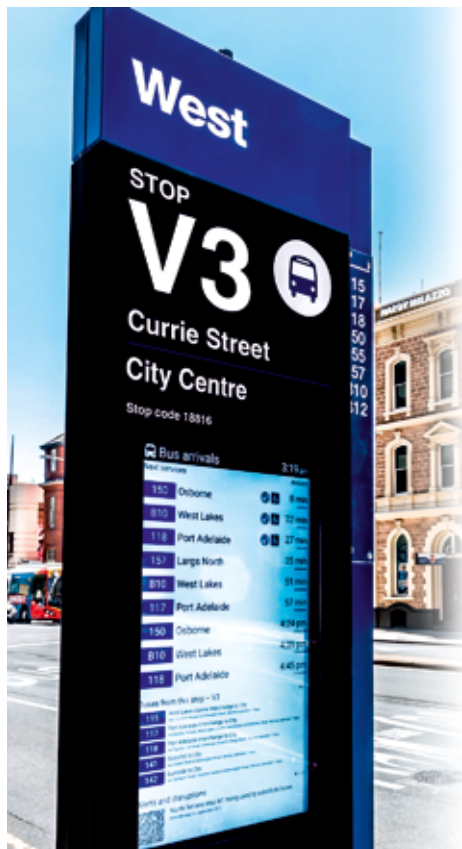
MetroSpec's Portable Outdoor Emergency Digital Signage is simple to operate. Users simply wheel it to a desired location, apply the wheel brakes, remove the lid and lift the LCD by the handles until the gas struts take over elevating it to its full height of 1.7 m. Following this, the sign will turn on and display the message. Users can also control the sign to provide real-time information from a remote location via wireless or 3G/4G.

The MetroSpec Pop Up Emergency Signage is a portable product. It can be used by transport, emergency, government and council authorities in the event of a crisis to alert the general public of danger and provide directions to safety.

The MetroSpec Portable Outdoor Emergency Digital Signage comes in a range of different screen sizes with appropriate housings as well as strong wheels and handles to ensure manoeuvrability. There is a choice of acid or lithium-ion batteries plus a range of connectivity options. It is sunlight readable and weather resistant — suitable to operate outdoors.

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NETWORK BY THE SEA

Jonathan Nally

A PARTNERSHIP BETWEEN LAKE MACQUARIE CITY COUNCIL, DANTIA AND NNNCo IS ROLLING OUT A HUGE IoT-CAPABLE NETWORK.

Lake Macquarie City Council on the NSW Central Coast is to set up an extensive long-range wide-area network (LoRaWAN) that will cover an area equivalent in size to 23 Sydney local government areas.

The project was officially launched on 9 July by the federal Minister for Urban Infrastructure and Cities, Paul Fletcher.

Peter Francis, CEO of Dantia — the economic development company of Lake Macquarie City — said the rollout of the carrier-grade LoRaWAN for the Internet of Things (IoT) will be a “game changer” for the region.

“This network is being installed to support citywide initiatives that will enable business and enterprise to drive their own IoT projects and enterprises,” said Francis.

“The scale of the Lake Macquarie City infrastructure is unprecedented. It will make Lake Macquarie the first Australian city to provide 100% commercial-grade IoT network coverage to all populated areas across the LGA, some 650 square kilometres.

“The investment in this infrastructure will create significant opportunities across Lake Macquarie City for start-ups, small and large businesses, and open pathways for Lake Macquarie council to

build new technology and innovate,” he added.

To encourage use of the network and attract business to the region, tech start-ups will be given free access and businesses and corporates will receive a 15% discount if they establish operations in Lake Macquarie City.

The council has already established partnerships with corporations such as the University of Technology Sydney, Slingshot, Ampcontrol, ResTech and Hunter Water, as well as start-ups such as Marine Connect, Liftango and BinShare, all of which are primed to use the network.

The network is commercially funded for a 20-year contract period, delivered via a partnership between Dantia, Lake Macquarie City Council and IoT provider The National Narrowband Network Co (NNNCo).

The development comes hot on the heels of the announcement of a similar network, also involving NNNCo, being rolled out by the neighbouring Newcastle City Council.

“With this sustainable, long-term approach to infrastructure delivery and the significant incentives for start-ups and businesses, we see Lake Macquarie becoming a major digital and innovation hub that will attract new organisations and jobs to the area,” said Francis.





“This is an innovative example of what can be achieved when local governments and commercial partners work together, aligned with strong, future-city building policy.”

— Paul Fletcher, Minister for Urban Infrastructure and Cities

Minister Fletcher said the IoT presents opportunities to improve productivity, livability and service delivery across many sectors.

“IoT is estimated to have the potential to add up to \$120 billion annually to the Australian economy by 2025 and Lake Macquarie is now positioned to be at the forefront of IoT network and infrastructure delivery,” the Minister said.

“This is an innovative example of what can be achieved when local governments and commercial partners work together, aligned with strong, future-city building policy.

“The Turnbull government is committed to making our suburbs and towns better places to live through initiatives such as the \$50 million Smart Cities and Suburbs Program, and it’s great to see organisations come together as they have in this case to achieve these outcomes,” Minister Fletcher said.

According to the council, NNNCo was chosen to install and operate the network based on its proven ability to deploy low-cost, low-power, carrier-grade connectivity and end-to-end IoT solutions such as water metering and street lighting.

“One of the challenges with IoT is the complexity of receiving data from lots of different devices and applications and transforming that data into knowledge that supports decision-making,” said Francis.

“Working in partnership with NNNCo, we have the means to overcome these challenges and scale to multiple applications that will make Lake Macquarie a truly Smart City.”

NNNCo founder and CEO Rob Zagarella said the network would be



a showcase for what other cities could achieve.

“We are working with Dantia and Lake Macquarie City in a true partnership model whereby we’ll be able to support businesses in the area to get their projects up and running quickly and effectively, while also enabling the city to scale important services like smart waste management,” he said.

“Smart Cities start with a carrier-grade network but equally important is the device and data platform that seamlessly converts data from many different types of devices into a common format and structure. That’s when you start creating real knowledge and outcomes that can improve the quality of life for citizens.”

The Mayor of Lake Macquarie, Councillor Kay Fraser, said the development reinforced the City’s commitment to “creating a strong digital economy and supporting innovation”.

“Through this partnership Dantia will deliver new infrastructure that will enable our City to diversify, expand our economy and create new jobs.”

BECOMING A **LEADING NATION** IN PUBLIC SERVICE DIGITISATION

**ONLY 7% OF AUSTRALASIAN
PUBLIC SECTOR
ORGANISATIONS FEEL
THEY'RE AHEAD OF GLOBAL
COUNTERPARTS ON DIGITAL
TRANSFORMATION.**

Jayant Sharma, Partner and Head of Digital,
Infosys



The Australian Government has set an ambitious goal to become one of the top three digital governments globally by 2025. But is it ready? Infosys's recent study, Infosys Digital Acceleration Study: Infosys Australia and New Zealand, reveals that 86% of leaders perceive medium-to-high levels of digital disruption within the public service and, understandably, gaining operational efficiencies (63%) is cited as the key driver behind digital transformation initiatives. As citizens become more accustomed to frictionless customer experiences in their daily interactions with businesses, there is increasing pressure for public sector organisations to meet similar expectations.

While the United Nations has lauded Australia as a leader in digital government, taking the number two spot in its E-Government Survey, local sentiment seems to differ. Our research shows that 50% of public sector leaders feel they are trailing behind their international counterparts, with a minor improvement on home ground, while 34% feel they are behind when compared to local peers. Alarming, only 7% of public service leaders believe Australia to be ahead internationally. There is no doubt that public sector organisations in Australia are still facing challenges when it comes to building disruptive models at scale, and need clarity to navigate to their next milestone to be able to continuously transform and meet citizen expectations.

The key challenges for public service organisations in this context

are building a culture of innovation and improving agility and flexibility of processes. It is worth noting that internal challenges, rather than external market forces, are cited as a key barrier to change across all sectors surveyed, suggesting that leaders need to focus on internal programs to encourage innovation and digital programs. It is no surprise then that the top initiative for public service leaders to overcome challenges is organisational level transformation (63%). This is certainly a step in the right direction; strong leadership across the entire organisation and breaking down silos are key to enabling change in the digital era.

If Australia is to truly have a global, world-class digital government, it is critical that leaders consider other elements of the digitisation journey, such as design thinking capabilities, to spark cultural change and different ways of problem solving.

Public service organisations, not dissimilar to private entities, also need to have frequent stocktakes along their digital transformation journey; this is crucial for sustained evolution. It is also important to remember that the challenge is always two-fold; access to and implementation of technology and a digitally agile culture must come together to drive success.

Ultimately, to be truly impactful, leaders must be cognisant that digital transformation is not an end state; it's a journey.

Compact I.T. gives remote communities round-the-clock confidence



A leading not-for-profit organisation in New Zealand provides emergency relief and support to the Pacific Islands through first aid, communication and disaster preparedness training.

When disaster strikes, its emergency response unit can be deployed to provide IT and communications support services on the ground. However, these technical experts are also working to build technology capability and train their Pacific Island neighbours on how to use technology and conduct basic maintenance and repairs.

Working in partnership with ServerWorks, a Christchurch-based IT services company, the not-for-profit organisation was able to design a compact IT solution to give remote communities round-the-clock confidence.

Keeping equipment alive in harsh environments

The predominant challenge facing the not-for-profit organisation and its network of Pacific Islands was the ability to maintain technology infrastructure. IT and communications were often one of the last considerations in planning despite the growing need for technical resources that ensure the day-to-day running of the organisation and telecommunications during business as usual and in times of a disaster.

With few IT personnel on the Pacific Islands, technology systems were often rundown and with many locations susceptible to sea air and sandy dust, technical equipment would degrade at a quicker rate.

This resulted in a higher risk of technology issues occurring in a disaster, causing slow communication and delayed ground assessments.

A complete, compact and durable solution

ServerWorks designed a telecommunications system called Zero Local Touch (ZLT) — a compact IT solution that holds everything from power redundancy and networking, to cybersecurity and much more. The system can be easily deployed across the not-for-profit organisation's Pacific Island network, allowing devices to stay connected wirelessly or via cable and keep communications alive during disaster recovery. To ensure design and operational longevity of the system, it was critical for ServerWorks to select the right technology to keep ZLT functioning during times of emergency, and protect it against the elements, from cyclones to extreme heat.

Eaton answered the call, supporting ServerWorks to build the Zero Local Touch system 'in a box'. It was designed and built using the Eaton SC200 monitor, Eaton cabinet fan controller, Eaton 9PX EM 2kVA UPS with 9PX BM, Eaton MBS, Eaton iPDU, Eaton surge filter, Eaton iPM software, plus aerials, modems, Fortinet and HPE networking and server equipment.

ServerWorks needed an enclosure to protect the technology against harsh environments. After evaluating a range of different products in the market, Eaton's ExoCab18 outdoor enclosure was the only product that ticked all the boxes and was readily available.

Kraig Winters, General Manager/owner at ServerWorks, said there were a lot of cabinet vendors offering to design something from scratch but none were able to meet the brief. "We needed an enclosure that required very few engineering modifications, such as extending the depth of the cabinet, and could withstand challenging environmental conditions. Immediately we saw the value in

the additional longevity we would gain from Eaton's product, which is fully covered by IP rated heat exchange," said Winters.

"With Eaton backing up the ZLT, we can expect a long lifecycle. The cabinet is built to last and will service the Pacific Islands for at least the next 10 to 20 years."

Eaton went beyond the supply of products and was available to ServerWorks every step of the design and build process — from customer support enquiries to UPS soft shutdown procedure training.

Looking to the future

After rigorous testing at ServerWorks' workshop, the ZLT solution was deployed in March to the Tonga Islands. The team will be looking at how the system can transform the way disaster recovery services are coordinated in their day-to-day operations and in times of a disaster.

"Once implemented, the solution has the scalability to meet IT demands of up to 70 staff and leveraged through a fixed line, mobile or satellite communications to stay online at a fixed location," said Winters.

"When a disaster occurs, the building may not be habitable and the ZLT can be relocated and operate for up to four hours on back-up power, to ensure the team can access data about ground zero instantly — streamlining aid deliveries from days to potentially hours.

"It is this capability that makes it possible for this solution to be rolled out and deployed across many other organisations and locations in the Pacific Islands who face identical challenges and give local teams the tools to become more resilient and self-sufficient. "As we explore new opportunities, we look forward to working with Eaton to leverage new advances in UPS technologies and enclosures."

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OUT OF THE SHADOWS

Darren Besgrove, CEO, **OneBlink**

THE RIGHT APPROACH CAN TAKE A WHITEBOARD FULL OF IDEAS AND TURN THEM INTO TRANSFORMATIONAL IT APPLICATIONS.

In Gartner's latest mobile apps survey, Adrian Leow, a Research Director, noted that "employees increasingly have the autonomy to choose the devices, apps and even the processes with which to complete a task. This will place an increasing amount of pressure on IT to develop a larger variety of mobile apps in shorter time frames."

Many organisations are already seeing their users turn to often unsanctioned 'shadow IT' projects to give them the productivity gains they want right now... because their IT

departments can't deliver the solutions they want in good time.

At OneBlink, we believe the challenge is to deal with this in a way that enables you to better service the app delivery needs of your users without backing yourself into an app development 'dead end,' whilst also giving your development team a turbo boost to increase its velocity.

HEADING OFF THE SPECTRE

Shadow IT is happening everywhere and government is not immune. Software-as-a-service makes it almost too easy for business users to build their own solutions using off-the-shelf services. IT departments are rightly worried about the consequences of these 'pop-up apps' proliferating without the benefit of oversight in terms of compliance and support.

As an IT professional it's likely you're concerned about the security risks for your agency of an uncoordinated strategy where addressing vulnerabilities becomes an increasingly piecemeal process. You don't want your agency to build up an unmanageable burden of authentication and data security. And you don't want your users investing time and resources in dead end 'walled garden' solutions, using services or applications that your developers can't take forward and integrate into your corporate systems.

What you do want is to champion an environment in which users can turn a whiteboard full of ideas into demonstrable prototypes or viable initial solutions, and then work with their IT colleagues to develop those into transformational applications.

In other words you want your users to be able to create a working 'version 1.0', knowing that your developers can create a properly integrated 'version 2.0' without throwing out the previous work.

Unfortunately, many of the well-known 'point and click' or WYSIWYG tools with which users can develop

As the push for digital government intensifies, what many agencies really need is a scalable succession path for developing apps.

simple applications aren't open systems that produce code that a development team can take forward. They maintain their simplicity by operating within a 'closed loop' box. This may well be appropriate for simple, self-contained apps for a particular function, but when the need is there to secure the app into the corporate environment, extend functionality and integrate it into the corporate systems, developers are usually having to ignore all this early work and start again from scratch.

On the IT side there are services such as MADPs or RMADs that accelerate app development. But these are generally aimed at developers and IT professionals, not your business analyst, project manager or 'crafty' tech-savvy business user who wants to run up a 'version 1.0' of an app to validate and field test business value. Because each tool set targets a user skill set, the result is a siloed effect wherein organisations aren't able to scale solutions and extract maximum value from the original effort.

When researching OneBlink's primary customer base of local and state government agencies, the results show that these silos are the single biggest barrier between app demand and app delivery — evidenced by an organisation's app backlog, unfulfilled projects, latent opportunities and an influx of shadow IT.

DEVELOPERS NEED HELP, TOO

Increasing app delivery velocity isn't just about getting business-level users to be part of reducing that backlog — developers need tools that help them become more productive, too.

Whilst splitting the load will make a significant difference, it's important to remove many development friction points, but not in a prescriptive way

(developers hate being locked in).

Developers can benefit from modules for implementing offline queues, uploading large objects across the network efficiently, dealing with intermittent connections and so on, which have the capacity to lockup development teams for considerable periods.

SIMPLE MEANS SIMPLE

As the push for digital government intensifies, what many agencies really need is a scalable succession path for developing apps, one that enables non-technical employees to build, test, deploy and measure the effectiveness of the apps they think they need and, through that process, identify those of real value that developers can enhance as required.

Business users and their managers want tools they can use immediately, without training or technical support. They want to be self-sufficient quickly and provide value speedily. And while they may not realise it, they will benefit from apps that can be taken to a 'version 2.0' by developers who are able to extend functionality and integrate them into corporate systems.

The key to scalable development is being able to take an app that the business has already shown has value, and do more with it — widening the capability of the app, providing better security, creating more sophisticated offline access and enabling integration with internal systems.

This concept of a single tool chain, equally serving the needs of business users and their IT departments, is a very new concept but one that is gathering momentum, particularly in government where the app backlog remains a major challenge and the political pressures to digitally transform are immense.

THE CASE FOR GENDER EQUALITY IS CLEAR

IDEAS FOR FURTHERING
EQUALITY IN GOVERNMENT
WERE SHARED AT THE 'WOMEN
IN LEADERSHIP' SYMPOSIUM.



Is gender equality still an issue for women in Australia? According to Virginia Haussegger AM, Director of the 50/50 by 2030 Foundation, there is no doubt about it. In her opening remarks at Public Sector Network's recent 'Women in Leadership' symposium, she stressed the need to keep pushing for change.

"We tend to think that Australia is doing ok, but in fact, we are still facing major problems with gender equality. Comparing ourselves to the rest of the world should set off the alarm bells," she said.

The keynote speaker, Her Excellency Menna Rawlings, British High Commissioner, acknowledged the progress to date, but was equally unequivocal about the need to keep demanding more. With a firm focus on practical steps for moving forward, she noted the importance of creating policies that support women, breaking down the hierarchical cultures that still exist in many public sector organisations in both Australia and the UK, and sharing both the joys and the burdens of parenthood equally.

In terms of institutional measures, her stance was clear. "Targets are an absolutely minimum, because what gets measured, gets done," Rawlings said.

However, she also recognised her own role in improving the situation. "As leaders, we really need to challenge ourselves and ask, what can we do to remove some of those barriers," she added.

After such a stellar start to the day, the audience was busting for more, and the 'One on one' conversation with Her Excellency Unni Kløvstad, Norwegian Ambassador, and Virginia Haussegger AM did not disappoint.

A global leader for gender equality, the key question for the discussion was 'How has Norway done it?'

Norway's successes in promoting diversity, as it turns out, are no accident. Since the 1970s, Norwegian governments have implemented policies to promote female participation in the workforce by providing generous paid parental leave and affordable child care. Gender diversity is also seen as crucial for sound government.

"By the late 80s, early 90s, it was almost impossible for political parties to not nominate 50% women. It was simply considered bad practice," Kløvstad said.

When asked about how they got to that point, Kløvstad pointed to the different societal norms. "We have this tradition of both expecting and accepting a higher degree of

government intervention in order to steer development. And in this case it was obvious that we wanted a more gender-equal society."

Such cultural expectations also helped with the implementation of quotas, which have been instrumental in bringing about the rapid change. "In 2003 before the quota law, women comprised 7% of publicly listed and publicly owned companies. Now it's above 40%."

When Haussegger recounted some of the recent media commentary in Australia, which had argued that diversity quotas elevate women to positions they are not qualified for, and thus lead to corporate failures, Kløvstad was quick to point out that based on their experiences, nothing could be further from the truth.

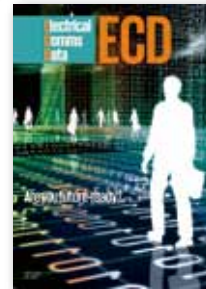
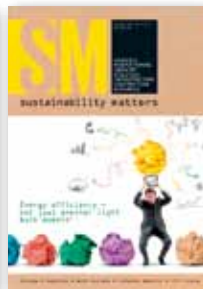
"We have seen that the boards now function better than before, they make better decisions than before. And the reason for that is that women tend to be better prepared. They read the documents before the meetings, and they ask more critical questions," she said. "And consequently the men started doing the same. The business case is clear. Having more women on boards leads to better results. It also raises the calibre of men."

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