

Q1 2019 PP100021607 **FORGET TRANSFORMATION** OPTIMISATION IS KEY

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INSIDE

FEATURES

6 | City deals



City deal initiatives are spreading across the land, with Darwin and South East Queensland joining the smart communities revolution.

17 | The future of transport



Federal, state and local governments are preparing for the technology-enabled future of transport in the nation.

29 | The ins and outs of My Health Record



Canberra insists the 9.9% my Health Record opt-out rate is squarely in line with expectations, but Labor is unimpressed.

34 | Connecting agencies with tech talent



The federal government's digital marketplace portal is helping agencies at all levels more easily access digital talent.

37 | Code for smart communities



A new standard of practice for smart community projects has emerged from engagement with industry and government.

48 | Prevention is better than cure



Understanding the technologies used by cybercriminals is the first step to preventing a devastating cyber attack.

- 10 | Learning curve
- 12 | An integrated approach to infrastructure
- 14 | Defence deployment
- 20 | Embracing the wireless internet of things
- 23 | Optimisation vs transformation
- 32 | Foundations for a data-driven future
- 40 | New Zealand's digital vision
- 43 | Auscert's new image and website
- 44 | Protecting tomorrow's critical infrastructure
- 50 | The I.T. implications of changes in government





Insider

Transforming the workforce and government

As I write this we have just celebrated International Women's Day, which has reminded us that there's still a long way to go to achieve equality and parity, particularly in the ICT field. It's more important than ever that the ICT sector gain the benefit of the experience, wisdom and insights of the entire human race, not just half of it. *GovTech Review* supports and endorses efforts to encourage more women to enter and stay in the ICT sector, and to see them reach their rightful place in the top ranks of leadership.

We're delighted to feature an interview in this issue with Liana Downey, Executive Director—Delivery in the NSW Department of Education. The story of her journey through the private and public sector to become a senior executive in the NSW Government is a fascinating one — clearly, she brings a breadth of both private and public sector experience with her. She's not Robinson Crusoe when it comes to this, of course, but the point is that we would all like to see more women being able to emulate her journey, and that means breaking down barriers and removing obstacles that stand in the way.

Are you involved with a digital transformation program in your department or agency? Do you feel that the program is on the right track and tackling the real issues? If you don't, perhaps it's because the project has the wrong emphasis. As Gartner's Dean Lacheca explains in this issue, maybe it's optimisation we should be aiming for, not transformation. It's an interesting perspective that probably solidifies what many in government ICT have come to realise. Putting 'optimisation versus transformation' into words helps to strengthen the insight. Reducing reliance on the somewhat stale 'transformation' buzzword could prove beneficial to government IT leaders who feel pressured to deliver transformation just for the sake of it, as if it's the be all and end all of digital delivery. It's certainly worth considering.

And speaking of digital delivery, what is your opinion of the My Health Record saga? It has been up and running for years now, of course, but has been in the headlines for the past nine months or so due to the cut-off date for voluntary sign-up. Are you concerned about security? Do you think the system is safe enough? Do you think it will provide the promised benefits? I'd be delighted to hear your views. Please email me at the address below.

Jonathan Nally, Editor editor@govtechreview.com.au

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CITY DEALS

Dylan Bushell-Embling

THE FEDERAL GOVERNMENT'S CITY DEAL INITIATIVES ARE SPREADING ACROSS THE LAND, WITH DARWIN AND SOUTH EAST QUEENSLAND THE LATEST TO JOIN THE SMART COMMUNITIES REVOLUTION.

he smart city revolution is being expanded to more Australian cities, with Darwin set to deploy a number of new and expanded technologies as part of a City Deal agreement with Canberra, and negotiations underway for another City Deal in South East Queensland.

Starting at the top of the country, the federal and Northern Territory governments and the City of Darwin have announced the \$10 million Switching on Darwin strategy, which involves the rollout of smart technologies across the city by May 2019.

Half of the project's \$10 million budget will be provided by the federal government, with the territory government and the city itself splitting the remaining \$5 million expenditure equally.

The investment will include the deployment of technologies such as sensors for monitoring vehicle and pedestrian movement, CCTV upgrades, an extended city Wi-Fi

network and a new micro-climate monitoring system.

As part of the project, Telstra has been appointed to deliver a suite of smart technologies in the city centre such as LED smart lighting, smart parking, Wi-Fi, CCTV and video analytics. The company has already commenced the installation of smart sensor LED lighting at Bicentennial Park.

The project is aimed at promoting sustainability, delivering more efficient council services and helping curb antisocial behaviour.

More than 900 new LED lights will be installed within the City of Darwin's boundaries. Each light will can be individually dimmed or brightened remotely, either programmatically or on an ad hoc basis.

The lights will sense changes to light levels and brighten or dim as required, and will have the potential to be adjusted at the request of police to help deter crime or brighten the area for an event. As well as the smart street lighting functionality, the upgrade is expected to reduce energy

consumption per light by around half by switching from 80-watt conventional bulbs to 45-watt LEDs.

The project will also include an expansion of the city's free Wi-Fi network to other high-traffic areas, provided by Telstra Air, as well as more CCTV surveillance cameras that will stream live video to NT Police's monitoring area.

Besides increasing public safety, data from the cameras will be used to monitor vehicle and pedestrian movement data for improved city planning.

Likewise, a network of 24 sensors will be deployed around the city to monitor factors including humidity, rain levels and other weather data, CO_2 , dust and and air pollution levels, and noise levels. Data from the sensors will be used for improved planning and service delivery. The data will also be made available at no charge to organisations on request, with key data published on the City of Darwin website.

The Switching on Darwin strategy forms part of the \$200 million Darwin >>>

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Smart communities

City Deal between the federal, territory and local governments.

The City Deal will also involve initiatives including constructing a new education and civic precinct that will have as its centrepiece a new city campus for Charles Darwin University, and using thermal imaging and drone aerial monitoring to map the city's hottest areas so that heat mitigation technologies can be deployed.

The initiative is also a key component of the City of Darwin's #SmartDarwin Strategy, through which the council is seeking to transform Darwin into a digital and data-enabled city.

The strategy envisions the adoption of a wide range of new technologies over the next three years. During the first phase ending this year, this will include video analytics for captured CCTV video, the deployment of an open data platform, automatic water and gas leak detection, and the use of device proximity and location insight technologies for improved urban planning.

More long-term initiatives will include the deployment of a smart digital kiosk providing council information and interaction, a mobile app for providing location-based council information and feeding back analytic data to the city, and the adoption of power consumption and public inventory monitoring technologies.

The strategy also includes a number of smart transport initiatives. These involve the introduction of automated optimisation of traffic flows based on demand, the use of GPS to track and report public transport positioning in real time and the deployment of vehicle fleet communications to enable tracking, usage monitoring and theft protection of publicly owned vehicles.

Finally, the strategy calls for the council to monitor emerging trends in order to identify areas for future technology-based transformation. Potential examples listed in the

"Telstra has been appointed to deliver a suite of smart technologies in the city centre such as LED smart lighting, smart parking, Wi-Fi, CCTV and video analytics."

strategy include the use of drones to autonomously deliver goods, act as first responders during emergencies, survey development areas and assist in providing maintenance services on public assets.

Other potential areas of interest include the deployment of autonomous vehicles, the provision of augmented reality headsets that will provide location-based information for tourists and council workers, and the use of cameras and sensors to monitor road quality to enable preventive maintenance.

South East Queensland

Meanwhile, the federal government is working with the Queensland Government and South East Queensland local councils to develop a city deal for this region as well.

In February, the Queensland
Government and the Council of Mayors
SEQ published a proposal designed
to act as a blueprint for the proposed
city deal. The TransformingSEQ report
identifies 35 opportunities that could
be considered in negotiations for a
city deal.

These include six "transformational" opportunities, which cover areas including establishing innovation precincts to develop a culture of innovation and entrepreneurship.

Another transformational opportunity involves leveraging the \$35 million Sunshine Coast International Broadband Submarine Cable. The new subsea internet cable is being deployed by the Sunshine Coast Council and RTI Connectivity, and has been designed to

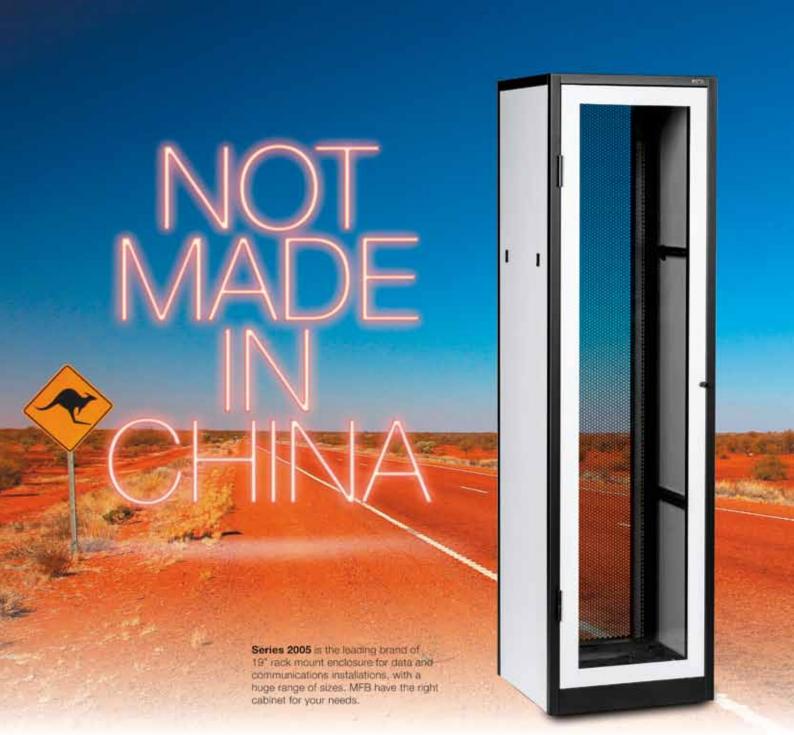
deliver Australia's fastest connection to Asia and second fastest to the US when it comes online in 2020.

The proposal involves leveraging this new infrastructure to deliver a digital trade hub aimed at establishing the region as a key centre for the data protection, blockchain and cybersecurity segments, while encouraging further investment in R&D for future technologies.

Other proposed digital initiatives include establishing a region-wide sensor network and accompanying data analytics platform to enable real-time decision-making, pursuing opportunities to transform South East Queensland as a leading region for the adoption of 5G mobile technology, and making efforts to reduce red tape to foster the development of SMEs in the region.

The report also recommends developing a South East Queensland Digital Twin, which would act as a dynamic 3D representation of the region based on currently disparate spatial data. The Digital Twin would enable both government and industry to better plan, manage and integrate infrastructure projects and spatial activities.

Finally, the report proposes that the City Deal could provide an impetus for all levels of government to create a more agile regulatory environment that encourages innovation, and suggests the development of a prospectus for a plan to transform the region into a testbed for digital technologies and applications including drones and robotics.





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LEARNING CURVE



GOVERNMENT EXECUTIVE, CONSULTANT AND AUTHOR LIANA DOWNEY SHARES HER EXPERIENCES OF WORKING ON CHALLENGING PUBLIC SECTOR PROJECTS.

iana Downey, currently
Executive Director – Delivery
with the NSW Department
of Education, has worked
in strategy for most of her
career. She began in the non-profit
space and then worked as a strategic
consultant at McKinsey for 10 years, where
she helped establish the public-sector
practice. She then joined the (then) NSW
Premier's Delivery Unit, leading work on
crime reduction strategies and red-tape
reduction for police and education, and
also acted as a special advisor to the
Department of Prime Minister and Cabinet.

For seven years, Downey ran a boutique advisory firm specialising in strategic advice for non-profits and government organisations, with clients in Australia and in New York. She also taught leadership at New York University, wrote *Mission Control* — a book on strategy and delivery for governments and non-profits — and served as a board director.

In this interview, we find out what she's working on now and learn her philosophy for success in government service.

WHAT DOES YOUR CURRENT ROLE ENTAIL?

I have been at the NSW Department of Education now for a little over a year,

where the role and work has grown over that time. My current role involves helping the Department drive improved student outcomes through setting clear objectives, and supporting those with the right resources and routines to support impact. I also have carriage for the communications, policy, governance and strategy portfolios, as well as being responsible for a number of complex cross-departmental projects ... including our disability strategy, our human capital management program, the reform of our staffing approach and reducing the administrative burden in schools.

CAN YOU DESCRIBE A PROJECT YOU ARE WORKING ON AND THE KEY CHALLENGES YOU HAVE FACED?

One of the projects we are working on is to reduce the administrative burden on schools. When I first started, we were a very small team, and we used our early time to talk to and visit as many schools as we could, asking principals, "If the Department could do one thing better to help improve student outcomes, what would be it be?" One of the very common answers was the need for the Department to become better at coordinating and

prioritising the rolling out of systems designed to support schools.

In addition to a lot of listening, the very first thing we did was to bring the project owners and the end users together — to build empathy and understanding and do some joint problem-solving. We did a lot of planning and set-up, and ultimately had two days of great, open and powerful conversations, which helped project owners understand the complexity and volume of change we were drawing out.

We did this because we felt it would be easier if people could hear this first-hand from schools. So we put up a big picture — we called it our 'traffic control map' — of all the things planned for rollout and let the principals share their reactions. It was really powerful for people to hear first-hand about how daunted and overwhelmed they felt.

When I first joined the Department, I asked for the central source of truth on what the Department was rolling out, and there wasn't one. I tasked one of my very intrepid directors with developing the traffic control map and it continues to be one of the most powerful pieces of work we have done.

Even in that time we were able to solve some pain points for people, had





real quick wins, with a phone call on the day to stop some major irritants — it shows the power of having people in the same room.

Overall, we set ourselves three tasks:

- Address the imminent project rollouts and identify potential collusion.
- Improve the projects rolling out (and connection to schools).
- Work on our governance to shift the culture and approach to do a better job of coordinating and rolling out change.

The last one is, of course, the toughest one and it is still ongoing. We benefited from reaching out to a wide array of organisations to learn from their experience, both in the public and private sectors. We probably learned the most from the Bank of Canada, Woolworths and Officeworks about how they addressed very similar challenges of rolling out way too many changes for their field staff.

One challenge we all had is that, of course, every project owner wants their project to go forward (and first). But if you do everything, without coordinating, it is just too much — some of the principals we spoke to were in tears. We needed to help schools make better choices and help them to prioritise. It was a bit

hard because we were coming in on the middle of many of these projects, but things are really starting to shift. We try to make sure the positive feedback gets back to the project owners who are working hard to adapt and prioritise.

WHAT DID YOU LEARN FROM THIS PROJECT?

One of the things we learned the hard way, was not to assume that information shared with senior people is filtering down the chain and getting to everyone — the NSW Teachers Federation told us that even the good news wasn't always cascading down. We've had to think much more broadly about mass-communication strategies. Even though I know it to be true, it's a good reminder — you can never over-communicate.

The other thing we knew, but worked hard to keep in our sights, is that this is not 'us' running this project, but rather us working with many, many stakeholders across the Department to help them run the most effective, impactful projects they can. [And] staying clear on the idea that every single one of our colleagues is passionately committed to helping improve student outcomes. This meant we had to think about what is making it harder for them to do that effectively,

and what roadblocks can we remove. We also have to stay vigilant to make sure that, in trying to help, we are not getting in the way.

WHAT'S YOUR ADVICE FOR SOMEONE LOOKING TO FURTHER THEIR CAREER IN GOVERNMENT?

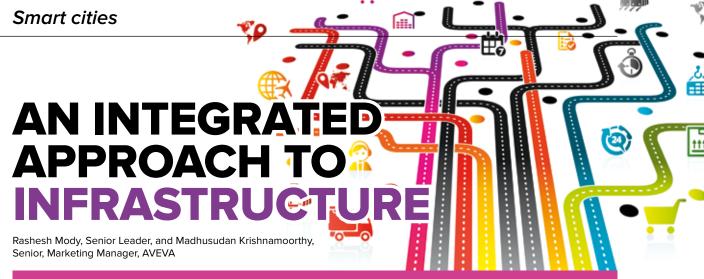
Get some experience outside of and across government. Otherwise you don't know what you don't know. I have benefited greatly from moving around and working across organisations — the most successful leaders I've seen in any sector are always looking to steal the best ideas from everywhere and anywhere!

WHAT ARE YOU MOST LOOKING FORWARD TO ABOUT THE PUBLIC SECTOR INNOVATION SHOW 2019?

I can't wait to meet other passionate public sector colleagues, learn more about what other people are working on and benefit from other people's experiences and wisdom.

The Public Sector Innovation
Show will be held on 26 March at
the National Convention Centre,
Canberra. Full details of the program
and registration are available at
events.publicsectornetwork.co

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A TRANSFORMATIVE 'SYSTEM OF SYSTEMS' APPROACH SUPPORTS CENTRALISED CONTROL TO INCREASE VISIBILITY AND IMPROVE DECISION-MAKING.

ith increasing urbanisation, mounting cost pressures and the demand for improved quality of life, there is now a global move towards infrastructure consolidation, upgrade and continuous improvement. Many cities have old and ageing infrastructure with high replacement costs. Converting existing infrastructure to 'smart infrastructure' is the key to improving cities, and it is directly correlated with quality-of-life improvements.

Some of the drivers for smart city initiatives include:

- Multiple IT/OT systems supplied by various vendors and the need to connect and exchange information between them.
- · Increased use of public transit.
- The need for increased visibility of building plans, eg, to help firefighters mitigate losses.
- Smarter buildings for reducing energy consumption.
- The need for better traffic management to reduce congestion and improve emergency response.
 For smart cities to be efficient,

they must be able to connect, collect, analyse and act from disparate data sources. There are three main parts to that job: collecting, communicating and 'crunching'.

First, a smart city connects and collects information about itself through sensors, other devices and existing systems. Next, it communicates that data using wired or wireless networks. Third, it 'crunches' (analyses) that data to understand what is happening now, what is likely to happen next, and finally it must act based on this intelligence.

A transformative approach to this spans various applications, including facilities management, utilities, telecommunication, transportation, health and e-governance. The most effective approach, then, is to not just connect all these disparate functions, but to collect, analyse and then act with a unified and holistic intelligence with the help of real-time data.

The objective is to enable city leaders to better serve citizens and businesses. A command and control centre based on an integrative, 'system of systems' approach can be used to leverage information from various data sources to anticipate and resolve problems even before they are presented, coordinate various resources and processes to operate seamlessly, and generally make more strategic decisions.

Technology is the powerful unifying asset, as it can provide a truly holistic

approach to unifying disparate and complex systems and data challenges. It provides a centralised infrastructure that supports operations and customer information systems across the entire value chain. Combining information technology and operational technology, and having a system that communicates effectively, results in:

- Reduced total cost of ownership through better system integration and by leveraging investments already made in systems and applications.
- Improved asset utilisation and availability of assets with minimal downtime, as well as improved predictability of asset maintenance.
- Lower implementation costs with hardware-agnostic, unified platforms. AVEVA recommends implementing a robust platform that integrates enterprise and control applications with advanced real-time monitoring, and which integrates existing systems through a system-of-systems approach that provides: a hardware-agnostic platform for centralised control and device system connectivity; asset performance monitoring, predictive maintenance capabilities and asset life maximisation; and enhanced workforce collaboration with real-time control and monitoring

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DEFENCE DEPLOYMENT

THE DEPARTMENT OF DEFENCE TURNED TO DXC AND FOXCONN FOR ONE OF THE LARGEST I.T. ASSET DEPLOYMENT PROJECTS EVER UNDERTAKEN IN AUSTRALIA.

he Department of Defence recently undertook a complete desktop hardware, operating system and application refresh/upgrade across its desktop fleet, encompassing more than 110,000 machines. This was in direct response to the Department's need to modernise its desktop environment to meet operational, compatibility and security postures, not available from its aged fleet.

The result has enabled the Department to standardise its desktop fleet and ICT environment to a small number of devices and make significant savings through supporting a smaller number of hardware platforms within the environment.

On behalf of the deployment contractor, DXC Technology, Foxconn Australia ran, controlled and managed the inbound tracking, standard operating environment (SOE) and imaging and outbound packaging for over 110,000 desktop PCs and workstations using Dell and Hewlett Packard hardware.

Foxconn Australia (foxconnaustralia. com.au), a subsidiary of the world's largest electronics manufacturer, has operated Australia's largest computer assembly facility for more than 15 years. The facility at Rydalmere in Sydney has 10,000 square metres of warehouse, manufacturing and pre-staging space

with capacity to process over 50,000 devices per month, all of which go through a testing and quality assurance process before being shipped. The company is accredited under ISO 9001 (Quality Systems) and ISO 14001 (Environmental Systems).

Due to security constraints,

Foxconn leveraged the solutions it has developed and runs day-to-day in its factory and worked with Commonwealth representatives to install a similar, yet scalable capability on-premise at Defence in Canberra. The overall approach taken was very different to the traditional model used for desktop SOE imaging and building and yielded an efficient solution for the Department.

The savings actually achieved are not quantifiable; however, they are significant due to removal of impacts on either the project time frame (110,000-plus units in 10 months of build) or the underlying ICT network, which would have required movement of huge amounts of data across wide-area and remote-connectivity links if a desktop-based build had been implemented.

Foxconn personnel worked closely with Commonwealth representatives throughout the design, implementation and operational phase of the project. In addition, the on-premise facility has been left behind for the Commonwealth to distribute and leverage as an

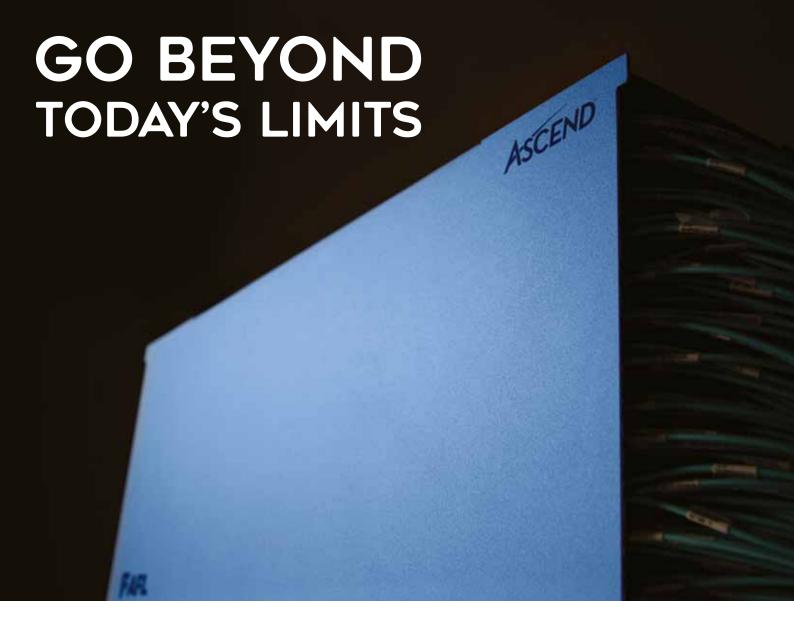
ongoing capability well into the future.

The scalability, fit-for-purpose approach, sustainability of the solution and ability to transition to business as usual post-project, were all primary considerations taken into account by Foxconn in conjunction with Commonwealth representatives and DXC.

"Foxconn provided a key element of the supply chain for the largest asset deployment project (by volume) undertaken in Australia by DXC. They were involved from the design phase as a key partner in preparing our commercial submission, and completed the implementation of the build centre on time and on budget," said Michael Wagner, Solutions Architect for DXC.

"They then met the daily and monthly build targets consistently as required by the project, which required a just-in-time approach to minimise cost by eliminating double handling and reducing storage requirements," added Wagner.

"The Foxconn and DXC partnership was highly successful in delivering on its commitments to Defence," said Patrick Collins, Foxconn Director of Operations. "The people, systems and processes employed during the course of the rollout ensured predictability and flexibility. The results could not have been achieved without the excellent teamwork demonstrated by all parties involved in the project."



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he 13th annual Technology in Government Expo is the nation's largest gathering for federal and state government ICT leaders. For over 2000 attendees, this is the perfect place to gather information and build relationships with colleagues and expert solution providers. Co-located with two complementary shows, Cyber Security in Government Expo and Identity Expo, this a unique platform you won't want to miss — bringing together the latest innovation and key insights under one roof.

The three shows together will take place

on 6–7 August 2019 at the National Convention Centre, Canberra. These events combine a rigorous program, networking opportunities, roundtables, and a Free Expo with leading solution and service providers.

Tech in Gov

Tech in Gov is Australia's longest-running annual ICT-in-government event and the only forum of its kind in Canberra. It combines a high-level conference with a large-scale exhibition, bringing together senior public and private sector IT experts to learn, network and source ICT solutions. This year we are delivering insights on key topics such as Digital Transformation and the Future of Technology within Government, Service Delivery, G-Cloud, IoT, RegTech, Data Analytics, Artificial Intelligence, Cloud, Mobility and Networking.

Cyber Security in Government Expo

Cyber Security in Government is a specialist, strategic-level conference that brings together the sharpest minds in cyber security from across the country to learn about the latest technologies and strategies for managing cyber risk. This year's event will cover topics on army cyber capability, the Australian cyber security landscape national and globally, as well as innovations within this industry.

Identity Expo

The Identity Expo brings together digital, risk and fraud professionals from federal and state government, alongside private sector industry leaders, to discuss issues and projects around ID management, privacy and consent, trust frameworks, access and authentication, security, biometrics, fraud detection, blockchain, self-sovereign identity and the consumer data right. This event will explore and bring about real insights into the field of data and digital identity, public and private collaborations, how digital identity can contribute to the economy, identity standards and interoperability as well as identity security.

Speaker snapshot

Join us to hear some of the leading minds within the industry. Below is a quick snapshot of some of the speakers we have lined up.

- Major General Marcus Thompson, Deputy Chief Information Warfare, Department of Defence
- Stephen Scheeler, Former Facebook
 CEO (Australia & NZ) and Founder of
 digitalceo.com.au
- Manal Al-Sharif, Author, Forbes
 Top 50 Women in Tech, Founder of
 Women2Hack Academy & Women's
 Rights activist
- Alastair Treharne, Digital Identity
 Advisor, Government Digital Service, UK
 & World Bank
- Victoria Richardson, Chief Strategy Officer, AusPayNet
- Kate Carruthers, Chief Data and Insights Officer, UNSW
- Fergus Hanson, Head of International Cyber Policy Centre, Australian Strategic Policy Institute
- Rachel Dixon, Privacy and Data Security Deputy Commissioner, Office of the Victorian Information Commissioner

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AUSTRALIAN FEDERAL, STATE AND LOCAL GOVERNMENTS ARE MAKING PREPARATIONS FOR THE TECHNOLOGY-ENABLED FUTURE OF TRANSPORT IN THE NATION.

tems on the agenda include the transition to electric vehicles, the deployment of intelligent transport systems (ITS) technology on Australian roads, and the introduction of self-driving cars, buses and trains. But critics contend that governments are not acting fast enough to encourage adoption of these potentially revolutionary new technologies.

ELECTRIC VEHICLES

A high-priority project in Infrastructure Australia's recently published 2019 Infrastructure Priority List involves the deployment of a national electric vehicle fast-charging network.

The project, which is still at the design stage, would involve establishing fast-charging stations on the national highway to help overcome barriers to adoption of electric vehicles.

"The advent of electric vehicles, along with automation, growth in the 'sharing economy' and technological connectivity, could bring the largest transformation the transport sector has seen since the shift from steam to diesel locomotives," Infrastructure Australia's report states.

According to the proposal, electric vehicles are projected to account for 70% of new vehicle sales and 30% of vehicles in Australia by 2040. But motorists have frequently cited a lack of access to charging stations as a key barrier to adoption of electric vehicles.

Infrastructure Australia is also recommending that policies and regulations be developed to encourage adoption of charging technology for electric vehicles, and that the government evaluate whether additional investment is required to ensure that Australia's electric grid and distribution network can provide reliable electricity supply for the new charging network.

But Greens transport spokesperson Senator Janet Rice has slammed the federal government for dragging its feet on the development of a national infrastructure for electronic vehicles. She said Infrastructure Australia's report represents a "canary in the coal mine", demonstrating that other countries are leaving Australia in the dust in terms of encouraging electric vehicle uptake.

"Infrastructure Australia says that electric vehicles are a 'game changer' for improving national productivity and environmental benefits. So why isn't the government doing more to get Australia on track? It's ludicrous that we don't already have a national charging network, nor any plans for one," she said.

Electric Vehicle Council Chief Executive Behyad Jafari agreed that Australia is lagging behind other comparable nations in terms of electric vehicle infrastructure.

"Infrastructure Australia is the objective authority on what the nation needs to start building. If their experts recognise a national fast-charging network as a high priority, then governments should heed the call," he said.

"As Infrastructure Australia correctly points out, the price of electric vehicles >>>

Automated vehicles

is dropping and range is rising. But our leaders are pumping the brakes by not adequately supporting new charging infrastructure.

"Australians can and should be able to drive all over this massive nation with complete confidence in a zero-emission vehicle. The technology exists. We just need the political will to make it happen."

INTELLIGENT TRANSPORT SYSTEMS

Another key theme of Infrastructure Australia's latest priority list involves upgrading Australia's road infrastructure with ITS technology.

ITS is defined in the government body's report as "the application of modern computer and communication technologies to transport systems, to increase efficiency, reduce pollution and other environmental effects of transport and to increase the safety of the travelling public."

The 2019 Infrastructure Priority List calls for the introduction of ITS capabilities on key roads including the M4 and Sydney CBD motorways in Sydney, the M80 Ring Road in Melbourne, Adelaide's North-South Corridor, and the Mitchell and Kwinana freeways in Western Australia.

This will involve deploying measures including coordinated ramp signalling capabilities, vehicle detection devices, speed and lane use management, and variable electronic signage offering up-to-date traveller information. These technologies will be applied to manage traffic flow in order to enhance both road capacity and safety.

The M4 Motorway project also involves the deployment of a new communications and power backbone along the motorway.

AUTONOMOUS VEHICLES

The House Infrastructure, Transport and Cities Committee held a public hearing on 15 February aimed at exploring the use of automation in rail and road based mass transit.

According to the Department of Infrastructure, Regional Development and

Cities, "the use of automated vehicles for ride-sharing or ride-hailing, for automated on-road mass transit services, and for the provision of 'last-mile' connectivity, could deliver benefits such as significantly improved safety outcomes, greater efficiency and reduced congestion, better access to transport services for those unable to drive, as well as more liveable urban and regional communities".

But Committee Chair John Alexander said the introduction of self-driving vehicle technology will present a series of significant challenges for the public transport sector.

"The automation of mass transit is not just about driverless buses and trains — it's also about how mass transit will fit into an automated transport future and how we will manage questions of mobility more generally," he said.

"Ideally, automated transport would be incorporated into the masterplanning of the urban and regional environment in a way that maximises connectivity while promoting compact and accessible urban forms."

In November 2018, the City of Newcastle issued a request for proposals for qualified operators to trial an intelligent public transport vehicle. The trial will involve a small shuttle carrying about 12 people at a time through scenic area of the city.

The trial will aim to demonstrate that autonomous vehicles are safe and suitable for use in urban environments. It will also test the suitability of Newcastle's smart city infrastructure to support autonomous vehicle operation, and seek to assess the regulations that will be required to facilitate the use of autonomous vehicles in urban areas.

Various levels of government are also acting to facilitate the testing of autonomous private vehicles on Australian roads. In January, the Victorian Government announced it had approved the first on-road trial of connected and autonomous vehicles under the new Automated Driving System (ADS) permit scheme.

Appliance company Bosch has been awarded \$2.3 million from the Connected and Automated Vehicle (CAV) Trial Grants Program for a planned trial of its autonomous vehicle technology on high-speed rural Victorian roads later this year.

The state government has allocated a total of \$9 million for the trial grants program as part of its \$1.4 billion

Towards Zero Action Plan, which plans to reduce road deaths by 20% and serious injuries by 15% over the five years from 2016–2020.

The NSW Government has likewise established a \$10 million fund to expand its portfolio of connected and autonomous vehicle trials over the next four years. Plans for the new fund were laid out in the state's recently published Connected and Automated Vehicles Plan, which forms part of its 40-year Future Transport 2056 strategy.

The new plan establishes goals including supporting the implementation of nationally consistent regulation, standards, policies and safety assurance for self-driving vehicles. It aims to ensure that conditionally automated vehicles can operate legally on NSW roads before 2020, and fully automated vehicles from 2020.

The Queensland Government is also supporting a trial of an electric vehicle equipped with AI sensors and computers being conducted by the Queensland University of Technology (QUT). While it will not involve an autonomous vehicle driving the roads, it will involve AI simulating and evaluating its ability to perform comparably to the human driver in a variety of road conditions.

According to the KPMG 2019
Autonomous Vehicles Readiness Index,
published early February, Australia
received the top score on regulations
supportive of autonomous vehicles. The
report notes that the recent establishment
of the Office of Future Transport
Technologies could further improve
Australia's performance in this domain.

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EMBRACING THE WIRELESS INTERNET OF THINGS



ocal councils around
Australia are rapidly realising
the benefits that smart city
technologies can bring. To
achieve this, networks of
sensors need to be established to gather
information so that those councils can
make better-informed decisions and
drive efficiencies in service delivery. But
the cost of laying fibre or cable across
wide areas is prohibitive, which is why
low-power wireless technologies are
coming into their own.

But the technologies involved can seem confusing at first sight, so to get a better idea of some of the technical aspects of these systems we spoke with Jon Goudge, M2M/IoT Business Unit Manager at RFI Technology Solutions in Sydney.

WHICH ARE THE MAIN WIRELESS IOT SYSTEMS AND HOW SUITED ARE THEY FOR DIFFERENT PURPOSES AND ENVIRONMENTS?

There are many different LPWAN technologies available in today's market, such as LoRa, Sigfox, Zigbee and Bluetooth, and numerous others in both licensed and unlicensed spectrum. Applications include water and gas metering, smart city sensors,

environmental sensors and so on.

Small payload and high intervals in data collection are well suited to narrowband, low-power wireless carriage, thus the emergence of LoRa and Sigfox networks in Australia and worldwide.

LoRa is a long-range wireless communication protocol that competes against other low-power wide-area network (LPWAN) wireless solutions such as narrowband loT (NB loT) or LTE Cat M1. Compared to those, LoRa achieves its extremely long-range connectivity (possibly 100-plus km) by trading off data rate. Because its data rates are below 50 kbps and because it is limited by duty cycle and other restrictions, LoRa is suitable in practice for non-real-time applications for which one can tolerate minor delays.

WHAT ARE THE PROS AND CONS OF USING UNLICENSED SPECTRUM?

Unlicensed spectrum is available to anyone, anywhere as long as it is used within the guidelines as set out by the ACMA. The pro is that it is free to use; the con is that no protection can be offered against interference. This is why LoRa incorporates techniques for minimising the possibility of

interference, such as spread spectrum transmission. NB-IoT is an LPWAN radio standard developed to enable a wide range of devices and services to be connected using cellular bands (licensed spectrum). It focuses on indoor coverage, low cost, long battery life and a large number of connected devices.

WHAT ABOUT SECURITY? HOW CAN I ENSURE MY DATA IS SAFE?

Encryption is often incorporated as part of the security measure in an LPWAN network. It is common to find 128-bit AES utilised in these technologies.

DO THESE SOLUTIONS OPERATE ONLY ONE-WAY, IE, FROM SENSOR TO CENTRAL POINT?

LoRa products can both send and receive data. It is not so much about the LoRa protocol but more about the way in which the radio module is incorporated into a device and what the additional interface hardware supports.

LORAWAN IS AN OPEN STANDARD. WHAT ARE THE PROS AND CONS OF USING IT?

The LoRa Alliance promotes the LoRaWAN for LoRa-based networks. Its three open standards provide the end user with more choices. It offers functionality that is very similar to Sigfox, making it ideal for sensor devices. And as it is an open ecosystem, there are more software and hardware vendors adopting this technology. LoRa Radio can be deployed in localised networks and does not rely on a network provider for service.

It is important to understand the business needs and from there establish the most suitable solution. Our team at RFI can offer guidance and advice on this and many other technologies in smart city deployments.



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Gamified engagement brings efficiency benefits

A virtual aquarium has helped a government department engage staff and solicit ideas to benefit efficient service delivery.

n Australian state government department recently implemented a digital innovation platform called Feisty Fish — created by consultancy Crazy Might Work - to encourage engagement and innovation within its digital government division. The concept is fairly simple. Feisty Fish acts as a sort of game that takes place in a giant virtual fish tank. A staff member will 'go into' the tank and create a 'fish,' and into that fish they put their particular idea or proposal. Once an idea is in the tank, everybody else can view it as it 'floats' around and click on it to have a look at what it contains. If staff like an idea they can vote for it by 'feeding' it, and if they don't like the idea they can provide a comment as to why they think it needs some more thought. According to Crazy Might Work, the resulting conversation "becomes a clear pane learning experience for the entire organisation as everyone learns how ideas are

evaluated, strengthened, or, in some cases, eliminated (dropping as bones to the fish graveyard on the ocean floor)".

The department's concept was to provide one location where it could collate ideas, plus also give its staff a voice.

The theme was, 'What can the department start doing or repurpose in terms of resources across the sector to become more efficient and focus on its commitments?' In other words, the idea was to identify opportunities for improvement.

According to feedback from the division's staff, overall they liked the concept and found it to be a fun way of engaging. "It's essentially gamifying and giving people... a light-hearted way [to interact] rather than the more structured 'bulletin board'," one staff member said.

At the conclusion of the initial trial the department ended up with 40-plus ideas in the tank, plus there were a significant number of people who provided comments and suggestions on those ideas.

Overall, the department concluded that it had been an innovative effort, with staff agreeing that it is good to try different things and find different ways of engaging with them and coming up with ideas.

One of the benefits of the system is that it

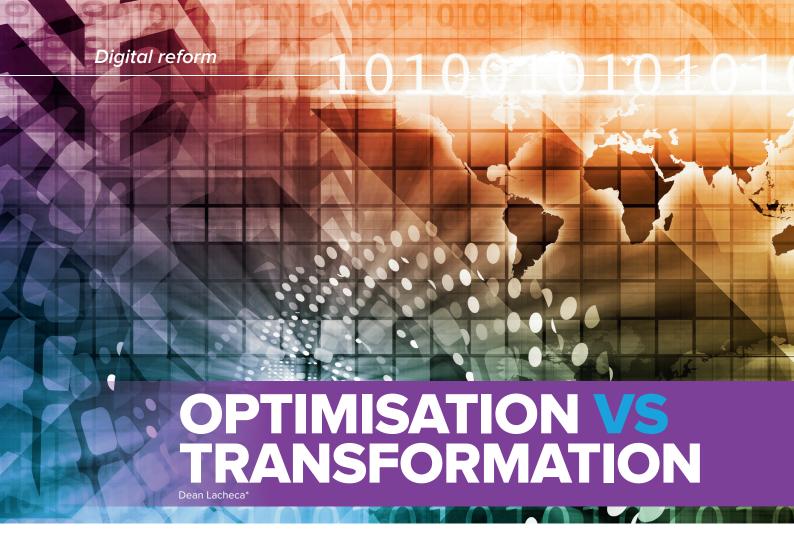
holds the promise of uncovering pearls of wisdom that might not otherwise get to see the light of day.

For instance, somebody could be at a lower-graded position and come up with a sensational idea that would not normally be considered. It's also about providing an opportunity for collaboration across multiple teams — someone might come up with an idea that might not be well-supported within their team, yet it could be a brilliant idea that will result in a significant impact across the entire department.



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A LONG-TERM
APPROACH TO DIGITAL
OPTIMISATION OF
PROCESSES AND
SERVICES CAN PRODUCE
THE CAPABILITIES
NEEDED FOR DIGITAL
TRANSFORMATION.

ransformation sounds
exciting, like it's going to
change everything for
the better. It must be the
correct thing to do, right?

Newly elected or appointed public
officials often use 'transformation' as
a slogan to distinguish technologyenabled initiatives from prior efforts with
similar intentions. Many government
transformation projects serve as the
means to address failings rooted
in long-term underinvestment in
information and technology.

It's a familiar script... government transformation initiatives are initially launched with great fanfare, only to lose momentum, visibility and executive support over time. These transformation programs eventually devolve into a 'one and done' series of discrete point solutions or disappear altogether.

When this happens, the total public value of investments with

transformational potential can go unrealised in the shuffle of leadership, shifting budget priorities or the announcement of yet another new 'transformation' push.

Achieving real digital government transformation remains a tangible, if distant, goal for a significant majority of government CIOs, even as they make progress in the digital enablement and optimisation of their organisations.

The gap between the digital now and future is substantial. A recent Gartner survey indicated that 67% of government respondents say they're pursuing digital transformation, but only 5% have scaled, harvested or refined their transformation ambition.

WHY IS TRANSFORMATION SO DIFFICULT TO ACHIEVE?

To successfully transform a single business process in government requires committed executive >>>

Digital reform

sponsorship and significant attention to organisational change management. Transformation initiatives that involve an entire department or agency increase the risk of failure whenever leadership underestimates the amount of sustained effort and time required.

Extending transformational ambitions to include multiple agencies or a whole-of-government level jumps up the risk factors by an order of magnitude... that is, if governance, technology and organisational culture aren't sufficiently mature to achieve those ambitions.

Exercise caution whenever a transformation project is announced or already underway. It's quite possible the charter and scope calls for a complete reinvention of government operations by exploiting digital data and technologies. Upon closer examination, however, you may determine the actual goal is the optimisation of your organisation's existing capabilities and value proposition.

SO WHAT'S THE DIFFERENCE?

What separates optimisation from transformation is the magnitude and the impact of digital technologies and supporting capabilities on an organisation's operating processes and business models.

Optimisation uses digital data and technology to significantly improve what government organisations already do — existing business models, operating processes, services or outcomes — whereas transformation changes the shape of how government organisations operate. It exploits digital data and technology to reinvent or create new business models, operating processes, services or outcomes.

Digital optimisation is much more likely to meet the cost, risk and time requirements of government administrations and political appointees than transformation. It's favoured by those not going through disruption in the near-term and can provide

significant value without changing the underlying business model.

But don't think this means optimisation is easy or delivers inferior results. The digital optimisation of a single business process in government still requires committed executive sponsorship and significant attention to organisational change management.

An optimised process can feel like it has been 'transformed' to the citizen. The Australian Tax Office, for example, continues to optimise the tax return lodgement process. The Department of Immigration and Border Protection is trialling a biometrics system at Australian airports as a way to optimise the passport control process.

By distinguishing between optimising or transforming government, you can identify high-value opportunities and effectively lobby for IT investments in terms and timeframes that are acceptable to stakeholders.

OPTIMISATION SUITS INFLEXIBLE BUSINESS MODELS

Like any organisation that strives to deliver value at scale, government operates according to a business model that must be sustainable. Knowing how a business model applies to government can help you identify areas where the potential for transformation or optimisation is greatest.

It's the inability of government to discriminate among customers or alter its financial model that prevents public officials and CIOs from readily transforming the existing business model or creating new ones.

Many government programs are also subject to appropriated funds regulations and cost allocation requirements that direct how and where money is to be spent. These are obstacles to achieving the economies of scale that drive innovation.

To be clear, digital transformation is possible and can happen at scale — with

enough vision, time, resources, talent and sustained leadership commitment. Transformation is also necessary to attain the performance, accountability and mission outcomes citizens expect of their public institutions.

However, digitally enabled transformation in government is an outlier at present — the exception and not the rule. Examples of digital government transformation remain scarce beyond those that are already well reported. New Zealand Inland Revenue's Business Transformation Program is a good example.

YOUR MISSION: CONTINUOUS OPTIMISATION

A sustained, long-term approach to digital optimisation of existing processes and services can produce the capabilities needed to enable digital government transformation.

Over time, the steady accumulation of workforce skills, technologies, data and analytics proficiency, and partnerships that emerge from a sustained optimisation strategy, can create synergistic capabilities with transformative potential.

Whether that potential is ever activated depends entirely on executive leadership and the situational dynamics at play.



*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.



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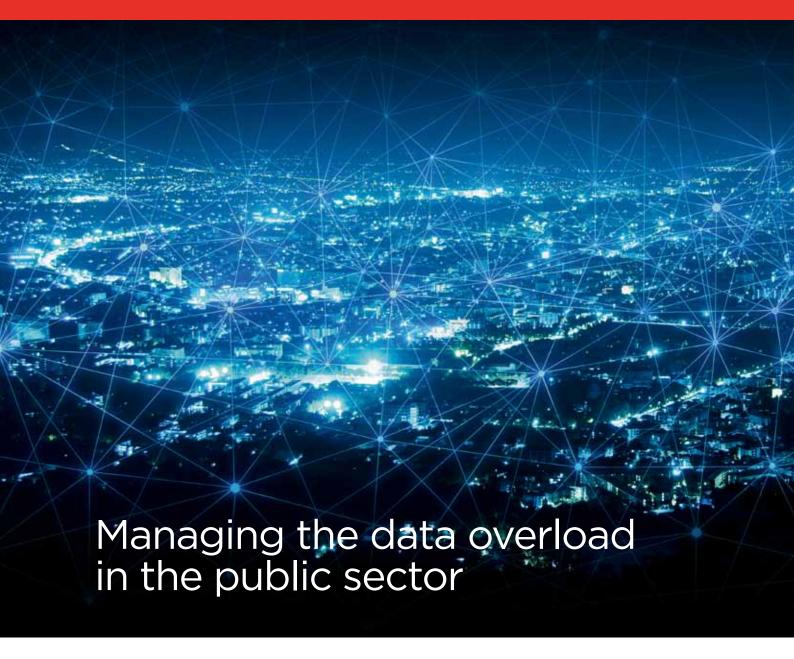
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overnment agencies are the custodians of data. There's data about people, cars, houses, crime, health and wellbeing, tax, law, animals, rubbish bins; you name it, they have data on it. It's increasing faster than ever before — there's bucketloads of it, structured and unstructured, residing in a system somewhere on the network, the Web or in the Cloud. And soon the complexity will be increased as the Internet of Things (IoT) and

automated systems start to drive the creation of even more data.

We are now entering the era of "Smart" everything. Smart cities are here, because smart devices are here — smart rubbish bins, smart signs, smart parking spaces, smart street lights, smart pumping stations, smart meters — all sending data back to Asset Management Systems for the purposes of maintenance scheduling and fault logging, compounding the ever-growing ocean of data needing to be managed and reported on. Drones are now capturing footage on storm

water pipes, buildings, roads, coastal erosion, power poles and much more, sending volumes of data back to Government data centres for condition reporting and maintenance planning.

Government data can no longer stay behind the firewall, especially whilst customer expectations are increasing and unrelenting. The push by customers for self-service is a "need-to-have-now" not a "nice-to-have" on a five-year roadmap. Creating customer centric views of the data has further increased pressure on agencies to secure, manage and



collate the data coming from outside the secure perimeter of the data centre.

Therefore, whole of agency reporting is becoming essential.

Let's use a Justice Department as an example. Being able to report on a person's journey through the justice system; from the first contact with the Police, through to an appearance in Court, to being held on remand, right through to prison and rehabilitation is about connecting the data from multiple systems within the agency. Total visibility of the person and their

associated interactions as they navigate through the criminal justice system will enable better decision making, better budgeting, improved rehabilitation processes and, ultimately, a reduction in crime and the cost burden on the community. Scrutiny is also driving the need for better data management. Ombudsmen, commissions, committees, corruption, whistle blowers and political drivers demand connected, easy to access, transparent data that contains all the metadata, history and accurate content to ensure absolute compliance and auditability. These demands were recently highlighted at a leading industry event, where leading Government CFOs presented on their most challenging issues, and the commentary was consistent across the departments represented. These agency leaders stated that they are trying to come to terms with where the data is, how it is structured and how it can be utilised to benefit the greater, long term good of the community - managing data from across the myriad of systems is now seen as one of the most critical priorities for Federal, State and Local Government. Infor recognises that structured and unstructured data lives across the Government enterprise. With over 3900 Government Agencies across the globe using an Infor Public Sector solution, we have the credentials and technology to help you manage this data overload that is perplexing your organisation, bringing valuable information to the forefront to enable decision making processes at the click of a

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utanix recently announced the healthcare industry findings from its Enterprise Cloud Index Report (nutanix.com/enterprisecloud-index), which set out to quantify healthcare plans for adopting private, hybrid and public clouds. The report revealed that the healthcare industry now ranks third, by industry, in the number of hybrid cloud deployments worldwide and is increasingly adopting hybrid clouds that combine private and public cloud services, and their respective benefits. According to respondents, in just two years, healthcare hybrid cloud deployments are expected to jump from 19% penetration to 37%.

The reasons behind this rapid adoption are varied. Healthcare organisations need to address a variety of critical IT needs, including a need for increased security, protection of sensitive patient data and meeting regulatory compliance. Over 28% of healthcare respondents named security and compliance as their number one decision criterion in choosing where to run workloads. With hackers targeting medical records containing sought-after personal details such as patient healthcare

and insurance information, healthcare organisations require technology solutions that can handle the movement of sensitive data compliantly, and without security risk. Results from the report showed that the healthcare sector is turning to hybrid cloud for optimum flexibility and the ability to move applications between private and public clouds. More than half of survey respondents from the sector noted intercloud application mobility as "essential," further demonstrating this need for seamless movement of applications and associated data, networking services, and security policies between different types of clouds. Other key findings of the report include:

- Overspend on public cloud:
 Organisations that use public cloud
 spend 26% of their annual IT budget on
 public cloud, with this percentage set to
 increase to 35% in two years' time.
- Healthcare public cloud usage outpaces
 other industries for IoT: The healthcare
 industry is embracing public clouds at
 about the same pace as most sectors,
 reporting a 13% penetration compared
 to the 12% global average. However,
 healthcare organisations outpace the
 averages for certain applications, such
 as ERP/CRM, data analytics, containers
 and IoT.

Hybrid IT skills are scarce in healthcare:
 While 88% of respondents said that they
 expect hybrid cloud to positively impact
 their businesses, hybrid cloud skills are
 scarce in today's IT organisations. These
 skills ranked second in scarcity only
 to those in artificial intelligence and
 machine learning.

Chris Kozup, SVP of Global Marketing at Nutanix says that, "Healthcare organisations especially need the flexibility, ease of management and security that the cloud delivers, and this need will only become more prominent as attacks on systems become more advanced, compliance regulations more stringent, and data storage needs more demanding." From a patient and clinician perspective, adopting a cloud model, hybrid or otherwise, also enables healthcare providers to undergo a digital transformation of healthcare delivery. Infrastructure innovations enable hospitals to manage different applications and data types, take advantage of automation and create new service lines such as telehealth or remote monitoring, thus leading to improved patient engagement.



Digital health



THE INS AND OUTS OF MY HEALTH RECORD

Dylan Bushell-Embling

THE GOVERNMENT HAS INSISTED THAT THE 9.9% MY HEALTH RECORD OPT-OUT RATE IS SQUARELY IN LINE WITH EXPECTATIONS, BUT LABOR IS UNIMPRESSED.

ore than nine in 10
Australians have
now been allocated
a My Health Record,
but millions have
opted out due to privacy and other
concerns. The federal government
and Labor are now sparring over the
participation rate in the controversial
digital health record project.

According to the Australian
Digital Health Agency (ADHA), at the
conclusion of the opt-out period, My
Health Record had a participation rate
of 90.1%.

ADHA Chief Executive Tim Kelsey nevertheless told a Senate Estimates hearing last month that the rate is roughly in line with expectations, as indicated by Minister for Health Greg Hunt in July.

But with roughly 25.4 million people eligible for Medicare, this means more than 2.5 million citizens have opted out. A further 300,000 had been allocated a My Health Record but cancelled it at the time of the hearing, roughly four weeks after the end of the opt-out period.

Based on statistics presented by ADHA in October, it appears that roughly half of those opting out did so after the government yielded to pressure in November to extend the opt-out deadline by two and a half months.

During an interview on ABC radio, Hunt said he was "very pleased" with the 90% participation rate. "I was speaking to representatives from international health bodies ... and they said if a country has a 90% participation rate that would be extraordinary internationally," he said.

But Labor Shadow Minister for Health and Medicare Catherine King said the opt-out statistics are indicative of "just how badly the botched Liberal rollout damaged public trust" in digital health records.

"Labor supports a national digital health record — which is why we created one when we were last in government," she said.

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"But the government's rushed implementation of an opt-out model created a range of problems and severely undermined public support for a system that could deliver enormous health benefits for all Australians."

ADDRESSING CONCERNS

The government insists that Australians who have been allocated a My Health Record will be able to demand its permanent deletion at any time, while individuals who have opted out will be able to create a record at any stage.

"The new permanent delete functionality means Australians will always have the choice not to have a record and they can remove all of their data from the My Health Record system," ADHA Chief Medical Advisor Meredith Makeham said in January.

"At any time in their lives, they can delete their record — and no copy will be least."

New laws passed by parliament last year sought to assuage the concerns that had motivated the decisions to opt out of the system. Insurers and employers were prohibited from accessing or demanding access to the information stored in My Health Records under any circumstance.

In addition, law enforcement agencies were prohibited from accessing an individual's My Health Record without a warrant or court order.

But Shadow Minister King said lingering privacy concerns remain that must be addressed to restore Australians' confidence in the system.

Labor is calling on the government to instruct the Privacy Commissioner to conduct an independent review of the system. "If they fail to do so, a Shorten Labor Government will," she said.

She said the review should consider factors including determining the appropriate balance between utility of the system and maintaining privacy and security of individuals, whether particular protections are needed for vulnerable people including minors and victims of domestic violence, and whether changes to default access settings are needed due to the shift from an opt-in to an opt-out model.

BENEFITS

Meanwhile, ADHA statistics show that as of late January, 82% of general practices, 84% of community pharmacies and 75% of public hospitals in Australia were connected to the My Health Record system.

More data is also emerging showing the potential benefits of adopting an electronic medical records system. Research conducted for the Pharmaceutical Society of Australia (PSA) by the Quality Use of Medicines and Pharmacy Research Centre at the University of South Australia has found that My Health Record can play a key role in reducing the number of medication-related hospital admissions and adverse events.

The research calculates the annual cost of medication-related problems in Australia at nearly \$1.4 billion, equivalent to 15% of total Pharmaceutical Benefits Scheme expenditure.

Nearly 250,000 Australians are hospitalised each year as a result of medication errors, inappropriate use and other medication-related misfortunes, with a further 400,000 presenting to emergency departments.

The report found that listing discharge summaries in My Health Record will enable pharmacists to proactively monitor dosages according to renal function.

PSA National President Dr Chris Freeman said such an approach has the potential to significantly reduce the number of medication-related hospital admissions.

"At least 50% of medicine-related problems are preventable, but only if we remove the siloed approach to medicines management," he said.

"If medicine harm was a chronic disease it would already be a national health priority. This report highlights that governments, pharmacists and other health professionals need to work together to reduce the alarming incidence of medication errors, misadventure, misuse and interactions."

30 | GOVTECH REVIEW Q1 2019 WWW.GOVTECHREVIEW.COM.AU

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FOUNDATIONS FOR A DATA-DRIVEN FUTURE

Mark Jobbins, VP of Technical Services APJ, Pure Storage

DATA-CENTRIC ARCHITECTURES MUST OPERATE IN REAL TIME IN ORDER TO BOOST THE ANALYTICS THAT POWER AI APPLICATIONS.

f we chart the evolution of transport we can identify a consistent trend — it has been driven by technological innovation. The use of donkeys, horses and camels dates as far back as 4000 BCE. In 1906, the first car was developed with an internal combustion engine. Today's conversations about transport revolve around autonomous vehicles and space tourism. What's fuelling the latest innovation? Data. Its application is driving the breakneck speed of innovation, with researchers unearthing new ways to increase transport efficiency and reduce costs.

A DATA-DRIVEN REVOLUTION

Last year, Transport for NSW (TfNSW) announced it will roll out a new transport management system that holds the promise of busting Sydney's congestion through better real-time data and predictive technology. It is being described as the world's most advanced transport management system. By leveraging real-time data and artificial intelligence it will reduce traffic congestion by predicting problems before they occur. Unsure about how bad congestion really is in a city such as Sydney? Consider this: the average speed of Sydney's road network, the slowest in the country, is even worse than New York, a city with over 50% more residents than Sydney.

TfNSW's new platform aims to provide a complete view of the transport network by 2020 in order to "make faster, more informed decisions making passenger journey more reliable and reducing the cost of congestion".



Australian organisations have a healthy appetite to explore AI and realtime data initiatives. What will it take to ensure projects such as these get off the ground? The answer lies in data. The raw material for Al applications is data and it is required in vast quantities. Enterprises gather 44 TB of data daily, and that's set to increase by 40 times over the next decade. The data which will feed into the TfNSW platform for analysis will arrive from a variety of sources, such as footage from traffic management cameras installed at most major intersections, Census data and weather data. Another rich source of data will come from the Opal card, the contactless fare collection system for public transport. TfNSW has made the data available so researchers and developers can access it to innovate and gain insights into commuters' travel patterns.

To process all of this data in real time requires powerful compute capabilities but it also requires a shift of mindset.

To get the most out of their data, organisations need to rethink how they

are capturing, consuming and storing it. The systems built to share data are fundamentally different than those built to simply store it. Organisations need to put their data to work and unify and share it for real impact. A data-centric architecture must operate in real time, to boost the analytics that power Al applications.

STORAGE: AN ON-RAMP TO AI

In all industries across the globe, organisations of all shapes and sizes are starting to understand that future growth hinges on intelligent use of data. Initiatives such as those announced by TfNSW are much welcomed. Australia must turn to technologies such as AI to solve issues such as congestion to increase productivity to secure the country's economic future. Transportation is about to get a technology-driven boost — its future will be connected, data-driven and intelligent. An optimised approach in compute and storage is enabling forwardthinking organisations such as TfNSW to tap into the power of AI to turn their data into a revolutionary service.

32 I GOVTECH REVIEW 01 2019 WWW.GOVTECHREVIEW.COM.AU

Headlines

LGAQ embracing big data

The Local Government Association of Queensland (LGAQ) is involved in a series of initiatives aimed at further developing its big data analytics team, LG Sherlock.

The association has established an independent committee to advise on its efforts to ensure LG Sherlock meets its compliance obligations under the recently adopted European General Data Protection Regulation (GDPR) gold standard for data ethics and integrity.

The committee will be chaired by-inchief David Fagan, and will meet within the next few weeks to begin its work.

The LGAQ is this week also sending councils a Master Data Sharing Agreement that will act as a cornerstone for the sharing of data between councils.

"This document has been in the works for six months. It was extensively workshopped with member councils and knocked into shape by the lawyers to get it to the point where it would pass



muster," LGAQ CEO Greg Hallam said.

"It's a cornerstone for the sharing of data between councils and the LGAQ and supersedes what were previous, shortterm project specific data agreements with councils."

Meanwhile, LG Sherlock is delivering results. Earlier this month, LGAQ launched the LG Sherlock product Energy Directive, which uses machine learning and Al

to identify faulty or underperforming electricity-consuming assets at Queensland councils.

"We absolutely believe this is the future for councils. We can help them make more holistic, quicker and smarter decisions and save ratepayers untold amounts of money through using their data, and data from other sources, to improve processes," Hallam said.

"That is why we have set aside \$15 million to invest in this space, of which \$6 million has gone into developing LG Sherlock, our Data Lake, a working blockchain and the Energy Detective, the first of many really cool Al and machine learning tools to roll off the production line over the coming 12 months. A plant and equipment tool is next."

Hallam added that next month the LGAQ plans to launch a tender for its planned statewide network of IoT sensors for applications including environmental monitoring, smart street lighting, smart bins and intelligent transport system enablement.





THE FEDERAL GOVERNMENT'S DIGITAL
MARKETPLACE PROCUREMENT PORTAL IS HELPING
GOVERNMENT AGENCIES AT ALL LEVELS MORE
EASILY ACCESS QUALIFIED DIGITAL TALENT, AND IS
BREAKING DOWN BARRIERS FOR SMEs COMPETING
FOR GOVERNMENT PROJECTS.

he Digital Marketplace
enables registered buyers
to approach the market
looking to temporarily hire
a digital specialist, seek
proposals and quotes for a specific
project, or receive training to help them
build their own digital capability.

Sellers can apply to be added to the Digital Marketplace panel or add new services to their offerings at any time. Only sellers that pass a value-for-money assessment based on their maximum daily rates can respond to opportunities. The Digital Marketplace also keeps track of the daily rates individual sellers have offered and provides a median rate based on specialist area.

In addition to this assessment, an independent assessment team also conducts corporate capability checks to ensure all company details listed are accurate, all disclosures are reviewed internally for risk, and all financial statements, insurance and workers compensation certificates are valid.

An overview of the success of the initiative can be found in a report detailing the latest statistics and insights from the Digital Marketplace covering up to the month of December 2018.

The marketplace was originally designed for the federal government but subsequently opened up to all levels of government. As of December, less than half (48%) of the 275 registered buyers on the Digital Marketplace are Commonwealth government entities, the report shows. Local government buyers meanwhile slightly outnumber state and territory government buyers.

But federal government departments represented the top five buyers for the month of December. The largest number of briefs was posted by the Department of Defence (four briefs), followed by the Workplace Gender Equality Agency (three), with the Australian Health Agency, Department of Education and

34 | GOVTECH REVIEW Q12019 WWW.GOVTECHREVIEW.COM.AU



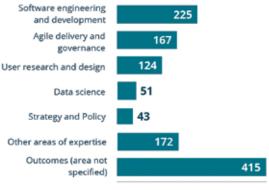
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1000

2000

Daily rate inc GST

Top 5 areas of expertise since 29 August 2016



Briefs published

Department of Human Services each having two briefs filed.

Content and publishing

Change and Transformation

Agile delivery and governance

The Digital Marketplace is also fulfilling its remit of encouraging more competition in the provision of ICT services to government, particularly by opening up opportunities for more small and medium enterprises.

The latest statistics show that 60% of all briefs posted to the marketplace have been open to all listed sellers, and around 25% of the remainder have been open to multiple sellers.

Meanwhile, 72% of the dollar value of contracts awarded through the Digital Marketplace since 29 August 2016 has gone to SMEs.

The number of sellers registered has meanwhile increased to 1128, with 31 new sellers added in December alone. There have been 1203 opportunities posted in this time, and the total dollar value of contracts awarded through the Digital Marketplace has reached \$331.67 million, having grown by \$18.38 that month.

TALENT POOL

Nearly two-thirds (65%) of the briefs posted on the Digital Marketplace have been for digital specialists to assist with internal projects, with the remainder being for outsourced projects with specific outcomes.

The most in-demand specialist roles are software engineers and developers,

with 225 briefs published since August 2016. This is followed by agile delivery and governance experts (167), user research and design specialists (124), data scientists (51), and strategy and policy specialists (43).

3000

These are also broadly speaking the areas of expertise with the highest number of sellers listed on the Digital Marketplace, although there are also specialists in areas including support and operations, training and development, marketing and communications, and emerging technologies.

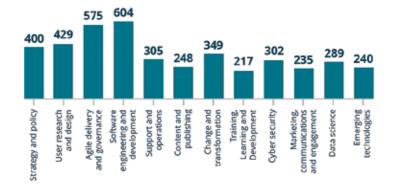
Buyers have used this latter category to source talent for projects including blockchain, machine learning, 3D rendering, augmented reality, and artificial intelligence discovery and proof-of-concept trials.

The statistics also show that the average specialist-seeking brief posted

on the marketplace draws 16 responses, and the average outcome brief attracts seven. But a small number of briefs can attract over 60 or 80 responses respectively.

During the financial year to date, large enterprise Hays Specialist Recruitment Australia has been the top-performing seller with 23 contracts awarded so far. This is followed by HiTech Group (14), Oakton (10), Talent International (nine) and Callida Resourcing (eight).

In more signs of the Digital
Marketplace's success in opening up
opportunities for smaller businesses,
six of the top 10 sellers awarded
contracts this financial year — including
HiTech Group and Callida Resourcing
— are classed as SMEs. And two-thirds
(66%) of the 85 contracts by volume
awarded to sellers this month have
gone towards SMEs.



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hen implementing digital transformation, we all ask: what will make the change stick? There are important factors in implementing technological change which go beyond the system: people, governance and diversity.

"Understanding the link between people and technology is the key to successful digital transformation," says Noetic's CEO, Andrew Balmaks. The complex problems presented during digital transformation require tailored responses that Balmaks and his experienced teams in Canberra, Sydney and Brisbane love to tackle.

"Leaders need to be the ones who exemplify positive change behaviour. They must genuinely engage with their teams and clients during transformation," says Michael Ducie, Noetic's General Manager NSW. This involves communicating organisational vision and providing an environment where innovative ways of achieving that vision are fostered.

Ducie suggests that the creativity necessary to realise digital transformation is not something that "percolates up". Instead he says that "good public sector leaders adopt a deliberative strategy to enable ideas to be generated and shared more organically."

Noetic develops signature solutions from a combination of futures thinking, strategic communication and visualisation to empower public sector leaders to build an adaptive culture.

"Leaders who seek successful change work hard to understand the opportunities across the whole organisation, not just those identified by their direct reports," Ducie says. Associate Principal Christine McPaul says this is important because "leaders who seek out diverse views are more likely to innovate successfully". Noetic collaborates with its clients to embed diversity and inclusion strategies that ensure a range of views help to identify the best solutions. "Stakeholder and client behaviour drives service frameworks, but the challenge is to find meaningful ways of incorporating this into the design of digital transformation," Ducie says. Noetic's signature solutions for strategic business planning, humancentred design, scenario design and other business simulation techniques enable leaders to better incorporate the insights provided by stakeholders and clients. Public sector leaders who embrace these approaches have access to critical information that gives them the edge in managing organisational, resource and policy constraints. "This leads to

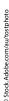
better implementation and consequently outcomes for clients," McPaul says. Modern public sector leaders are increasingly concerned with delivering the benefits of large-scale transformation, but often lack the structure required to do this. "If the benefits of transformation are to be realised, leaders need to ensure that they have appropriate governance arrangements in place," Ducie says. Noetic's signature solutions assist public sector leaders to understand and manage risk, develop effective operating models and build positive organisational culture. Governance is more than simply project management. McPaul suggests that "effective public sector leaders energise their organisation to deliver the social and financial benefits, and productivity gains of digital transformation."

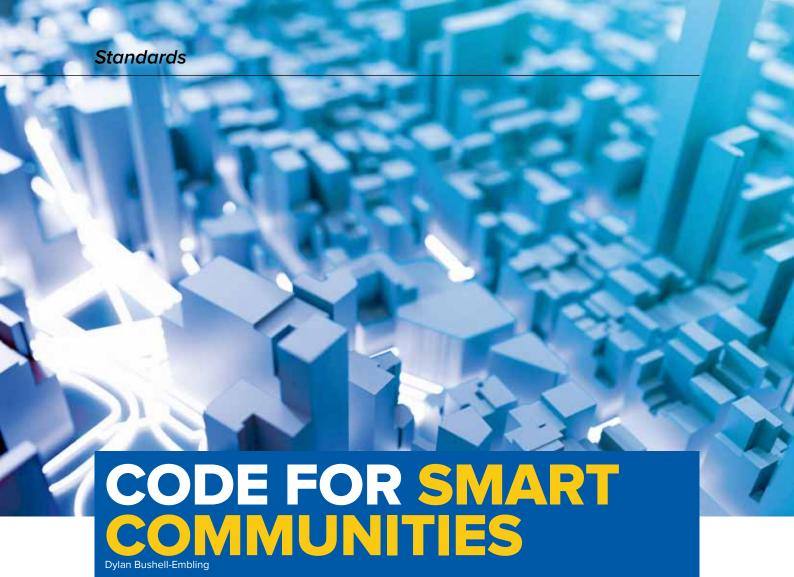
Noetic is committed to working with innovative leaders who value new ways of thinking and are committed to getting the best out of their people throughout the digital transformation process.

Find out more about Noetic's signature solutions at noeticgroup.com.



36 I GOVTECH REVIEW 01 2019 WWW.GOVTECHREVIEW.COM.AU





A NEW STANDARD OF PRACTICE FOR SMART COMMUNITY PROJECTS HAS EMERGED FROM DEEP ENGAGEMENT WITH INDUSTRY, TECH COMPANIES AND GOVERNMENT.

he Smart Cities Council
Australia and New
Zealand (SCCANZ)
and the Green Building
Council of Australia have
released a standard of practice for the
development of smart communities.

The Code for Smart Communities, which was released during Smart Cities

Week Australia in Sydney is designed to serve as a benchmark for urban development and regeneration practices.

The voluntary code represents best practices for more technology enabled and sustainable urban development outcomes, drawing on international standards and practices, and covers areas such as telecommunications connectivity, digital planning practices and the use of data and analytics to drive urban development decision-making.

According to the code, while much of the early discussion and investment around smart cities has been driven by local government, cities are built on smaller components defined in the code as communities. These include precincts, neighbourhoods, town centres, campuses and business parks.

The code recommends developing

a digital strategy that is performance focused, involves the use of open standards unifying all participants in the smart city ecosystem, uses data as the basis of decision support and optimisation, and promotes a culture that supports digital connectivity and transformation.

Once such a strategy is in place, the use of data to inform smart community decision-making should be evolved over time, to eventually allow for capabilities such as the creation of real-time actionable intelligence and autonomous decision-making through machine learning and Al.

The code also contains a series of guiding principles covering areas including connectivity, innovation and strategy, as well as a series of metrics that will be used to determine whether >>>

Standards



a smart community project can claim alignment with the code.

In terms of connectivity, the code states that smart communities should have access to ubiquitous connectivity. It is also important to encourage interoperability to allow technologies to work together to gather relevant smart city data.

To claim alignment with the code, a smart community project must demonstrate evidence that all property parcels could access internet services with download speeds of at least 1 Gbps, or symmetrical speeds of 100 Mbps.

Projects must also meet other criteria such as demonstrating that the community will be able to access an outdoor low-power wide area network (LPWAN) for IoT devices, free public Wi-Fi networks and multiple 4G or 5G networks.

Projects claiming alignment with the code must also commit to achieving at least four stars on the Green Building Council Australia's Green Star – Communities rating system.

Other metrics for claiming alignment with the code focus on the collection and use of advanced analytics as the basis of planning, design and strategic decision-making.

For example, the code encourages project leaders to commit to exploiting emerging technologies, data and analytics in the planning, design, construction and operational management of all buildings.

It also encourages establishing an open data portal where relevant

data can be published for public consumption. Projects should also consider entering into a data management and integration agreement with the city or regional council that could involve connection to a city-wide, open data-sharing platform.

According to the code, smart communities should also build a culture of creativity and agility to encourage innovation, including the establishment of successful start-ups and the adoption of emerging technologies such as blockchain, fog computing and IoT.

SCCANZ Executive Director

Adam Beck said the code has been established after deep engagement with the development industry, technology companies, all tiers of government and other stakeholders.

"This is the first time a smart community has been defined in a way that can be practically applied. We went back to principles to build this code from the ground up," he said.

Two development projects have agreed to act as lighthouse projects and be the first to embrace the principles of the code. These are a development in Queensland set to house more than 40,000 residents, and the Sydney Olympic Park project that is planned to become a 23,000 resident community with more than 30,000 jobs.

CITY WINNERS

SCCANZ also announced the winners of the inaugural Australian Smart Cities Awards, held in conjunction with its partners in the initiative, Telstra and Deloitte.

Five local councils, a university, two businesses and three individuals were presented with awards or commendations during an event at Telstra's Customer Insights Centre in Sydney on 30 October.

Sunshine Coast Council won the Leadership City award for its commitment to smart cities through data sharing, investment in IoT technology, free public Wi-Fi and a solar farm that offsets all of the Council's energy use. The council also won the Regional Leadership award and a commendation in the Digital City Services category, while its Smart City Framework Lead Michael Whereat won the Government Leader award.

City of Adelaide won in the Digital
City Services category for its Economic
Insights Dashboard, which provides key
city indicators based on demographic,
economic, property, business,
employment, tourism and other data.
The city also received a commendation
in the Leadership City category for
its Ten Gigabit Adelaide high-speed
broadband project.

Newcastle City Council won the Smart Cities Strategy award, while the City of Logan in Queensland won a commendation.

Ipswich City Council won a commendation in the Leadership City category for its 100 square kilometre IoT network, which it is using to support sensor-based data gathering, video analytics, remote asset management, safety and security.

Furniture company Street Furniture Australia won the Built Environment award for its project to measure the number and demographic profile of visitors to a joint thoroughfare project with the ACT Government.

Brisbane Marketing, a wholly owned subsidiary of Brisbane City Council, was the runner-up. The company received a commendation for its The Capital project, a co-working space for start-ups that opened in 2016.

The University of Wollongong won a commendation in the Research and Innovation category — the only plaudit given out in this category — for a joint project with Liverpool Council and Meshed IoT involving real-time measurement of pedestrian movements.

Finally, IoT Alliance Australia and Meshed IoT founder Catherine Caruna McManus won the Industry Leader award, while KPMG Senior Consultant Katherine Tobias won the Emerging Leader award.











EVENTS

Public Sector Network
Events connect
Federal, State and
Local government
departments,
healthcare and
education to discuss
national and global
trends taking place in
the public sector.

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NEW ZEALAND'S DIGITAL VISION



Dylan Bushell-Embling

NEW INITIATIVES AIM TO HELP NEW ZEALAND MEET ITS DIGITAL GOALS, INCLUDING MAKING ICT THE SECOND-HIGHEST GDP CONTRIBUTOR.

he New Zealand
Government is pursuing a series of initiatives aimed at meeting its key goals of closing the digital divides by 2020, and making ICT the second-largest contributor to the nation's GDP by 2025.

During a speech to the Government Information Systems Forum, Government Digital Services Minister Clare Curran said the government wants every New Zealander to embrace digital opportunities.

"We believe that New Zealanders must have access to technology, regardless of income or geography, and the skills to take the opportunities it presents," she said.

"Every New Zealander needs to be on the journey with us; know how to access and use digital technology; and trust the systems we have to manage and protect our information. It's about all of us, not just some of us. Digital is where the growth is and we have to get it right."

The government is on the hunt for a new CTO that will provide independent and expert advice from a whole-of-society perspective and play a leading role in developing a nationwide digital strategy.

Meanwhile, the newly formed
Digital Economy and Digital Inclusion

Ministerial Advisory Group will provide support and advice to the CTO, as well as advice for the government on how to build the digital economy and bridge digital divides.

One of the first tasks of the new advisory group will be to design a blueprint for digital inclusion.

"In order to thrive in a digital world, we need to take a collective approach and bring together the skills and talents of our innovative thinkers and leaders, community organisations and New Zealanders to define what the future should look like," Curran said.

The government has also recently announced a tripatriate Future of Work Forum that will examine key challenges facing the economy including technological change, and help the government shape policies needed to equip workers and business

to adapt

to the





suppliers.

Curran also used the event to announce that the government has fast-tracked the development of an All-of-Government Digital Service Design Standard. The standard will be a template for agencies to design, develop and implement digital services in a consistent fashion, and while putting the needs of citizens at the forefront of the development process.

own Digital Marketplace. The first instance of the Marketplace will

provide agencies with access to public

cloud services, and will be open to

all eligible agencies and public cloud

Finally, the government is evaluating how agencies use algorithms and will use the findings as the basis for designing an ethical framework on maximising the benefits of the use of Al and algorithms while minimising risks and ensuring data is protected.

"The digital revolution will be driven by the convergence of technologies such as Al, blockchain and the IoT with data and analytics capabilities."

NO ONE LEFT BEHIND

In a second speech, at an IT
Professionals NZ association meeting,
Curran said that the New Zealand
Government is working hard to ensure
digital revolution benefits all of the
nation's citizens.

Curran said utilisation of big data is giving rise to the development of a wide range of disruptive technologies that will transform the world.

"Self-driving cars, machines that read X-rays and algorithms that respond to customer inquiries are a few of the emerging technologies that utilise the collection of big data," she said.

"One of the key characteristics of this digital revolution is the exciting but uncomfortable scale and pace of change. We are seeing the transformation of entire systems of production, management and governance because the possibilities of billions of people connected together are unlimited."

Such rapid and all-encompassing change has the potential to have a significant detrimental impact on large groups of people, so the government plans to keep this front of mind while developing digital services.

"As a government, we want to do things differently — with people's wellbeing at the heart of everything we do," Curran said.

"This government is committed to creating a fair and equitable digital economy, where we can all benefit from the opportunities that new technologies provide."

The digital revolution will be driven by the convergence of technologies

such as Al, blockchain and the IoT with data and analytics capabilities, which will require new skills and capabilities.

The New Zealand Digital Skills

Forum — a partnership between industry and various government agencies — is exploring the gaps in digital skills and ways to improve the flow of talent into the tech sector.

The government also recently introduced a new digital curriculum to ensure a longer-term solution to the looming future skills shortage. This is also in line with the government's major goal of closing the nation's digital divides by 2020.

Meanwhile, the government is pursuing major digital transformation initiatives to fulfil its imperative to become more innovative, agile and inclusive.

"Transforming the government's digital approach means having joined-up, people-centric services; it means people being in control of their data; and it means people being able to engage and participate in real time with the government policy process," Curran said.

"It also has to be easier for small businesses to win government business through a marketplace of government."

Curran noted that currently New Zealand companies represent 74% of government suppliers through that shared capabilities model, and the government plans to encourage further investment and support to ensure the local industry continues to grow.

"Our goal is to make procurement more transparent and further reduce the barriers for small and local suppliers to provide innovative services to government," Curran said.

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Featured products



19" rack mount enclosures

MFB IP66 rated 19" rack mount enclosures now have options for external heat protection on the S280 range.

Users can now include Thermobreak Thermal insulation on the enclosure. This insulation is an all-inone closed cell physically cross-linked polyolefin foam that is manufactured in compliance to ASTM C1427 Standard.

Introduced to all internal surfaces of the enclosure, Thermobreak is designed to provide a high level of protection from heat penetration into the enclosure.

To further enhance heat protection, users have the option to also add external vandal-resistant sun shields to the doors, sides and the top of an enclosure. These shields reduce the amount of direct sunlight on an enclosure while allowing air to move between the enclosure skin and shield.

Available in various sizes from 12RU to 45RU, in either free standing or wall mounted. There are also mild steel, stainless steel and aluminium variants.

The S280 range is designed to be strong and robust in any situation. All cabinets are continuously welded and finished to the highest standard.

MFB Products Pty Ltd www.mfb.com.au



Optical fibre patch cords

Increasing density in patching fields provides many benefits, including optimising and reducing rack and floor space in data centres and other network facilities.

But due to the progression of high-density data networks, managing cabling within data racks and optical distribution frames (ODFs) has become more challenging than ever before.

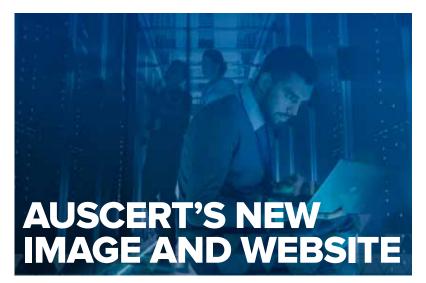
The increased cable congestion, as well as the close proximity of optical ports, can lead to difficulties when connecting and disconnecting services. In order to meet the challenges, LC patch cords have evolved to provide greater accessibility and outstanding performance.

Warren & Brown LC-LC duplex uniboot optical fibre patch cords have been specially designed for high-density applications to provide greater accessibility within congested patch areas. These cords feature a slim cable design of Ø2 mm OD, halving the traditional duplex (figure 8) cable diameter.

Benefits and features include LC-LC duplex uniboot design; LSZH outer sheath; Ø2 mm round OD optical fibre cord; available in Multimode OM4 aqua and violet; easy connection and disconnection; low insertion loss; and complies with ANSI, Bellcore, TIA/EIA and IEC standards.

For more information: https://wbnetworks.com.au/products/optical-fibre-products/optical-fibre-patch-cords/fibre-optic-patch-cord-lc-lc-duplex-uniboot-multimode-om4-aqua.html.

Warren & Brown Technologies www.wbnetworks.com.au



usCERT is Australia's original, and one of the world's longestserving, Cyber Emergency Response

Teams (CERT). This year marks 26 years since it launched its specialist cybersecurity services in The University of Queensland in 1993.

To mark its 26-year milestone, AusCERT is launching a new brand image and website to further enhance the service it provides to members. The new site is easier to navigate and

provides better access to security information. Members can download PGP/GPG versions of Security Bulletins; access information about member meetups hosted by AusCERT; and keep up to date with industry news and the latest in information security issues.

AusCERT is a member-based notfor-profit organisation, so it offers one of the best value threat intelligence and incident response services available. It is trusted by 500+ clients, including every university in Australia, a number of government departments and all sorts of private companies.

The AusCERT services are numerous but revolve around providing specialist security support to help prevent, detect, respond to and mitigate cyber-based attacks. AusCERT members receive timely threat and vulnerability alerts and access to a range of services. Find out more at www.auscert.org.au.



ATTRACT ATTENTION

Display your messages to your customers with MetroSpec Outdoor Digital Display Solutions

MetroSpec, a division of Metromatics, has been manufacturing Outdoor Digital Signage since 2007.

Successful applications of MetroSpec's products include tourist information bureaus, shopping centres, public transport locations, universities, schools, entertainment and sporting venues.

Products include:

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 - Digital Information Kiosk -
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INTERNATIONAL
STANDARDS AND
CERTIFICATION ARE THE
BEST WAYS TO ENSURE
THE LONG-TERM
CYBER PROTECTION
OF CRITICAL
INFRASTRUCTURE.

magine a city the size of Sydney thrown into chaos, as public transport grinds to a halt and traffic lights stop functioning. This is no longer the stuff of nightmares or the scenario of a disaster movie but a prospect that is becoming more likely every day.

Critical infrastructure facilities, from power plants to many forms of public transport, are increasingly targeted by cyber attacks. Sophisticated cyber weapons have been developed, including malware designed to disrupt the operation of industrial control systems.

The growing use of connected devices in the industrial environment

make cyber threats more likely.

According to the report 'Threat

Landscape for Industrial Automation

Systems', published by Kaspersky Lab,

18,000 different malware modifications
to industrial automation systems were

detected in the first six months of 2017.

WHEN MACHINES TALK

Machine-to-machine communication enables networked devices to interoperate, exchange information or perform actions, often wirelessly and without the manual assistance of humans. Sensors are embedded in a growing number of devices which are used to automate and manage process

control systems, including transmission and distribution of electricity. While they offer undeniable advantages in terms of cost and maintenance, they are also increasingly vulnerable to hacking.

Cybersecurity is therefore one of the key concerns for those who manage any form of critical infrastructure. One of the only ways to safeguard these facilities now and in the future is by providing standardised protection measures.

Efficient security processes and procedures cover the whole value chain, from the manufacturers of automation technology to machine and system builders and installers as well as the operators themselves. Protection measures must address and mitigate not only current, but also pre-empt future security vulnerabilities.

Facility operators need to understand and mitigate risk as well as install secure technology in order to build cyber resilience. This means implementing a holistic cybersecurity strategy at the organisation, process and technical levels. Such a strategy must include comprehensive and standardised measures, processes and technical means, as well as preparation of people. But alongside all of this, it must also offer the recourse to an internationally recognised certification system.

STANDARDS FOR CYBERSECURITY

The International Electrotechnical
Commission (IEC) has recently published
IEC 62443-4-1-2018, the latest in a series
of critical publications, establishing
precise cybersecurity guidelines
and specifications applicable to a
wide range of industries and critical
infrastructure environments. The
IEC 62443 series recommends that
security should be an integral part of

"One of the only ways to safeguard these facilities now and in the future is by providing standardised protection measures."

the development process, with security functions already implemented in the machinery and systems.

These horizontal Standards are also used in the transport sector: a set of cybersecurity guidelines for ships adopted by the International Maritime Organisation (IMO) refer to IEC 62243. Shift2Rail, an initiative that brings together key European railway stakeholders, is aiming to define how different aspects of cybersecurity should be applied to the railway sector. It has assessed applicable standards and has selected the IEC 62443 publications. The IEC 62443 Standards are also compatible with the US National Institute of Standards and Technology (NIST) cybersecurity framework.

CERTIFICATION IS KEY

Another boon is that the 62443
Standards have their own
certification program. The IEC is
the only organisation in the world
that provides an international and
standardised form of certification
which deals with cybersecurity. It is
supplied by IECEE, the IEC System
for Conformity Assessment Schemes
for Electrotechnical Equipment and
Components. The IECEE industrial
cybersecurity program tests and
certifies cybersecurity in the industrial
automation sector.

The IEC is also working with the United Nations Economic Commission for Europe (UNECE) to create a common regulatory objectives document

focusing on conformity assessment and cybersecurity. The aim of the document is to provide a methodology for a comprehensive system's approach to conformity assessment that can be applied to any technical system in the cybersecurity field.

According to David Hanlon,
Secretary of the IEC Conformity
Assessment Board, achieving cyber
protection in a cost-effective manner
results from applying the right
protection at the appropriate points
in the system to limit the risk and the
consequences of a cyber attack.
This means modelling the system,
conducting a risk analysis, choosing
the right security requirements which
are part of IEC Standards and applying
the appropriate level of conformity
assessment against the requirements,
according to the risk analysis.

Hanlon says we need to assess the components of the system, the competencies of the people designing, operating and maintaining it, and the processes and procedures used to run it. This holistic approach to conformity assessment is indispensable to protect facilities, especially critical infrastructure, from cybercrime.

In a world where cyber threats are becoming ubiquitous, being able to apply a specific set of International Standards, combined with a dedicated and worldwide certification program, is one of the best ways of ensuring long-term cyber protection of critical infrastructure.

WWW.GOVTECHREVIEW.COM.AU GOVTECH REVIEW 01 2019 | 45

AV over IP technology brings reliability and affordability to commercial networks

Liesl Fourie, Marketing, Audio Visual Distributors



n the public sector, the move toward AVoIP systems from matrix-based AV distribution systems is continuing to gain traction. Major concerns for local, state/province and national officials, is that their AV and communications systems perform at a high level and are reliable, as well as affordable, to fit within increasingly constrained budgets.

AVoIP systems enable video to be distributed over a facility's existing data network, which bypasses the need for a dedicated AV system. In addition, this approach offers open standard interoperability, which gives IT managers the freedom to shop and choose from a wider array of available gear, as well as a scalable architecture that allows for future system expansion without the need to replace existing equipment. These factors go

a long way to providing both convenience and cost-effectiveness to new builds, as well as system upgrade projects.

The benefits of AVoIP are illustrated in the following examples of two formidable AV system upgrades at emergency operations centres (EOCs) in the US. They feature IP encoders, decoders and control systems from one of our partner brands, ZeeVee — a global pioneer and leader in the development and deployment of AV distribution systems for industrial, commercial and residential applications. The City and County of Denver's EOC serves more than 700,000 residents and a daytime population of more than one million people. It is designed to support all types of emergencies, including natural events (winter storms, flooding and tornadoes), human-caused events (dam failures, electrical failures and terrorismrelated incidents), and special events (parades, inauguration ceremonies and sporting events).

The facility's previous system, which utilised a 32-input/32-output matrix switch to route video and audio from computers to television screens, had been in place for more than a decade — long before high definition (HD) displays became the standard. In addition, it was no longer supported by the manufacturer — making it increasingly harder to find replacement parts and adapters.

The new AVoIP system employs two 48-port switches, 36 ZeeVee ZyPer4K encoders, 25 ZyPer4K decoders, and three Chromebooks to control the ZeeVee MaestroZ software that seamlessly distributes computer content, television stations, CCTV feeds, PowerPoint presentations and websites, to displays throughout the facility. Above and beyond

46 I GOVTECH REVIEW 01 2019 WWW.GOVTECHREVIEW.COM.AU

66

The approach, which implements high-performance gear that stays within budget, will make it possible to better assist the community in times of crisis.







its performance and reliability in transmitting situational awareness information to EOC staffers and first responders, the system offers a great deal of flexibility and allows them to quickly reconfigure inputs and outputs to meet the unique needs of each EOC activation.

The Nez Perce County emergency operations centre staff, which serves a population of just over 40,000, also recently conducted an overhaul to elevate its AV and communications capacities to be more efficient and effective. It brought in an AVoIP system that featured 15 ZeeVee ZyPerHD encoders and decoders, and a Z4KMP48 ZeeVee Management Platform, which was quickly installed once the key components were successfully tested. County officials were impressed with how easy system expansion proved to be with the AVoIP-based system, as it did not require vendor assistance to make

changes or install new devices.

Denver and Nez Perce County officials are very pleased and proud of the new AV and communications systems that were created for their communities. The approach, which implements high-performance gear that stays within budget, will make it possible to better assist the community in times of crisis, and easily adapt the system as necessary to meet new requirements and challenges as they arise. ZeeVee AVoIP products have been generating a great deal of industry buzz and earning accolades, including an ISE 2019 InAVation Award and an AVTechnology InfoComm 2018 Best of Show Award for its ZvPerMX4 four-channel IP encoder. Audio Visual Distributors Pty Ltd represent ZeeVee in government and other sectors throughout Australia and New Zealand. We have been distributing and supporting AVoIP systems for over 10 years. This experience

from the very beginning of these IP based solutions has led to a vast knowledge of the requirements of commercial networks, nuances of the product and generally how video works on a network. Our support teams have been fully trained by ZeeVee and offer local support on the 10Gb, 1Gb and compressed video distributions systems available from ZeeVee. These units are stocked locally in our warehouse in Queensland and readily available for projects with our integration partners.





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WWW.GOVTECHREVIEW.COM.AU GOVTECH REVIEW Q12019 | 47

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PREVENTION IS BETTER THAN CURE

Florian Malecki, International Product Marketing Director, StorageCraft

UNDERSTANDING THE NEW TECHNOLOGIES BEING USED BY CYBERCRIMINALS IS THE FIRST STEP TO PREVENTING A DEVASTATING CYBER ATTACK.

s cybercriminals are becoming ever smarter, the coming months promise to bring some of the most advanced attacks the world has seen. Since global cybercrime is estimated to cost around \$8.4 trillion per year (according to McAfee), clearly digital crime is just as lucrative for criminals as it is damaging to businesses.

We must prepare for the worst. And the first step in doing so is to understand the new technologies being employed by criminals to steal data and money while destroying reputations along the way. Here are the four biggest threats to watch out for.

AI AND MACHINE LEARNING-BASED ATTACKS

Cybercriminals are beginning to harness artificial intelligence (AI) and machine learning tools in a number of clever ways. Machine-learning models can craft convincing fake messages, so the technology presents a convenient option for criminals executing phishing attacks. AI can also be used to create malware capable of fooling sandboxes to access companies' systems.

According to McAfee's annual threat prediction report, sophisticated attacks using Al and machine learning are likely to be among the biggest threats we face. Although these attacks are becoming more advanced, typically they still rely on classic phishing tactics. We can prevent them by educating users about how to spot and avoid various online scams.

RANSOMWARE

Threats such as WannaCry and dozens of others are permanent reminders of the damage ransomware causes, and the problem continues to grow. According to Trend Micro, ransomware was its number one cyber threat for 2018, calling it the "land of milk and honey for cybercriminals".

Fortunately, the cybersecurity world is beginning to catch up. Users are more scrupulous, fewer off-the-shelf ransomware attacks are appearing and law enforcement agencies are working to crack down on this type of cyber fraud.

But despite these efforts, the growth of ransomware is a clear indicator that we should stay vigilant. The best way to avoid falling prey to ransomware — apart from deploying next-generation firewalls, sandboxing, email security

and antivirus solutions — is to make sure we have rock-solid backups, storage and recovery point objectives that are within an organisation's data loss tolerances.

EMAIL COMPROMISE SCAMS

Cybercriminals are stealing billions of dollars simply by sending ever-more-innovative spoofed emails that look quite convincing to the untrained eye. The FBI reported that business email compromise scams increased 2370% between January 2015 and December 2016 and it has been predicted that email scams will lead to close to US\$9 billion (AU\$12.6 billion) in global losses this year.

One important thing to remember is that organisations must use protocols for various types of transactions, producing a system of checks and balances within the organisation that can stop fraudulent transactions from going through. When it comes to

48 | GOVTECH REVIEW 01 2019



phishing attacks through email, users should know how to spot them, so that they never open them by mistake.

CONNECTED DEVICE ATTACKS

The last couple of years have seen many distributed denial-of-service (DDoS) attacks that leveraged hundreds of thousands of hijacked Internet of Things (IoT) devices. These attacks are likely to increase because they often allow hackers to create proxies and hide location data and web traffic, making it difficult for law enforcement to figure out where the attacks are coming from. Trend Micro notes that many IoT devices take longer to patch, so vulnerabilities can remain for longer periods of time.

Other vulnerable devices include aerial drones, wireless home devices and even bio-implants such as pacemakers. Many devices lack built-in security, so users must take responsibility for their own security by ensuring that passwords are secure, and device firmware is always up to date.

HOW TO STAY PROTECTED

As cyber attacks become increasingly frequent and sophisticated, especially ransomware, organisations of all sizes need to deploy a multilayer security approach, including:

- Educating staff they are the frontline defence in most cases, so make sure they know what's required (or not required) of them.
- Limit and manage admin rights not all employees need the same level of access, so make sure that you are giving admin rights only to those who truly need them (particularly with the most sensitive data).
- Patch all endpoint device operating systems, software and firmware as vulnerabilities are discovered.
- Deploy antivirus endpoint protection with updated signatures, endpoint sandboxing and next-gen antivirus.

- Ensure that network sandboxing, next-generation firewalls and email security solutions are in place to block phishing attacks.
- Check your organisation's backup and recovery process with welldefined frequency — you may find you're not backing up critical data that has arrived only recently.
- Finally, make sure your organisation is equipped with next-generation scale-out storage. As data volumes grow, you will need a solution that can grow and protect that data with continuous snapshots that are immutable to ransomware.

It's obvious that investing in technologies and strategies that prevent the latest attacks is the only wise move. When it comes to protecting data and preventing cyber attacks, the tools and strategies described above will easily pay for themselves if they prevent even a single attack.

WWW.GOVTECHREVIEW.COM.AU GOVTECH REVIEW Q1 2019 | 49



he public sector is characterised by change, especially in times of political instability. Case in point: Australia has had six prime ministers in 11 years, with a federal election coming up this year. With any shake-up in leadership, cabinet or MPs, thousands of people step into new roles and are given new responsibilities. For context, according to the ABS, across federal, state and local government there are close to two million public sector employees. And with change on the horizon, there will be a transition process, including for IT.

In identity management, we frequently talk about the user life cycle: joiner, mover, leaver. All of those people moving about an organisation have accounts and access privileges that must be updated, modified or deleted as they join the organisation, move around into various roles and, eventually, leave.

This joiner—mover—leaver life cycle is a colossal identity governance problem. Public-sector IT professionals must remember that where change happens, vulnerability is introduced. For example, Edward Snowden didn't have a 'leave' point, but he did have high-level privileges that he kept as he moved within the US Government. He retained entitlements that he shouldn't have kept

as his role changed, which ultimately gave him inappropriate access to sensitive data and information.

To avoid similar scenarios, it is absolutely critical that public-sector organisations and agencies have a good system and strong processes in place to govern user access to all applications and all data.

Authentication is a critical first step — but alone, it is not enough. In the security industry, we often talk about the five As of security. Authentication (knowing who the person is) is the first, followed by authorisation (knowing what the person can access in a given system), audit (having the ability to create oversight), analytics (visibility and investigation) and administration (that is, managing all of the above across all users, applications and data).

Identity governance provides strong administration, audit and oversight of who has access to systems, resources and data. It provides intelligence and awareness about who has access, what users are doing with that access, and the visibility and control over all corporate applications and data — whether they are in the cloud or on premises.

This last point is particularly important in the public sector. Gartner estimates 80% of all data in the world is stored in files, often in insecure

locations. Many federal, state and local governments and agencies have no visibility into where these files reside, what they contain and who can access this data. This gap has the potential to improperly expose sensitive citizen data to individuals or groups with questionable or even malicious intent.

Public-sector organisations are under increased scrutiny over their defence posture against foreign entities and insiders. They're also often understaffed and under-resourced. Accordingly, approaching identity governance the traditional way — using spreadsheets and manual processes — can lead to a sense of futility, to say the least.

More organisations are recognising the importance of official identity programs, with federal government leading the charge. However, the identity journey for many public-sector organisations is largely just getting started. Taking it to the next step requires a comprehensive approach, one that spans all users - no matter their stance in the organisation - and their access to all data and applications. This is the only way to provide the right oversight and governance controls as they move about the organisation, ensuring the access of all digital identities within the agency.

50 | GOVTECH REVIEW 01 2019 WWW.GOVTECHREVIEW.COM.AU





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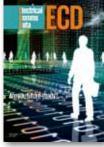




















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