govtech review

CYBER CITIES
ALL SYSTEMS GO FOR AUSTRALIA'S SMARTEST COMMUNITIES

GOVERNMENT SHOULD BE AN **I.T. LEADER**

AVOIDING THE **SIGN-IN, DROP OUT** DILEMMA

SECURITY IN AN ALL-DIGITAL WORLD

Q2 2017
PP100021607

GTR
GOVERNMENT TECHNOLOGY REVIEW

informing technology decision-makers

THE LIGHTSPEED ENTERPRISE

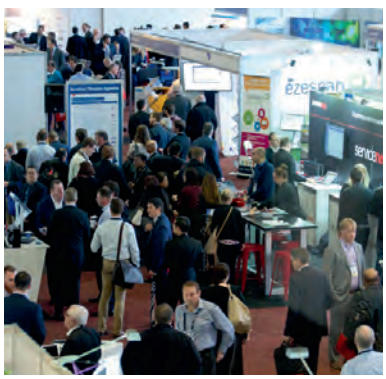
servicenow®

Find out how ServiceNow replaces unstructured work patterns with intelligent, automated workflows of the future so that IT, HR, security, customer service, and everyone in the enterprise can work at lightspeed.

servicenow.com

Contents

Q2 2017



Cover photo courtesy © stock.adobe.com/au/Petrovich12

VEEAM

AVAILABILITY for the Always-On Enterprise™

Veeam makes Gatwick Airport Available. 24.7.365

To enable **Digital Transformation,** enterprises trust Veeam to ensure Availability of all data and applications.

For more information, contact Veeam ANZ:
T 1800 055 929 (AU) T 0800 452 588 (NZ)
Veeam.Sales.ANZ@veeam.com | www.veeam.com

Insider

Building public trust

As our societies become ever more connected, as public services become ever more digitally provided, and as towns and cities become 'smart', it's more vital than ever that governments build public trust in their digital solutions.

Rightly or wrongly, everyday consumers have become somewhat sceptical of the ability of governments and enterprises to make their systems work (eg, #Censusfail), keep their data safe and secure (choose any recent high-profile business hacking or malware scandal) and deliver what is wanted, when and where it is needed (choose any recent telco network or internet outage).

These concerns will only become more acute as the Internet of Things grows, and as 'dumb cities' turn into 'smart cities'. So the challenge is not only to provide safe and secure services, but to also be seen to be doing so. Of course, this is not an insurmountable problem and it's one that all parties involved — both the public and private sectors — are fully engaged in solving. With goodwill, co-operation and the willingness to tackle problems in innovative ways, there's every reason to be optimistic.

The perception challenge aside, fabulous work is being done in towns and cities all around Australia to take advantage of the new capabilities and possibilities presented by digital transformation and the Internet of Things. More and more municipalities, large and small, are aiming to become smart cities. As evidence, you have only to look at the membership of the Australian Smart Communities Association, which, combined, represents more than half the Australian population. Adelaide aims to be the first Gigabit city, Melbourne is already billing itself as Australia's first 'cyber city' and the Sunshine Coast is quietly getting on with the job... as are many other regional councils.

Going 'smart' makes a lot of sense. There are huge efficiencies to be gained, improved services to implement and public goods such as cleaner and safer environments to be gained. And there's a lot of money involved. According to Gartner, the global smart city market is expected to exceed US$1 trillion in 2019 and to rise to US$3.48 trillion by the end of 2026. The federal government's $50 million for infrastructure planning seems like a drop in the ocean in comparison, but it, like other aspects of Canberra's Smart Cities Plan, will help kick-start the smart city revolution... coming soon to a street near you.

Jonathan Nally, Editor
gtr@wfmedia.com.au

wfmedia
connecting industry

A.B.N. 22 152 305 336
www.wfmedia.com.au
Head Office: Cnr Fox Valley Road & Kiogle Street
(Locked Bag 1289), Wahroonga 2076 Australia
Ph +61 2 9487 2700 Fax +61 2 9489 1265

EDITOR
Jonathan Nally
jnally@wfmedia.com.au

FEATURES EDITOR
David Braue
dbraue@wfmedia.com.au

PUBLISHING DIRECTOR/MD
Geoff Hird

ART DIRECTOR/PRODUCTION MANAGER
Julie Wright

ART/PRODUCTION
Linda Klobusiak, Colleen Sam, Wendy Blume

CIRCULATION MANAGER
Sue Lavery
circulation@wfmedia.com.au

COPY CONTROL
Mitchie Mullins
copy@wfmedia.com.au

ADVERTISING SALES
Liz Wilson Ph 0403 528 558
lwilson@wfmedia.com.au

Gemma Burr Ph 0413 220 178
gburr@wfmedia.com.au

If you have any queries regarding our privacy policy please email privacy@wfmedia.com.au

Printed and bound by SOS Print+Media Group
PP 100021607 • ISSN 1838-4307

CITIES OF THE FUTURE

LOCAL GOVERNMENTS AROUND AUSTRALIA ARE IMPLEMENTING STRATEGIC PLANS TO PLACE THEMSELVES AT THE FOREFRONT OF THE SMART CITIES REVOLUTION.

Jonathan Nally


© stock.adobe.com/au/Petrovich12

Twenty years ago, no-one had heard of smart cities. Today, the concept is rapidly growing all around us. And in 20 years' time, any city that hasn't become smart will seem like a quaint and somewhat bewildering relic of the past.

According to analyst firm Gartner, the global smart city market is expected to exceed US$1 trillion in 2019, rising to US$3.48 trillion by the end of 2026. India alone plans to develop more than 100 smart cities by modernising some of its medium-size cities. And Australian cities and towns are jumping on the bandwagon, racing to implement strategies that will improve efficiencies and boost the bottom line, all while providing better services to their communities.

Addressing the Australian Smart Communities Association's annual conference in Adelaide at the end of May, Martin O'Malley — former governor of Maryland, former mayor of Baltimore and a respected authority on technological change — said the South Australian capital is perfectly placed to harness big data and the Internet of Things to make the city the 'smartest' in the country.

"When you have government, business community and thought leaders committed to embracing new technology, you can completely rethink how cities are planned and operated to develop economic and social growth," Governor O'Malley said.

"I've seen a new way of governing emerging — a change that's being brought about by smart cities.

"Cities that understand that spatial intelligence allows us to better reduce crime, better manage traffic and understand what's going on at any given point in time in our city. This visibility to see, track and act ultimately delivers better data-driven decisions."

Named a Cisco 'Lighthouse City' in 2015, Adelaide was an early leader with public Wi-Fi, smart lighting and smart parking. It's now leveraging the possibilities offered by geographic information systems (GIS) technology.

integrating data sets from a variety of sources and visualising them across a time-space continuum, decision-makers can see more clearly the cause and likely remedy of even the most complex of issues," said Brett Bundock, managing director of geospatial technology firm, Esri Australia.

"Adelaide is showing real leadership in this space."

That space includes research into driverless car technologies; smart lighting that lowers energy consumption; environmental monitoring of CO_2, noise and temperature; and innovative plans to make the city a high-speed internet zone.

"The technology is here. By displaying big data, policy and program information on a map, a clear picture emerges that can show the best ways to target resources, track performance and communicate with the public," Bundock said.

The South Australian capital is also the first non-US city to sign up to the Smart Gigabit Communities Program run by US Ignite, which bills itself as fostering "the development of next-generation internet applications with transformative public benefits for the education, energy, transportation, health and manufacturing industries".

"South Australia will develop and share cutting-edge applications with other US Ignite communities," said Science and Information Economy Minister Kyam Maher.

"This has the potential to deliver important advances in areas such as health care, education, public safety and other priority areas using advanced internet applications that are not yet available on today's commercial internet."

Adelaide's Lord Mayor, Martin Haese, said stronger internet services would be the key to Adelaide achieving its smart city and carbon neutral goals.

"We've launched a four-year strategic plan to look at a range of measures including reviewing our own fleets, procurement practices, leading by

>>

"When you have government, business community and thought leaders committed to embracing new technology, you can completely rethink how cities are planned and operated." — Governor Martin O'Malley.

Smart cities expert Martin O'Malley spoke at the Australian Smart Communities Association in Adelaide.

example over the installation of solar PV over more of our buildings," he said.

"Point one in that strategic plan is to become a smart city. This relationship between data speed, the environment and automation to some degree is converging."

SUNNY AND SMART

Located about an hour's drive north of Brisbane, the Sunshine Coast is Queensland's third most populous region, and home to a thriving tourist market. It encompasses such well-known destinations as Noosa Heads, Caloundra and Maroochydore. With a little over 300,000 residents, it ranks as Australia's ninth-most populated area.

But with the population expected to expand by 40% over the next 20 years, Sunshine Coast Regional Council faces significant challenges in coping with demand for services while being pressured by ubiquitous revenue constraints, while also desiring to advance in an environmentally friendly and culturally sensitive manner.

To this end, the council has positioned itself at the forefront of the smart city revolution, with ambitious short- and long-term plans to reinvent the way in which many services are provided, as well as the introduction of new services, all energised by the latest technologies.

The Sunshine Coast partnered with Cisco and Telstra in 2014 to develop a comprehensive plan for the municipality. According to the resulting Smart City Framework, published in 2015, the council aims to use "information and communications technology... to improve quality of life, stimulate economic growth and ensure environmental sustainability throughout our region", with expected benefits to include:

- improved council services, reduced service delivery costs, shorter waiting times and increased customer satisfaction;
- reduced carbon emissions, traffic congestion and energy use;
- increased public safety;
- attraction of more investment and business, with concomitant increased employment opportunities and local business competitiveness; and
- improved town planning and designing.

Michael Whereat, the council's Smart City Framework Co-ordinator, said that part of the plan is to demonstrate that the city is a "cutting-edge, investment-attractive location for people to move to from a business as well as from a residential perspective".

"What we're actually doing is digitising the urban environment, and by that I mean the IoT, the sensor networks, the connectivity arrangements," he said.

"We've been working on it for a number of years and have quite a bit of investment in the way we're doing it.

As one example, the council has smart sensors that turn on watering systems if the weather forecast says there'll be no rain in the next 24 hours. But if it's in a public park, citizens won't get wet because the system can sense their presence using Wi-Fi to detect their mobile phones. "We have that operating right now," Whereat said.

"It's an integration approach where we're not working on silos, we're actually joining the dots together," he added. "So it's that kind of intelligence approach [that makes] Sunshine Coast one of the leading cities in Australia, because we are already applying these learnings in a fairly broad scale across the region."

Whereat said one thing the council is particularly proud of is its flagship smart centre in Caloundra, where members of the community can come in and learn what is being done.

"We use a living lab to test before we deploy at scale, so we learn that these things do in fact integrate at a technology level, not just visually and financially. If they fail, we want them to fail fast and move on to the next thing," he said. "So it's a kind of entrepreneurial approach."

Whereat is also president of the Australian Smart Communities Association, which counts among its members more than 130 local and other governments that represent more than 12 million Australians citizens. The association's 2017 conference brought together experts from around the country.

"The conference is about being able to collaborate and share at a national scale," he said.

Whereat added that although Australia is not the first and not necessarily best in the world when it comes to smart cities, "Australia is a high technology adopting nation, and despite the fact that we're only 24 million people, the fact that across such a huge continent we are deploying agricultural equipment that uses smart farming, through to [solutions for] our urban environment, means that we are pretty well placed".

"It's pretty exciting."

Enabling Wireless Everywhere

WirelessTech commits to provide latest and innovative wireless products, networking technologies and tailored services in pursuit of supporting Australian System Integrators.

- Licensed and Unlicensed Wireless Point-to-Point
- Licensed and Unlicensed Wireless Point-to-Multipoint
- Wireless Mesh Technology
- Wireless Hotspot and Outdoor Wi-Fi
- Multi-WAN Load Balance Routers with VPN Bandwidth Bonding
- Multi-Cellular Mobile Routers
- IP Cameras, NVR, Video Encoders & Decoders
- Enterprise Switches, IP SAN & NAS Storage
- Antennas, POEs, Lightning Surge Protectors
- Customised Network and RF Cable Assemblies
- Touch Monitors

Public Safety

Service Provider

Industrial/Mining

Transportation

WirelessTech

sales@wirelesstech.com.au
www.wirelesstech.com.au
+61 2 8741 5080

DELIVERING MORE EFFICIENT CITIES

Jonathan Nally

TECHNOLOGY GIANT HITACHI RECENTLY ANNOUNCED A STAGGERING $1.25 BILLION 'SOCIAL INNOVATION' INVESTMENT FOR THE AUSTRALIAN MARKET.

Detailing the move late last year, the company's president and CEO, Toshiaki Higashihara, said Hitachi wants to "contribute to resolving issues faced by Australian society, and improving Australian's quality of life, through social innovation and leveraging digital technologies", with one of the focuses being the challenge of increasing urbanisation.

Clearly the company is taking the innovation journey very seriously indeed, and sees Australia as a proving ground for new technologies and strategies. To find out more about the plans, and where the intersection between the public sector and private enterprise lies, we spoke with Tony Whigham, Hitachi Data Systems' government sales director for Australia and New Zealand. Based in Canberra, Whigham is a 25-year industry veteran, having held senior positions with Aruba Networks, Dimension Data, Teradata and Optus.

HOW CAN GOVERNMENTS ADDRESS THE SIZE AND COMPLEXITY OF DIGITAL TRANSFORMATION PROJECTS?

The challenges are manifold. Firstly, 'one size fits all' doesn't apply. While we can leverage experience and practices to a certain extent, the uniqueness in these agencies' business processes complicates matters in finding a blueprint that is applicable to all.

Legacy systems in this context are a challenge but, at the same time, an opportunity for digital transformation. We need to take a step back and look at what really is the most valuable asset to an organisation. Data, whether it is legacy, current or created in the future, stands out as the key asset in any digitisation project, especially when we're looking at complex public–private ecosystems as presented in smart city initiatives.

A key consideration for government agencies is how data can be given independence from its underlying systems and platforms, ie, abstraction. Industry-standard tools are available to ensure data abstraction is carried out in a secure and repeatable manner. Data is now free to be moved onto any systems and platforms the organisation chooses. The ability to leverage and adhere to open standards is a critical step forward to futureproofing the required level of system resilience and ongoing maintenance. The quality and integrity of the data should be the key objective to ensure the avoidance of rapid obsolescence.

Tony Whigham, Hitachi Data Systems

"We need to move beyond the narrowly defined tender process to focus on the broader, intangible benefits an idea will create."

WHAT LESSONS CAN GOVERNMENTS LEARN FROM THE LIKES OF AMAZON OR GOOGLE?

What really stands out when looking at these digital juggernauts is their agility. This links back to talent: the ability to attract and retain high-calibre people has a direct correlation to agility. Governments have already taken a leaf out of the books of the Apples, Amazons and Googles of the world. The 'cloud first' strategy is a good example of where governments are showing their eagerness to leverage the learnings and experiences of the technology leaders.

YOU HAVE A PARTICULAR INTEREST IN LEVERAGING SMART CITY TECHNOLOGIES TO IMPROVE PUBLIC SAFETY. WHAT SORT OF TECHNOLOGIES ARE WE TALKING ABOUT?

What we have available today includes infrastructure and analytics for digital video management platforms (IP cameras and high-definition video); video analytics for any situation, including facial recognition, people counting and licence plate capture; Hitachi Visualization Suite for geospatial visualisation, evidence management and crime prediction; and cloud gateways to connect public and private infrastructure (eg, to connect privately owned CCTV cameras to city-wide surveillance systems).

In addition, we use Pentaho to integrate video analytics with business data sources to provide business and operational intelligence. An example would be using people counting cross-matched with scheduled attendees to show actual attendance versus planned. We continue to invest in smart city solutions leveraging the synergies with the wider Hitachi group. Our mission is to deliver and co-create IoT solutions that make cities in Australia and around the world safer, more efficient and more vibrant.

WHAT ARE GOVERNMENTS DOING WELL, AND WHERE IS THERE ROOM FOR IMPROVEMENT?

Law enforcement agencies and communities around Australia are well ahead in leveraging IP video and high-definition video for security and public safety. In fact, experts say the Asia–Pacific region is leading the world by about five years. Because of our significant investment in next-gen CCTV infrastructure, we are ideally positioned to move to the next transformational stage of public safety, where video analytics are utilised to provide automation and proactive information through situational awareness. Functions such as intrusion detection, object detection, activity analysis and other analytics are used to create alerts to the command and control centre. This moves security from a reactive (and retrospective) operation to a proactive and real-time response function.

An even more advanced stage of this evolution is where video analytics, IoT sensors and multiple data feeds are harnessed to drive business outcomes such as customer experience, resource utilisation and improved work procedures. This takes the public safety concept from the physical security requirements to smart cities that make a real impact on people's lives.

CAN YOU GIVE US AN EXAMPLE OF WHERE THIS IS BEING DONE WELL IN AUSTRALIA?

We work with public and private sector institutions on smart city initiatives. One particularly innovative example is Curtin University's smart campus in Western Australia, where the public safety concept has been incepted to go above and beyond security. Curtin selected Hitachi as a partner to improve the quality of the student and teaching experience, improve asset utilisation and contribute to the community with data-driven insights.

WHAT IS HITACHI GOING TO BE DOING WITH THAT $1.25 BILLION INVESTMENT?

The idea is to become an innovation partner for the IoT era, creating shared value and bringing about positive change to the lives of individuals and the wider society. Urbanisation is one of the critical investment areas, addressing issues such as chronic traffic congestion in our major cities as well as increased demand from citizens for stronger security measures. It is clear that we need more public–private collaboration where government stakeholders and entrepreneurs share their data in order to come up with city-wide solutions.

A recent Hitachi Stakeholder Dialogue on Social Innovation, hosted by PwC, showed that while government agencies want to pursue innovation and value, we need to move beyond the narrowly defined tender process to focus on the broader, intangible benefits an idea will create. The dialogue participants also suggested that a lever which government can pull is incentivisation. This lever can influence the design of ideas, grants, sponsorship and tenders, primarily by making data available.

Hitachi Data Systems
www.hds.com

AVOIDING THE **TURN ON, SIGN IN, DROP OUT** DILEMMA

UNMANAGED CLOUD ADOPTION WITHOUT IDENTITY INTEGRATION CAN UNDERMINE AGENCY GOVERNANCE.

Al Blake, Principal Analyst, Ovum's Australian Government practice

Many years ago, as agencies moved away from a monolithic mainframe architecture and applications proliferated on the corporate network, each agency used its own authentication policy... resulting in end users managing dozens of passwords.

Given how poor most people are at remembering infrequently used, complex jumbles of characters, the rational response was to recycle simple passwords or to write them down. Both techniques significantly undermined security.

Recognising the difficulties of multiple passwords, agencies implemented identity management solutions to allow common credentials to be used across applications. When only one password is required, and it is used several times daily, muscle (or finger) memory will aid user recall and password complexity is easier to enforce.

While the aim of a single password for everything remained largely an aspirational goal, considerable progress had been made on improving the security posture of internal applications. Additionally, as organisations converged on a single user account, removing access on separation became increasingly automated. Gone were the bad old days of networks having hundreds, if not thousands, of dormant accounts for staff long since departed.

However, while the recent rapid adoption of cloud solutions is improving the cost-effectiveness and responsiveness of IT, unmanaged adoption has the potential to undo all that previous good work. Rather than a single account to disable, there could be a different credential for every SaaS application. Even worse, if point solutions are procured in an unmanaged fashion by groups who just want to 'get the job done', the CIO may have no visibility that they even exist.

It has been argued that unmanaged cloud solutions are generally of little importance or risk compared to core business functions, such as finance and payroll, which tend to remain under IT's purview. But this is somewhat naive.

We have only to consider the scenario of a departing ministerial advisor — whose access to the core systems is revoked but who retains access to a cloud-based press-release application — to understand the potential organisational risk.

While much has been written about the financial implications of the move to cloud, such as the ability to fund services from operational rather than capital funds, we have regularly highlighted that the improvement in organisational agility is as, or more, important.

To ensure that this key benefit is not undermined, agencies must avoid the tendency to implement a rigid, costly and time-consuming governance model in response to governance concerns. Rather, the aim should be to design a minimalist model that enables quick adoption of services that comply with a small number of core requirements.

One of these should be to interface with the agency's directory management services — providing end users with the usability of single sign-on and the organisation with the assurance that access to every service a user touches can be reliably terminated when required.


Internet of things
Not the ‘next’ big thing but the ‘now’ big thing
Discover big ideas and actionable insights
teradata.com/IoT
What would you do if you knew?™
TERADATA

CYBERSECURITY IN AN ALL-DIGITAL WORLD

AS ORGANISATIONS IMPROVE THEIR CYBERSECURITY PLANS, A BALANCE NEEDS TO BE STRUCK BETWEEN PROTECTION AND BUSINESS CONTINUITY.

It's no secret that we're living in a digital-first world. According to a report by IDC[1], two-thirds of the CEOs of Global 2000 companies will have digital transformation at the centre of their corporate strategy by the end of 2017. Digital transformation isn't just a trend — it's changing how we interact with banks, service providers and the government. It's leading industries and organisations to refocus and deliver towards the needs of today's highly connected world. As connectivity has become ubiquitous, consumers, employees and partners expect that almost every experience will have a digital component. We're living in the App Age. Today, apps track golf swings (and recommend ways to improve shot performance), as well as give tips to brew the perfect cup of coffee based on personal preference. Digital services help in monitoring the spread of infectious diseases, tracking criminal activity and studying

©stock.adobe.com/au/monsitj

congestion on roads or public transportation to help governments plan infrastructure developments.

This shift towards digital transformation is a long-term process that will span years, and will leverage digital technologies to increase efficiencies. However, the trade-off between convenience and security may inadvertently expose forward-thinking governments to a broader range of vulnerabilities.

The stakes are getting higher for all, as cyber threats have an increased capacity to interrupt a world that prioritises digital interactions. According to a recent report by Trend Micro[2], 2016 represented a record year for enterprise breaches. Asia–Pacific bore the brunt of cyber attacks, experiencing the highest number of attempted threats across different forms, especially for online banking malware and ransomware. 2016 also saw distributed denial-of-service (DDoS) attacks gaining traction worldwide, with breaches turning unsecured Internet of Things (IoT) devices into zombie bots. Telstra's 2017 Cyber Security Report[3] revealed that as many as 60% of Australian businesses have been victims of ransomware in the past 12 months, highlighting an emerging issue that can have serious impacts on productivity.

Australia experienced a nationwide crisis in 2016, when our census was hit by a major DDoS attack, preventing thousands of Australians from taking part in the census. Additionally, the attack led to a hardware failure, the overload of a router and a false alarm about the attack, causing a total downtime of 43 hours. This caused embarrassment for the Australian government, prompting public outcry from citizens and the opposition. The government is taking the threat extremely seriously, and has recently unveiled a comprehensive strategy document[4], describing cybersecurity as "a fundamental element of our growth and prosperity in a global economy".

While the tools used may evolve over time, the strategy to combat these threats remain focused on two main areas: prevention and creation of solid business continuity plans[5]. Prevention efforts focus on careful treatment of privileged accounts and control of permissions, ensuring regularly updated antivirus and anti-malware scans and awareness training for employees. While it remains paramount, the creation of a detailed business continuity plan will grow in importance in an all-digital world, where everyone will rely on and expect 24.7.365 availability of data and services.

Creating a solid business continuity plan depends on conducting regular data backups, along with verifying the integrity of those backups and securing them by ensuring they are disconnected from the computers and networks they are securing. The timeless rule for failure scenarios is the 3-2-1 backup rule — 3 copies of the company data should be saved on 2 different media and 1 copy should be off-site. The '1' in the 3-2-1 rule continues to play an important role, especially in an all-digital world, as it does not allow for direct data access, providing protection against ransomware.

Even as organisations improve their cybersecurity plans, a balance needs to be struck between protection and business continuity. Without constant availability to data and services, downtime caused by cyber attacks will have repercussions beyond simple inconvenience.

REFERENCES

[1] IDC, IDC FutureScape: Worldwide Digital Transformation 2016 Predictions

[2] Trend Micro, TrendLabs 2016 Security Roundup: A Record Year for Enterprise Threats

[3] Telstra, https://www.telstra.com.au/content/dam/tcom/business-enterprise/campaigns/pdf/cyber-security-whitepaper.pdf

[4] Australian Federal Government, https://cybersecuritystrategy.dpmc.gov.au/

[5] FBI, (2016, April 29). Incidents of Ransomware on the Rise

Veeam Pty Ltd
www.veeam.com

TRANSPORT CANBERRA AND CITY SERVICES MAPS TREE CANOPY FROM AERIAL LASER SCAN WITH FME AND 1SPATIAL

1Spatial has been engaged by Transport Canberra and City Services (TCCS) to analyse and extract aerial laser scanning data to accelerate the process of establishing baseline data for Canberra's urban tree canopy coverage.

The relationship between climate change challenges, sustainability goals and community expectations are key drivers in TCCS's development of an urban tree planting program.

Informative and current datasets are being used to inform management strategies by overlaying age, density and condition data and proposing future canopy density targets.

The establishment of current baseline data for Canberra's urban tree canopy coverage was essential to the program. In this respect, two datasets were available: a 2010 ground-based audit of trees in streets, verge areas, open spaces and parks; and new aerial laser scanning LiDAR (Light Detection and Ranging) data for the majority of urban areas across Canberra.

©stock.adobe.com/au/Roxana

1Spatial
www.1spatial.com/au

With a tight timeframe of four weeks to complete the project, TCCS needed to quickly analyse and extract the LiDAR data relating to trees and combine it with the ground-based audit data. After evaluating different tools and methods, TCCS chose Safe Software's FME application and engaged 1Spatial, a Safe Software Value Added Reseller and Platinum Partner, for its expertise in analysing and extracting LiDAR data to accelerate the process.

"We were keen to use FME because we have an existing skills base," TCCS Acting Manager, Asset and Data Integration Daniel Goodwin said.

"FME is more user friendly than other approaches which require more specialised expertise. It also provides full transparency into the process, which makes it very good for iterative development. With other tools, we weren't sure we could get the outcome we wanted in the available timeframe."

A 1Spatial consultant was contracted for two weeks to identify tree-related data points in the LiDAR dataset and generalise them to create smooth representations of the tree canopy.

"Within a week, 1Spatial had a good product output, and then we ran some refinements over the next week," said Goodwin.

"We used out-of-the-box smoothing algorithms in FME to generate very compelling data for our analysis."

As 1Spatial was able to deliver ahead of schedule, the Directorate could save time and use its own FME skills more productively. This included verifying the tree canopy data, integrating it with other datasets and creating mapping tools for strategic tree planting and management.

When the final tree canopy data was displayed in TCCS's Geographical Information System (GIS), with canopy coverage calculated as a percentage, the value of the LiDAR data was immediately obvious.

"The LiDAR data was crucial in determining the canopy cover," said Goodwin. "Publicly available web mapping tools tend to merge urban and non-urban areas and overestimate urban tree cover. When we focused on the urban areas we have control over, we could see which suburbs and streets have less canopy cover than others and better target our tree management strategy."

TCCS can also use the new data to facilitate implementation of the urban tree planting program and communicate with key stakeholders. An interactive web mapping tool is currently being developed to be used by urban tree planners, designers and contractors.

"FME is a great tool for handling large volumes of aerial LiDAR data and integrating it with other geospatial datasets," 1Spatial Australia General Manager Natalie Cooney said.

"Although aerial laser scanning is now becoming common, relatively few people have the skills to manipulate LiDAR data, and we were delighted to be able to assist TCCS."

To read the full case study, visit: www.1spatial.com/transport-canberra-city-services.

TALKING TECH IN GOVERNMENT

Jonathan Nally

AUSTRALIA'S PREMIER GOVERNMENT ICT SHOWCASE IS COMING UP IN AUGUST.

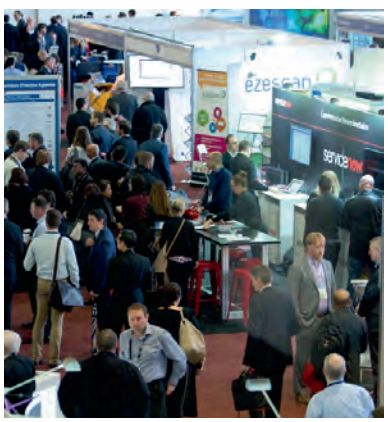
Over the past decade, the annual Technology in Government conference and exhibition has become the place for ICT leaders to meet and share information. A lot of that can be credited to Project Director James Delliquanti, who has also become the face of the event... particularly since he decided to grow a fantastic handlebar moustache. With the event just around the corner, we sat down with James to find out exactly what it is that has made Technology in Government such a hit.

IN A NUTSHELL, WHAT DOES THE EVENT OFFER DELEGATES?

So often conferences are just focused on the sponsors and creating a 'market' for what it is they are trying to sell. We like to think we took that agenda out of the equation many moons ago. With a core advisory board, we conduct a quarterly review to ensure we have the right speakers, the right topics and the right sponsors to fit the delegates' criteria... not the other way around. By providing a place for CIOs, CTOs, heads of IT and their staff a chance to network, problem solve and learn from others — not just with those from Australia but also from other nations that might be ahead of us on a certain learning curve — we have created a strong reason to take two days out of the office for growth and enrichment.

WHO ARE SOME OF THE HEADLINE SPEAKERS FOR 2017?

We have Jeanette Hanna-Ruiz, NASA's Chief Information Security Officer, and



Technology in Government's Project Director, James Delliquanti

Rachel Neaman, the former chair of Digital Leaders in the UK. We also have Barbara Cohn, the first Chief Data Officer of New York State, and Winn Nielsen, who is Head of Projects for the Danish Tax Authority.

Our Australian line-up includes Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, and John Dardo, Chief Digital Officer at the ATO. We also have Lisa Rauter, First Assistant Secretary, Department of Foreign Affairs and Trade. And for the first time, we have a state and local ICT community stream, with speakers that include Peter Worthington-Eyre, Chief Data Officer, Department of Premier and Cabinet in South Australia; Damon Rees, Chief Information and Digital Officer, NSW Department of Finance, Services and Innovation; and Dr Rachna Gandhi, CEO of Service NSW.

AND WHO ARE SOME OF THE VENDORS I CAN VISIT?

Being in August each year, our event is the first after the new budgets are released, so I have had quite a few regular delegates tell me that they do a bit of 'shopping' on the exhibition floor. We have a very nice core of diamond, platinum and gold sponsors that come back year after year, such as ServiceNow, Veeam, Leidos, ThoughtWorks and Epicon, to name just a few. But we also have a cool group of young, Australian-owned and -operated companies that want to do business with departments and agencies. I love seeing new companies emerge with something different or something that is just better.

FINALLY, I UNDERSTAND YOU'VE REACHED AN IMPORTANT GENDER DIVERSITY MILESTONE?

This is my most proud achievement in regards to the 2017 event. We were guided by a government initiative to work towards gender diversity on the C-suite speaker program. And I'm very glad to report that my production team has accomplished this, with close to 60% of the speakers being women in the ICT space.

Technology in Government,
1–2 August 2017
National Convention Centre, Canberra
techingov.com.au

THE NEED TO LEAD

Sarah Adam-Gedge

CAN THE FEDERAL GOVERNMENT GAIN THE TRUST OF THE PUBLIC AND START LEADING THE WAY IN DIGITAL SERVICES?

How often have you hesitated to enter your personal details when completing a shopping transaction online, logging into your bank account or even creating a new social media profile? The reality is, often there is little to no hesitation.

Recent research by the ACMA has revealed that Australians have multiple digital identities, managing between five and 50 login and password combinations to conduct their day-to-day online activities. We've come a long way in terms of digitisation and are generally comfortable with providing personal data to organisations and services. So why is there hesitation when the request comes from government?

The federal government's Digital Transformation Agency (DTA) will be launching an identity federation hub in 2017, which will both verify the identity of individuals and allow individuals to access government services online. But while this should be a win-win for all parties — eliminating the need for us to re-enter details, as well as streamlining the way we engage with government services — many people have reservations.

From a government perspective, developing a digital-first approach is crucial to moving one step closer to creating a truly digital government and positioning our nation as a leader in the global economy. From a citizen perspective, however, the reluctance to adopt a digital identity stems from a perception issue: firstly, of the government's inability to protect, and potential to misuse, personal information; and secondly, of a lack of confidence in government departments' capabilities to implement a change of this scale.

The DTA is already working to shift these perceptions and take into account what drives citizen confidence.

To do this, it can capitalise on similar organisational success; for example, the ease of use Facebook provides, the functionality of eBay and the security offered by the banks' online services.

Success will not only encourage other government services and organisations to consider digital transformation projects, but also go a long way towards building that all-important confidence and advocacy among the public who will use the service.

One government department that has recently undergone a successful digital transformation project is the Department of Industry, Innovation and Science (DIIS). It was one of the first to recognise the need for a digital-first approach. As part of the Single Business Service program, the DIIS sought to develop a new, customer-centric website to make it easier for businesses to find and digest the information they need. Previously, businesses had struggled to access government services and navigate the wealth of government information to find what they needed or who to talk to. Users wanted less clutter, clearer content and features to help them find information quickly and easily.

Avanade worked closely with the DIIS to deliver a newly designed business.gov.au website, which improved the site's customer experience via greater personalisation, user-centric design and mobile access. The results have been strong. Over the past year, business.gov.au had over 13 million unique page views and the business.gov.au contact centre handled over 80,000 calls. User studies have revealed the website's users are engaged and at ease with the updated platform.

The project was a success for two reasons. Firstly, it was implemented smoothly and with minimal disruption. Secondly, it was developed with a focus on how it would benefit the end users. This has allowed the DIIS to streamline the user experience and improve navigation to ensure users quickly find what they are looking for, freeing them to focus saved time and energy on their own business. Because of this excellent user experience and site navigation, these users are now advocates, helping to minimise scepticism from others when it comes to the new and improved digital service.

DIIS has set an example to follow by being innovative on the inside and out. So what best practice can be taken from the project and applied to the DTA's implementation of the identity hub, particularly in terms of transforming perceptions?

To begin with, any new service should bring clear benefits to the end user. The DIIS had a human-centric approach. It listened to what end users wanted and incorporated this into the new service; the DTA's success could be achieved by emulating this. According to a recent report by Deloitte, high-quality digital experiences are valued by citizens and will naturally result in greater uptake and satisfaction.

According to Deloitte, high-quality digital experiences are valued by citizens, and will naturally result in greater uptake and satisfaction.

Having a dedicated multidisciplinary digital transformation team, with a key focus on managing the implementation and progression, is also paramount for a smooth implementation. This team would possess skills across strategy and strong technology expertise, as well as being accompanied by tried and proven methodologies.

Finally, the government needs to build citizen confidence in its ability to protect user data. One way to go about this is by establishing open, honest and transparent communication with the public. Keeping the public updated, taking them along on the journey and having the ability to tell the story of how value and outcomes will be delivered in a meaningful way can make a world of difference to the willingness to accept the change being proposed.

Another way of building confidence is to look at organisations that do it well and analyse their actions. It's about deciding what you want to be known for and knowing how to achieve it. For example, when it comes to citizen confidence, there's no denying the banks lead the way. The financial details Australians provide to their banks on a regular basis are arguably the most valuable and potentially vulnerable data that can be shared. Despite this, the rapid rise of online banking tools amongst Australian bank customers speaks volumes to the confidence financial institutions have earned from citizens.

There is a lot to gain from embracing digital change. The world is quickly moving towards a digital future, and successful digital transformation projects will help governments transform their operations, meet the increasing demand of the 'digital customer' and position Australia as a world leader in the digital era.

Sarah Adam-Gedge, Managing Director, Avanade Australia

CURTIN UNIVERSITY ADVANCES SMART CAMPUS VISION WITH HITACHI IOT SOLUTION

Ian Callahan, COO, Curtin University

Curtin University has selected Hitachi to deploy an Internet of Things (IoT) solution to advance its vision of a smart campus that enhances the student experience, improves classroom learning and ultimately attracts more industry to collaborate on data-driven research. Curtin is achieving this by partnering with Hitachi to co-create solutions that harness IoT data through advanced analytics to provide insight into the daily running and utilisation of the campus.

Curtin University has more than 60,000 students and 4000 staff on 300,000 m^2 of floor space. It is Western Australia's largest and most culturally diverse university, and has one of Australia's largest international student populations.

Ian Callahan, chief operating officer of Curtin University, said: "Understanding our campus operations and building utilisation has become a major factor in Curtin's smart campus initiative. With the Hitachi IoT solution, we can collect data using a variety of sensors to gather information on building trends, study patterns and course attendance that can ultimately be used to improve student experience and enhance learning."

Ultimately, these data insights allow Curtin University to generate contextual information about the life cycle of the student, the day-to-day reality of a staff member, the activity pattern of a lecture theatre, and the dynamics and environmental health of a library.

Callahan added: "We are effectively creating a living laboratory that is an open invitation to our own researchers and scientists from other universities to use our campus to discover and innovate with data-driven research. Hitachi demonstrated not only technology leadership but approached us with a very open mind, to participate in that living environment and collaborate with others."

With the Hitachi solution, the university will be able to combine video data with operational data across its campus facilities to provide analytics that support a smart campus. This is achieved through the integration of Hitachi Visualization Suite, Hitachi Video Analytics, Pentaho, Live Face Matching and Hitachi Data Systems Infrastructure and Compute. The single analytics dashboard provides the real-time knowledge the university needs to make informed decisions about their classes, operations and future requirements.

"Curtin University is a prime example of forward-thinking organisations that have challenged Hitachi to develop its video analytics solutions to go beyond surveillance and public safety. They are effectively pioneers of digital transformation," said Mark Jules, vice president of public safety and smart city solutions at Hitachi Insight Group.

"We're excited to be co-creating a comprehensive IoT-enabled solution with them and we look forward to working with Curtin University and their research partners to accelerate future innovation through our ongoing collaboration."

Hitachi Internet Of Things (IoT) Products and Solutions
hds.co/xkx

ATTEND AUSTRALIA'S LARGEST GOVERNMENT TECHNOLOGY EXPO

Proven. Established. Respected

11TH ANNUAL Technology in GOVERNMENT

1 - 2 August 2017 | National Convention Centre Canberra

• 2000+ Attendees • 100+ Exhibitors • 6 Streams

Technology in Government is a **MUST-ATTEND EVENT** for public sector technology

WHY ATTEND?

- ✔ **FREE SEMINARS** over 2 days
- ✔ **LIVE DEMONSTRATIONS** of emerging public & private ICT technologies
- ✔ **MEET 100+ EXHIBITORS** demonstratating the most advanced technologies driving ICT initiates at all levels of government
- ✔ **NETWORK** with senior ICT international & local leaders

Register Now for a FREE Visitor Pass

FREE EXPO OPENING TIMES

Tuesday 1 August 2017
10:00 - 5:00pm

Wednesday 2 August 2017
10:00 - 3:30pm

www.techingov.com.au

Technology in Government or **@techingov** | **@Techingov_AU** or **#TechinGovAU** | **Technology in Government**

DAY ONE AGENDA | TUESDAY 1 AUGUST 2017

MORNING PLENARY

8:50 Chairperson's Opening Remarks

9:00 Leveraging New Age Technology to Enhance Security and Functionality
John Dardo, Chief Digital Officer, **Australian Taxation Office**

9:20 Harnessing Emerging Technology: AI & Machine Learning
Chris Pope, Vice President of Strategy, **ServiceNow**

9:40 PANEL: Infrastructure Versus Cloud
Moderated by Quantum

10:00 Speed Networking

10:20 Morning Tea and Coffee

FEDERAL GOVERNMENT FOCUS DAY

FUTURE OF WORK

11:00 Creating an In-trapreneural Friendly Environment
Lisa Rauter, First Assistant Secretary, innovationXchange, **Department of Foreign Affairs and Trade**

11:30 Rise of the Platforms: Implications for Government Digital Strategy
Scott Shaw, Head of Technology, **ThoughtWorks**

11:50 Lunch and Exhibition Break

13:30 Roundtable Discussions

PARTNERSHIPS

14:30 Leveraging Changes to Procurement Regulation with eInvoicing
Emma Dobson, Director, **Westpac,** Member, **Digital Business Council** and Chair of the **Adoption Working Group**

14:50 Tackling Cyber Risks With A Culture of Collaboration: The ASX 100 Cyber Health Check
Amanda Harkness, Group General Counsel & Company Secretary, **ASX Limited**

15:10 Afternoon Tea and Coffee

STATE AND LOCAL GOVERNMENT FOCUS DAY

TRANSFORMATION

11:00 Ground-breaking Data Analytics from Australian Government Agencies
Peter Worthington-Eyre, Chief Data Officer, **Department of Premier and Cabinet, SA**

11:20 Harnessing the Benefits of Activity Based Working (ABW)
David Jackson, Manager of Information Services, **Cardinia Shire Council**

11:40 Ten Key Components of Successful Digital Service Offerings
Paul Shetler, *Digital Government Expert*

12:00 Lunch and Exhibition Break

13:30 Roundtable Discussions

DIGITAL

14:30 Creating a State of the Art Digital Environment
Damon Rees, Chief Information and Digital Officer, **NSW Department of Finance, Services and Innovation**

15:00 PANEL: How Can State Governments Collaborate in the Digital Age
Panellists:
Damon Rees, Chief Information and Digital Officer, **NSW Department of Finance, Services and Innovation**
Peter Worthington-Eyre, Chief Data Officer, **Department of Premier and Cabinet SA**
Chris Pope, Vice President of Strategy, **ServiceNow**
Scott Shaw, Head of Technology, **ThoughtWorks**

15:30 Afternoon Tea & Coffee

AFTERNOON PLENARY

16:10 How All Staff Members Can Reach 'Efficient' Levels of Digital Literacy
Rachel Neaman, Former Chair, Digital Leaders UK; *Specialist in digital strategy, transformation, skills and inclusion (UK)*

16:30 PANEL DISCUSSION: Diversity and Inclusion in Government IT and Digital Services
Panellists:
Rachel Neaman, Former Chair, Digital Leaders UK; *Specialist in digital strategy, transformation, skills and inclusion (UK)*
Paul Shetler, *Digital Government Expert*

17:00 Networking Drinks and Announcement of Top 3 Finalists of ServiceNow Hackathon

DAY TWO AGENDA | WEDNESDAY 2 AUGUST 2017

PLENARY

8:50 Chairperson's Opening Remarks

9:00 Work Life in the Future - What to Expect in 2030
Shara Evans, Technology Futurist and CEO, **Market Clarity**

9:20 Refreshing IT to Improve Organisational Collaboration and Productivity
Michael Hirschfeld, Chief Information Officer, First Assistant Secretary, Information Technology and Workplace Division, **Department of Finance**

9:40 Veeam's Solution-Based Thought-Leadership Session

10:00 Roundtable Discussions

11:00 Morning Tea and Networking Break

11:30 Delegates break into four dedicated streams – selected prior to the event:

SECURE GOVERNMENT FOCUS DAY
BUILDING CYBER RESILIENCE

11:30 Chairperson's Opening Remarks

NATIONAL CYBER SECURITY AGENDA

11:40 Cyber Security Strategy Recommendations
Alastair MacGibbon, Special Adviser to the Prime Minister on Cyber Security, **Department of Prime Minister and Cabinet**

12:10 Achieving Cyber Security ROI and Developing NASA's Risk-Based Framework
Jeanette Hanna-Ruiz, Chief Information Security Officer, **NASA (National Aeronautics and Space Administration) (USA)**

12:40 The Future We're Building
Jeanette Hanna-Ruiz, CISO, **NASA** & **Alastair MacGibbon**, Special Adviser to the Prime Minister on Cyber Security, **Department of Prime Minister and Cabinet**

13:10 Lunch and Exhibition Break

14:40 Securing Millions of Highly Sensitive Electronic Health Records
Anthony Kitzelmann, Chief Information Security Officer, **Australia Digital Health Agency**

SECURE MOBILITY

15:00 Privacy – Making Best Practice the Only Practice
Angelene Falk, Deputy Commissioner, **Office of the Australian Information Commissioner (OAIC)**

SECURITY BY DESIGN

15:20 **MINI-WORKSHOP:** Why Cyber Security Has Failed, and How to Fix It
David Lacey, Chief Information Security Officer; **BNP Paribas;**
Father of ISO 27000 **(UK)**

16:00 Closing Remarks from Chair

CITIZEN EXPERIENCE FOCUS DAY
BUILDING BETTER OUTCOMES FOR GOVERNMENT AND CITIZENS ALIKE

11:30 Chairperson's Opening Remarks

SERVICE DELIVERY, DIGITAL TRANSFORMATION & CUSTOMER EXPERIENCE

11:40 **MINI-WORKSHOP:** How We Can 'Humanise' Technology and Digital Change
Facilitator: Dr Rory Gallagher, Managing Director APAC, **The Behavioural Insights Team**

12:20 The ATO's Transformation Agenda
Jane King, Deputy Commissioner, Design and Change Management, **Australian Taxation Office**

12:50 Lunch and Exhibition Break

14:20 Driving Service Improvement Through Digital Channels: The Service NSW Experience
Dr Rachna Gandhi, Chief Executive Officer, **Service NSW**

14:50 South Australia's Customer, ICT, and Digital Transformation Perspective
Sinead O'Brien, Executive Director, Office for Customer, ICT & Digital Transformation, **Department of Premier and Cabinet**

15:20 How We Improved Digital Operations Service Integration
Rob Craig, Chief Operating Officer, **icare**

15:50 Closing Remarks from Chair

FUTURE SERVICES FOCUS DAY
SERVICING TOMORROW'S DIGITALLY CONNECTED COMMUNITY

11:40 Chairperson's Opening Remarks
Mick Motion-Wise, Technology Architect, **Federal Government**

BLOCKCHAIN

11:50 **CASE STUDY:** Public and Private Sector Partnering to Create a Blockchain Revolution
Sophie Gilder, Head of Blockchain, **Commonwealth Bank**

12:10 **PANEL:** Unlocking the Untapped Potential of Blockchain
Moderator:
Nick Giurietto, CEO & Managing Director, **Australian Digital Currency & Commerce Association**
Panellists:
Sophie Gilder, Head of Blockchain, **Commonwealth Bank**
Loretta Joseph, Advisor, **AIMS Capital Group Pty Ltd**
Jennifer O'Rourke, Assistant Deputy Director, Office of Entrepreneurship, Innovation & Tech, **Illinois Department of Commerce and Economic Opportunity (USA)**

12:50 **INTERNATIONAL CASE STUDY:** Insights Behind the Illinois Blockchain Initiative
Jennifer O'Rourke, Assistant Deputy Director, Office of Entrepreneurship, Innovation & Tech, **Illinois Department of Commerce and Economic Opportunity (USA)**

13:10 Lunch and Exhibition Break

DIGITALISATION

14:20 **INTERNATIONAL CASE STUDY:** Digital Initiatives at the Danish Tax Authority
Winn Nielsen, Head of Projects, **Danish Tax Authority (DK)**

14:40 Leidos Solution Based Thought-Leadership Session
Andrew Collins, Chief Technology Officer, Australian Taxation (ATO) Program, **Leidos Australia**

15:00 Strategies to Enable the Successful Digitalization in Government
Karin Geraghty, Chief ICT and Digital Strategist, **Department of Premier and Cabinet, SA**

15:20 **CASE STUDY:** Service NSW's Knowledge Management Programme
Bryan Williams, Chief Knowledge Officer, **Service NSW**

15:40 Closing Remarks from Chair
Mick Motion-Wise, Technology Architect, **Federal Government**

ICT PROCUREMENT FOCUS DAY
BUILDING BETTER OUTCOMES FOR GOVERNMENT AND CITIZENS ALIKE

11:40 Chairperson's Opening Remarks
Coretta Bessi, former Chief Procurement Officer, **NBN Co.**

INNOVATION IN ICT

11:50 **CASE STUDY:** Shaping ACT's Digital Strategy
Ole Nielsen, Deputy Chief Digital Officer, **ACT Government**

12:10 **CASE STUDY:** A Look at the Transformation Affecting Defence
Peter Corcoran, Assistant Secretary ICT Architecture, **Department of Defence**

12:30 **CIO'S PANEL:** Developing an Effective ICT Strategy
Panellists:
Giles Nunis, Government Chief Information Officer, **WA Government**
Karin Geraghty, Chief ICT and Digital Strategist, **Department of Premier and Cabinet, SA**
Michael Hirschfeld, Chief Information Officer, First Assistant Secretary, Information Technology and Workplace Division, **Department of Finance**

13:00 Lunch and Exhibition Break

ICT TRANSFORMATION

14:40 **CASE STUDY:** Sydney Water's ICT Transformation
Jo-Ann Pass, Head of Digital Operations, **Sydney Water**

15:00 Harnessing the Power of the Cloud
Giles Nunis, Government Chief Information Officer, **WA Government**

DATA

15:20 Government as a Platform
Pia Waugh, Project Manager, **AUSTRAC**

15:40 **INTERNATIONAL CASE STUDY:** NYS's Award Winning "Quality by Design" Open Data portal with NY's First Chief Data Officer
Barbara Cohn, Former Chief Data Officer, **New York State (USA)**

16:00 Closing Conference Remarks
Coretta Bessi, Former Chief Procurement Officer, **NBN Co.**

FREE EXPO SEMINARS

Not only will you be able to meet the best in-class leading solution providers, you can build your own programme over the two days and attend as many FREE seminars as you can fit in!

Don't miss these key seminars:
The Aerial Advantage: How Drone Technology is Changing the Way We Work **Derek Feebrey**, CEO, **Hoverscape**
Optimising Real-World Government Service Delivery and Policy Through State-of-the-Art Data Analytics **Charlie Farah**, Director Market Development - Healthcare & Public Sector APAC, **QLIK** **Rod Stewart**, Presales Team Lead - Public Sector, **QLIK**
Blockchain 101 **Mark Toohey**, Director, **TBSx3**
Weak Links in the Security Chain – Integrating Planning, Implementing, and Operations? **Tom Crampton**, Managing Director, **Trusted Securities**
Offensive Cyber Security Training for IT Professionals **Ravi Chopra**, Senior Lecturer in Networking and Cyber Security, **Canberra Institute of Technology**
IT Governance in a Hybrid World **Anthony Chia**, Head of Architecture and Consulting, **Epicon**
Biometric FRT Image Capture Standards – Database Enrolment Image Matching Requirements **John Rule**, Managing Director - **Brands Australia, NZ & Asia.**
The Cycle of Sound – Optimise Every Workspace Through the Power of Sound **Stephen Cullen**, Account Director Enterprise and Government, **Polaris Communications**
The Rise of the Connected Employee **George Mikhael**, Enterprise and Government Account Manager, **BlueJeans**
The Use of Blockchain in Government **Mark Toohey**, Director, **TBSx3**

(View the full agenda online: www.techingov.com.au)

Register your FREE EXPO pass today!

HACKATHON BY servicenow

Attendees can come with their team, get creative, and work towards a solution they can show off. In a mere 7 hours of hacking, one team will emerge victorious, dazzling their peers and win a grand prize! **Will it be you?**

Details:

Wednesday 1st August
09:00 - 16:00 Hackathon
17:00 - 18:00 Networking Drinks + Top 3 Finalists Announced

Thursday 2nd August
13:30 - 14:00 Winner's Pitch & Presentation

This event is open to everyone and anyone!

WANT TO SPONSOR OR EXHIBIT?

Technology in Government is a premium branding, market and lead generation platform for ICT solutions providers.

If you offer products, services or solutions that you feel could play a part in public sector ICT modernisation, and would like to engage with the biggest gathering of government decision makers in Australia, you should sponsor or exhibit at this event.

CONTACT US TO GET INVOLVED

James Delliquanti
(02) 8908 8515
james@acevents.com.au

www.techingov.com.au (02) 8908 8555

BUILDING THE DIGITAL FUTURE OF EMERGENCY SERVICES

TECHNOLOGY NEEDS TO IMPROVE HUMAN INTERACTION, NOT HINDER IT.

We have a long way to go to reach the digitally powered future that pop culture like Black Mirror depicts. But so long as the government works proactively with the private sector, we will be able to ensure the continued integration of technology into day-to-day life to positively transform into so-called 'smart cities'.

Imagine a scenario where emergency services are deployed to a car accident before a 000 call is even placed. The paramedics dispatched to the incident have detailed information about how many people are involved and what potential injuries they have sustained before arrival. And the doctors in the hospital have full visibility into patients' conditions as they're being transported, accelerating the handover and increasing the likelihood of successful treatment.

This isn't a wish list — it's already possible. There are currently several projects in Australia and abroad in which government departments have combined with technology companies to deliver similar outcomes.

From 2018, the European Union will formally launch eCall, an initiative whereby all new, type-approved cars sold in member nations will include an emergency button so that drivers can make near-instant '112' contact — 112 being Europe's 000. The button sends data from the in-vehicle system (IVS) to the public-safety answering point (PSAP), which receives the 'minimum set of data' (MSD). This will help emergency services reach an incident much faster, respond appropriately and save more lives.

Meanwhile in Australia we have smart projects inside organisations such as healthcare institutions that are implementing comprehensive communications systems to optimise workflows and subsequently improve treatments. As these projects reach full deployment in the next few years, we'll see hospitals creating dynamic teams with devices that package critical data to enable a streamlined experience for patients and staff. Telematics from ambulances will feed diagnostics directly to doctors, who will have visibility into monitors to suggest on-the-go treatments. Meanwhile, automation will ensure testing data (such as blood tests, scans and so on) are fed quickly to surgeons, with real-time notifications providing critical updates inside operating studios.

These scenarios demonstrate the integration of various types of technologies — and the willingness of users to incorporate them into day-to-day life. While these examples paint a positive outlook for public safety and emergency services, they only scratch the surface when it comes to the potential transformation impact technologies can and will have on the sector.

The likes of artificial intelligence are only just starting to move beyond evaluation to fruition inside a limited number of leading emergency-services bodies. Automation is becoming more widespread, with biometrics following closely behind as interpretation capabilities constantly improve.

So what can we expect in the next five to 10 years? We will see comprehensive sensors in cars, smartwatches and clothing to enable near-instant assessment and diagnosis. We'll also see elaborate comms devices with the ability to aid bystanders in administering first instance care. That's just the beginning.

However, to reach these heights of advancement, there needs to be continued change from government. As a nation we're on the right path, but we need to move more quickly to appropriate our leadership. There's plenty of work to be done to allow us to capitalise on the benefits of technology, particularly with the increasing traction of artificial intelligence (AI) and analytics that is developing.

That starts with ensuring that technology is a priority, not just an added extra. It needs to be implemented in a way that it will improve human interaction, not replace or hinder it; this will be the cornerstone of eliminating challenges around adoption from users and suppliers.

Avaya Australia Pty Ltd
www.avaya.com.au

Peter Chidiac,
Managing Director
A/NZ, Avaya

Intelligent PDUs — the key component to a greener, more secure datacenter

Jerry Chang, the Assistant Manager of Green Energy Business Development Department of ATEN

The energy needs of server rooms, the heart of an enterprise, are escalating dramatically year by year. In 2015, the total power consumption of server rooms worldwide came to 416.2 terawatts per hour, greatly exceeding the total power usage of advanced countries such as the United Kingdom. Add on to that the fact that power consumption resulting from the cloud will increase 63% by 2020, according to a Smarter 2020 report, and the magnitude of the issue becomes clear.

The high-density server rooms fueling the ongoing expansion of the cloud represent a fixed expenditure for enterprises in order to ensure smooth business operations. But as energy conservation and carbon reduction has become a critical global mission, businesses now must find a way to make full, efficient use of power while still reducing IT costs. This is the vital role played by the power distribution unit, or PDU.

The PDU has already existed in server rooms for 20 years as the unsung hero behind the scenes. Its key function is to ensure the supply of energy within the cabinet while at the same time avoiding equipment damage resulting from power surges or lightning interference. But as datacenter environments have grown increasingly complex, so have a PDU's functions become more diverse in step, including the intelligent monitoring of power usage, remote management, outlet control, phase detection and outlet metering functions, and threshold alarms, all of which enable efficient energy management and conservation.

However, the biggest challenge for server rooms remains how to precisely control temperature and humidity. Overly high temperatures can affect a server's reliability; conversely, too low temperatures, while not impacting equipment operation, can drive up power consumption and costs. And now, businesses face trends such as security, intelligence, and environmental

protection along with new demands in power connection, measurement, acquisition and control.

Enter the intelligent PDU and energy management software. "Energy intelligence" helps IT managers find the optimum temperature and humidity control mechanism to achieve maximum energy savings. It does this by providing a visualized version of data gathered by sensors through which to manage the equipment. This data is then transferred to the air conditioning system, making it far easier for that system to control the production of cool air and keep the server cabinet operating at the appropriate temperature.

Accordingly, there are a variety of standards by which server room temperatures are measured. Recommendations from the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) state that temperatures should be maintained at between 18 °C and 27 °C. Meanwhile, temperature safety and environmental controls efficacy standards are set in line with the Rack Cooling Index (RCI) and Return Temperature Index (RTI). RCI pertains to server room safety and is used to determine whether IT equipment cooling is properly managed and falls within the temperature parameters set by ASHRAE. The purpose of the RTI, meanwhile, is to ensure there is no net by-pass air or net recirculation air during the cool air transfer process. These two indexes enable intelligent energy software to guide the energy saving process and optimize cooling.

An intelligent PDU must be able to gain immediate, real-time access to energy consumption and temperature / humidity related data to ensure the safe functioning of the equipment. Without real-time monitoring, companies fall back onto either setting temperatures lower to ensure server reliability, thereby increasing operation costs and power expenditure, or setting it too high to optimize PUE (power usage effectiveness), which can increase the chances of tripping the servers and disrupting business operations. A secondary benefit of real-time monitoring is that one can adjust the amount of cooling based on the workload at different times. For example, for most businesses, the workload will be higher during the day than that at night and will drop significantly on the weekends. Conversely, for a segment such as the gaming industry, night would be the peak period while daytime usage would be very low.

Server room operation requires the consideration of both the initial investment as well as long-term operating costs. For example, annual electricity costs for a 100KW server room may exceed US$150,000, but real-time, visual data management can help enterprises to achieve significant energy and financial savings. For example, after introducing ATEN's PE8324B eco PDU and energy intelligence software, Taiwan's National United University was able to achieve a PUE value of below 1.6. This allowed the school to save nearly $100,000 in electricity costs per year as well as reduce carbon emissions by roughly 1 million kilograms.

With an independent power switch and Proactive Overload Protection(POP), the PDU has also become an analytic tool for enterprises to determine whether power is being overused and to maintain normal server operation. For example, a major Turkish telecommunications company's headquarters had several large-sized datacenters, but because the management staff was not clear on the amount of power being used, they reserved redundant power to maintain the secure operation of IT equipment. This resulted in cabinet power usage clearly set at 7KW, but the actual electricity used was only 3KW.

In order to save energy and manpower, the company introduced ATEN's new generation PE8 series eco PDU and centralized management software. The solution provided real-time environmental monitoring and alerts for IT managers who needed remote control over the power switch. What's more, the power status of each group of outlets could be individually set so that the user could switch each set of devices on or off. And with the intelligent PDU's POP mechanism, the telecom was no longer worried that overloading would cause the entire cabinet to trip, resulting in service interruption. That's because the moment the PDU detects the power levels are close to exceeding the threshold rated current, it will turn off specified servers by priority to make sure the remaining servers are operating securely.

Businesses across the globe are taxed with scaling out their server rooms while remaining both fiscally and environmentally responsible. This forces them to think in terms of the short term and the longer term. By providing real-time data to IT managers, intelligent PDUs such as those offered by ATEN offer a flexible and expandable solution for enterprises to not only cut down on operations costs, but to significantly decrease their carbon footprint.

ATEN ANZ Pty Ltd
www.aten.com.au

biz tech review

GET READY FOR THE **NEW DATA LAWS**

DATA THE SECRET TO **CUSTOMER LOYALTY**

DISRUPTIVE SUCCESS NEEDS PREPARATION

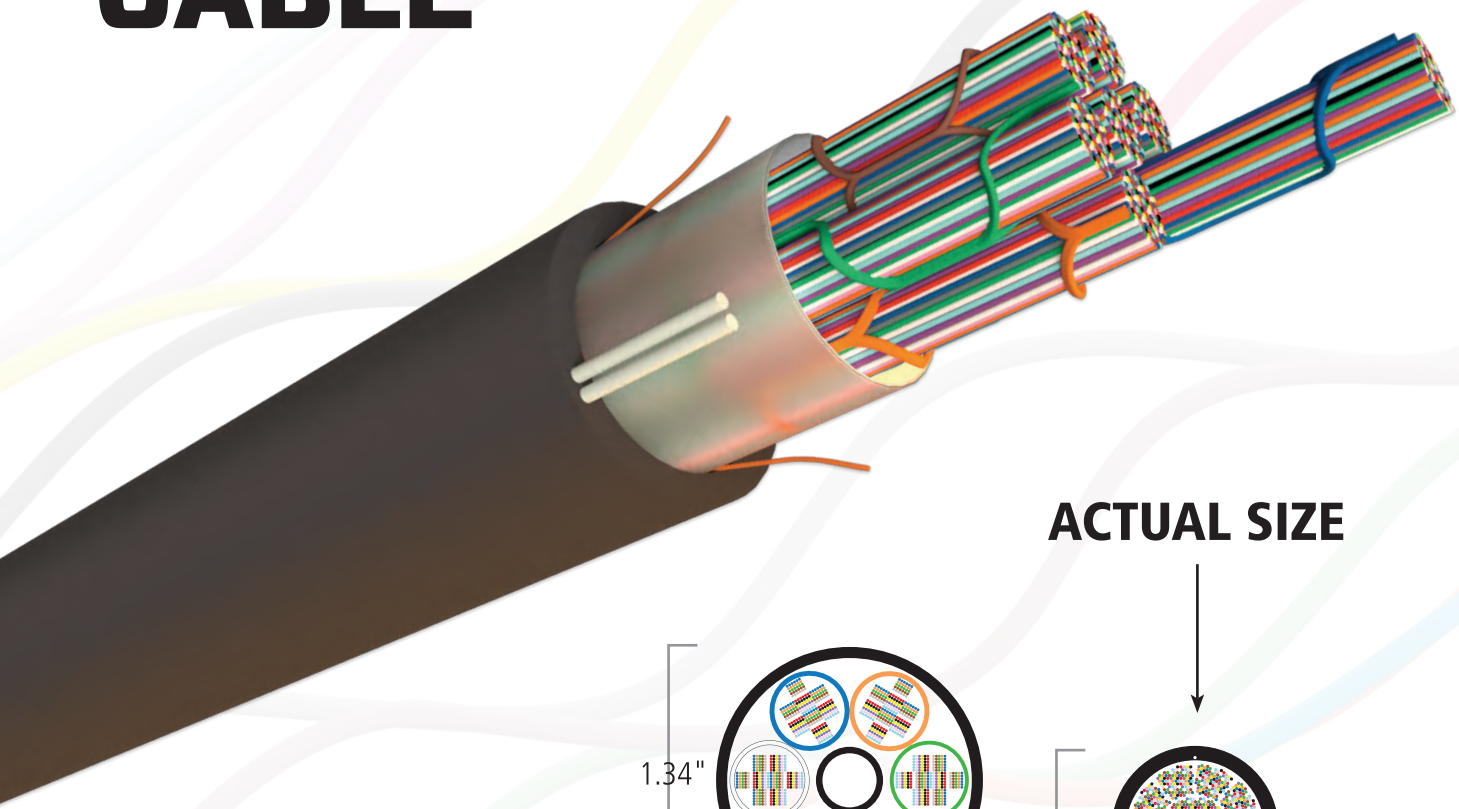
BUDGET BENEFITS
THE PROS AND CONS OF CANBERRA'S TECH PLANS

Q2 2017
PP100009359

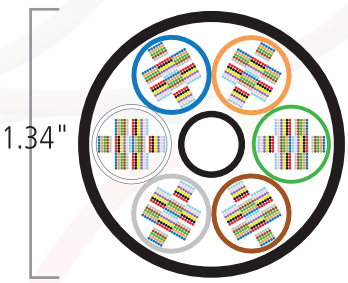
technology Decisions

informing technology decision-makers

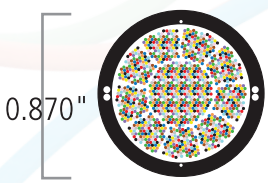
WRAPPING TUBE CABLE



ACTUAL SIZE



Typical 1728 Fibre
RILT Construction



1728 Fibre
Wrapping Tube Cable (WTC) with SWR®

Doing more with less

AFL's Wrapping Tube Cable (WTC) with SpiderWeb® Ribbon (SWR) is a true game changer. The unique construction of the ribbon fibre makes it easier to work with compared to traditional ribbon fibres, saving installation and splicing time. SWR is easily bunched together allowing more fibres to be used in a smaller space. With AFL's WTC, you can now run 1728-ribbon fibre cables in the same duct that would usually hold a traditional 864-ribbon fibre.

These are not exaggerations. Let us show you the difference our new WTC with SWR can make for you.

AFL

www.AFLglobal.com
1300 232 476

As economists are fond of reminding us, the federal government's annual Budget is not the whole economy — it's just one part of it. So while what happens in Canberra obviously affects all of us as individuals and as enterprises, it's how we choose to conduct ourselves and on which endeavours we choose to expend our efforts that really determines our success in business.

Nonetheless, decisions taken in Canberra do have a lot of influence. The federal Budget handed down on 9 May had a bunch of pluses and minuses for the ICT sector. On workforce issues, there's yet again more uncertainty surrounding the vexed issue of skilled worker visas. On the matter of education, the Australian Computer Society has welcomed the government's funding ambitions, yet has called for more emphasis on upgrading ICT skills across the entire workforce.

But there's good news on the start-up front, with Canberra making a series of changes that should make it easier for cutting-edge companies. For instance, GST is being removed from purchases of Bitcoin, and non-listed companies will be able to access crowd-sourced equity funding.

Jonathan Nally, Editor

jonathan@technologydecisions.com.au

Q2 2017

INSIDE

FEATURES

4 | The budget's mixed impact

The 2017 federal government Budget contains pluses and minuses for the ICT sector.

8 | Cool computing brings astronomical results

Keeping the Southern Hemisphere's most powerful computer cool requires innovative technology.

10 | Empowering equal opportunity in IT

Advancing, connecting and empowering women in technology should be a career-spanning effort.

23 | Will Europe's new data laws affect you?

The European Union (EU) is rolling out a reformed legal framework to help protect the rights of EU citizens.

THE BUDGET'S MIXED IMPACT

Dylan Bushell-Embling

THE 2017 FEDERAL GOVERNMENT BUDGET CONTAINS PLUSES AND MINUSES FOR THE ICT SECTOR.

The latest federal Budget allocates funding for a range of initiatives aimed at addressing the ongoing skills shortage and advancing Australia's transition towards a digital economy. But a further squeeze on companies employing skilled foreign workers could place more pressure on the ICT sector in the short term.

DIGITAL TRANSFORMATION

The Budget includes a series of investments in the government's digital transformation agenda. These include $10.7 million towards establishing a Cyber Security Advisory function within the Digital Transformation Agency, tasked with helping federal government agencies build and procure security services.

The Budget also allocates $22.7 million in the coming financial year for the next stage of the development of the GovPass unified authentication tool for online government services, as well as $374.2 million over the next two years to enhance the My Health Record project.

Funding of $350 million over the next three years will be provided for projects to modernise the Australian Public Service, including $130 million towards establishing Data Integration Partnership Australia, which will aim to remove data silos across government and design more effective government services using enhanced data analytics.

Gartner Research Director Dean Lacheca said these initiatives show a commitment to modernising the business of government.

"It's good to see the government continuing to fund its commitment to the innovative use of technology and data to drive digital transformation within the government and the rapid delivery of lower cost, quality government services," he said.

"Specifically, the focus on shared whole-of-government platforms, the attempt to break down some of the data silos that plague governments around the world through the 'Tell Us Once' style of system and federated identity management framework are all good steps towards digital government maturity by the Australian government. The challenge now is to deliver against these commitments."

SKILLING AUSTRALIANS FOR THE FUTURE

In the wake of the recent decision to abolish the 457 temporary skilled work visa and replace it with two new categories with a tighter list of eligible occupations, the new Budget also includes a plan to charge businesses employing foreign workers on skilled visas an annual levy to support a new $1.5 billion National Partnerships Skilling Australians Fund.

Under the scheme, businesses will be required to make an upfront annual payment of $1200 (for companies with an annual turnover of under $10 million) or $1800 (for companies with a turnover above $10 million) per visa per year for each employee on a temporary skill shortage visa.

>>

Businesses will also be required to pay $3000 and $5000 respectively for employees being sponsored for a permanent Employer Nomination Scheme or Regional Sponsored Migration Scheme visa.

The new fund will give priority to apprenticeships and traineeships in occupations in high demand, particularly those currently relying strongly on skilled foreign worker visas. In light of the controversial decision to reduce the HECS repayment threshold, it appears to be an attempt to encourage more young Australians to pursue alternative paths rather than university towards high-skilled jobs.

But Queensland Treasurer Curtis Pitt noted that the Skilling Australians Fund is just a watered-down replacement of the previous National Partnership on Skills Reform.

"The new arrangement will be funded by a levy on businesses employing foreign workers, so actual funding to the states will depend on that revenue and states will also be required to match federal funding," he said.

"Based on the Budget Papers, in 2017–18 we will receive $40 million less than this year when it comes to skills funding."

In a statement, AIIA CEO Rob Fitzpatrick added that the annual foreign worker levy "does raise concerns with respect to additional hiring and human resources costs for companies". He noted, "There is a critical shortage of qualified people in jobs demanding cyber security, cloud and data and analytics skills, and companies that rely heavily on these skills will have a greater financial burden, particularly small and medium-sized enterprises."

While the Skilling Australians Fund is a positive sign that there is a focus on high-demand occupations and industries and sectors of future growth, Fitzpatrick said the key will be how well the scheme is executed.

"Forty-four per cent or 5.1 million current Australian jobs are at high risk of being affected by computerisation and technology over the next 20 years, so this will be critical to ensuring Australia's long-term global competitiveness. Consulting with industry on where the focus needs to be in skills development, however, is imperative," he said.

"It's good to see the government continuing to fund its commitment to the innovative use of technology and data to drive digital transformation within the government and the rapid delivery of lower cost, quality government services." – *Dean Lacheca, Gartner Research Director*

Other initiatives aimed at improving the supply of skilled Australian workers include a $24 million Rural and Regional Enterprise Scholarships program that will prioritise fields including STEM and health.

Australian Computer Society President Anthony Wong broadly praised the education initiatives in the Budget as a step forward for Australia's transition to a digital and knowledge economy.

"The ACS is supportive of the government's introduction of needs-based funding for Australian schools, as outlined in the Quality Schools reforms package, which includes $242.3 billion in recurrent funding to schools over the next decade. We also welcome the new Gonski-led Review to Achieve Educational Excellence in Australian Schools to provide advice on how this funding should be used to improve student achievement and performance," he said.

"However, at a time when the performance of Australian students in science and maths is declining, the ACS supports a stronger focus on building digital skills and digital literacy in Australian classrooms. This must be a critical economic and policy priority," he said, noting that STEM is associated with 75% of the fastest growing occupations, innovations and wage premiums.

"Currently, 2.5 million Australians in non-ICT job roles require ICT skills. As a longstanding advocate in this space, the ACS has actively raised concerns about the critical need to address Australia's ICT skills shortages to meet future skills demand. This is alongside the need to boost ICT enrolments and completions where currently graduates represent only 1% of the ICT workforce."

A BOOST FOR START-UPS AND MANUFACTURERS

The Budget also includes proposed regulatory changes that promise to facilitate the expansion of start-ups and digital businesses.

These include changes to make it easier for start-ups and small businesses to raise capital by removing the requirement for companies to be publicly listed to make use of crowd-sourced equity funding.

From 1 July purchases of digital currency such as Bitcoin will also no

longer be subject to GST. “Removing double taxation on digital currencies will remove an obstacle for the Fintech sector to grow in Australia,” the AIIA said in a statement.

Meanwhile, changes to the current R&D Tax Incentive scheme that had been recommended in the recent Finkel-Ferris-Fraser Review have not yet been introduced.

“While innovation companies will be relieved that the R&D Tax Incentive has not been cut back, there will be an overall feeling of disappointment that no substantial improvements to supporting innovation have been made as well as concerns that a future response to the Finkel-Ferris-Fraser Review may still bring bad news,” RSM Australia Partner for R&D Stephen Carroll commented.

The struggling manufacturing sector will also get a boost with the Budget’s more than $100 million in funding to improve innovation, skills and employment in advanced manufacturing, including a $47.5 million addition to the growth fund aiming to help the manufacturing industry adjust to the wind-down of car manufacturing.

The expanded scheme will provide manufacturers in South Australia and Victoria with matching funds for up to a third of the cost of projects to upgrade their businesses for advanced manufacturing.

In addition, $20 million will be provided under the Cooperative Research Centre Projects initiative for large-scale advanced manufacturing research projects.

“We welcome strong new investment in researching and developing new advanced manufacturing technology, including a $20 million injection into the important Cooperative Research Centres program,” Science and Technology Australia CEO Kylie Walker said.

“But it’s disappointing that after recent cuts and a two-year salary freeze, our biggest national research agency, CSIRO, will suffer a decrease over four years of $13.6 million. Though small, this represents a continued erosion of their budget in real terms. We’re also disappointed that the Australian Research Council (ARC) funding won’t keep pace with inflation, meaning grant allocations will fall in real terms.”

Walker also expressed disappointment that the Budget included no allocations for capital expenditure on major national research infrastructure. “We hope the National Research Infrastructure Roadmap will be released soon, along with plans to achieve its recommendations,” she said.

The Budget also includes a $7 million increase for the Business Research and Innovation Initiative and $26.1 million for astronomy research and innovation via a strategic partnership with the European Southern Observatory.

COOL COMPUTING BRINGS ASTRONOMICAL RESULTS

The Pawsey Supercomputing Centre in Perth was established primarily for the purposes of analysing the flood of data coming from a new generation of current and future radio telescopes located in the remote Western Australia desert. Equipped with two supercomputers — called Magnus and Galaxy — the centre deals with an almost unbelievable torrent of data. Magnus is currently the most powerful supercomputer in the Southern Hemisphere, performing at one petaflop, which is a thousand trillion floating-point operations per second. If every one of the 7.5 billion people on the planet were given a standard calculator, it would take them more than 10 years to process the amount of data that Magnus processes in one second.

"Magnus has the power of approximately 40,000 laptops running at the same time," said Dr Neil Stringfellow, the executive director of the centre. "This enables researchers to process data and approach real scientific problems, achieving what we never thought possible."

All of that computing power has to be kept at precisely the right temperature for optimum performance. Cooling requirements are becoming more stringent as the computing power of servers is increasing on the same footprint, leading to increased power consumption and heat. This drives the packing density per rack and requires new ways of cooling the equipment — for no matter how high the air volume, a fan can never cool lower than the surrounding ambient temperature, which is why a more active cooling regime is needed... particularly for critical, high-performance applications.

In an overall sense, the centre is cooled via an innovative system that draws water from underground aquifers. This groundwater system saves approximately 14 million litres of water every year when compared to standard cooling towers. As for the equipment, part of the centre's computing infrastructure is kept at the right temperature thanks to Varistar LHX+ Rack Integrated Coolers supplied by Pentair. The main benefit these units provide compared with previous systems is that the cooling is close to the equipment, so sensors can immediately detect changes in compute utilisation and thus the changing heat load. Active fans mean there is no undercooling of the equipment and there are no problems with air pressure drop.

The LHX+ comes into its own when the heat load exceeds 6–10 kW and, by baying several cabinets together, small-room independent cubes can be set up. They also support applications where EMC shielding or reduced noise is required.

Fifty Varistar LHX+ units were supplied to the Pawsey Supercomputing Centre, with the solution provided as a complete system including cabinets, cooling and remote management.

Image courtesy Pawsey Supercomputing Centre/Woodhead.

Pentair Schroff
www.pentairprotect.com

Your high-speed migration, made simpler by CommScope

Under siege from increasing numbers of users, greater demand for bandwidth and lower-latency applications, data centres need the speed, performance and latency improvements that come with high-speed migration. It's a daunting prospect, but one that becomes simpler when you work with the right partner—CommScope.

Our modular platform is built on our complete portfolio of SYSTIMAX® high-density fibre solutions that includes:

- Ultra-low-loss multimode fibre supports low-cost VCSEL optics, including wideband OM5
- High- and ultra-density fibre panels for today's mesh networks
- AIM-based intelligence automatically monitors and documents the physical layer in real time

CommScope is a global solution partner with the manufacturing footprint to deliver and the innovation to outperform. We'll help you take your infrastructure to 100G, 400G and beyond—because you know there's going to be a beyond, and it's likely be here before you know it.

Learn how CommScope can help you get the most from your high-speed migration at http://www.commscope.com/hsm.

commscope.com

COMMSCOPE®

EMPOWERING EQUAL OPPORTUNITY IN I.T.

ADVANCING, CONNECTING AND EMPOWERING WOMEN IN TECHNOLOGY SHOULD BE A CAREER-SPANNING EFFORT.

Kristy Simpkin, Co-President, Women in Technology

www.wit.org.au

We aspire for a day when we won't need a Women in Technology (WiT) association — when women are equally represented, have the same opportunities and take home the same pay. But the research tells us we are far from parity. We are under-represented in technology, opportunities are often elusive and salaries can be meagre when compared with our male counterparts.

According to the latest statistics from the Workplace Gender Equality Agency (WGEA), "women make up half of the nation's workforce but earn only 77 per cent of men's average full-time income". This equates to the average full-time female employee taking home $26,853 less than the average male employee in 2015–16, according to the WGEA.

Earlier this year we surveyed our WiT members and asked them: "in your position, what inhibits you from achieving your goals?" One-third (32.48%) of respondents said that a lack of opportunities were holding them back. Some attributed it to old boys' networks, attitudes towards part-time workers or significant challenges in balancing work/home life.

Fortunately, as a woman working in technology, I am one of the lucky ones. I work for a progressive and forward-thinking organisation that embraces diversity with a mandate of 'all roles flex'. And it's not just lip service. I have been promoted, respected, rewarded and given complex and meaningful projects despite transitioning through maternity leave and part-time status. I have the option to work from home. My gender does not dictate my success in the organisation. My family commitments are not viewed as inconvenient. My workplace is also fully supportive of my role as co-president of WiT. They get it. So why are so many other organisations missing the point?

And is it just the organisations behind the under-representation and poor pay? Are we failing to sell technology to the younger female generation? Are women opting out of the industry because of challenges with childcare? Missing out on opportunities due to a lack of confidence in their abilities? Or stifled by fear from negative workplace experiences of the past? Is the technology boys' club real or imagined?

WiT tackles each of these issues. WiT is the peak industry body for women in technology and life sciences within Queensland. Our vision is to advance, connect and empower women in technology and life sciences. Founded 20 years ago with the support of just 10 women, WiT is now a strong network of more than 5019 subscribers, members and affiliates.

We've recognised that women need support at different stages throughout their careers — stepping up, starting up, stepping back in or stepping out. They might need a 'step up' to get to their next role, or maybe they are returning to work after extended leave and need to reignite their career path. No matter which stage of their career they find themselves in, WiT offers programs to empower women — from board readiness through to one-on-one mentoring.

NEVER PAY

up for your data.

Ask us how to
recover
from **seconds**
before an
attack.

Zerto

www.zerto.com

BATTLING BIG DATA: A FORGOTTEN INTEGRATION ISSUE

IT PAYS TO BE READY AS THE LIKES OF IoT AND AI EXPAND THEIR RELEVANCE

As 'big data' burst onto the scene some seven years ago, it promised vastly improved means of capturing and analysing endless arrays of rapidly growing information to provide targeted intelligence for organisations. This would result in improved business decisions, operational efficiencies and personalised systems of engagement — a CIO's dream in its own right.

Fast forward to 2017 and it turns out the now-buzzword is indeed demonstrating this promised value. Subsequently, the big data market is expanding as an increasing number of enterprises are beginning to realise returns on investment. And with some analysts expecting data volumes to double every three years, big data's place in the market is certainly solidified.

Despite the positive outlook, however, many organisations are yet to fully capitalise on the value of data. According to a recent McKinsey Global Institute study, "In industries where integrating more and better data can dramatically improve performance — such as banking, insurance, retail, the public sector, and beyond — the organisations that master this capability can realise major advantages."

Unfortunately, having crunched the numbers, the institute found "most companies are capturing only a fraction of the potential value from data and analytics". By industry, healthcare and public sector organisations are only collecting between 10 and 20% of value from data and analytics, while manufacturing fares at 20–40%, with retail leading the pack at 40%.

David Irecki, Manager – Solution Consulting APJ, Dell Boomi

These figures show there's a long way to go to thrive in today's global economy, and the opportunity starts with an integrated approach to leveraging big data. Integration allows CIOs to break through traditional silos, giving organisations a holistic view of their big data in order to explore new insights and business models. And just as important as integration is the master data management (MDM) that comes with it. MDM provides the visibility to create meaningful insights into the information collected across all parts of an organisation, allowing companies to develop better customer, employee and partner experiences.

Naturally, there are organisations that are better at harnessing the power of integration, and are therefore able to monetise big data. The digital natives that are built for cloud, analytics, social and mobile keep widening the gap between them and the more traditional players that have to first navigate a minefield of legacy systems by adapting to the data-driven era before addressing data-informed decision-making.

As it stands, this gap between leaders and laggards stands to widen further as new data sources — and their related insights — emerge. Artificial intelligence (AI), for example — a market which is expected to be valued US$47 billion globally in 2020, according to IDC — is creating new possibilities; organisations that are already using big data to drive their businesses are prepared to take on these new challenges and opportunities.

While integrating big data remains an obstacle for businesses of all sizes, there are instances aplenty of companies needing strategies to make the most of 'little data' as well. Little (or small) data refers to that which can be processed and managed by people without relying on technology and/or automation. This includes information from customer relationship management (CRM), enterprise resource planning (ERP), marketing, human resources and other core business applications.

This need to better integrate little data has grown amid rapid adoption of cloud applications and the use of public cloud platforms. In a hybrid IT environment, integration is essential to streamlining processes and building the foundation for effective analytics.

Managing big and little data is an ongoing process, and it pays to be ready as the likes of IoT and AI expand their relevance to business. This is why organisations need to combine a flexible and high-performing integration infrastructure with MDM to tackle immediate needs and also scale out as the business builds its big data capabilities.

Boomi
www.boomi.com

DATA IS THE SECRET TO **CUSTOMER LOYALTY**

BOOST CUSTOMER LOYALTY BY REMOVING DATA SILOS TO CREATE A TRULY MULTI-CHANNEL EXPERIENCE.

Nigel Lester is Managing Director (ANZ) for Pitney Bowes, where he is responsible for the delivery of software and services across the company's customer data, insight, communications, location intelligence and analytics offerings.

Personalisation and customisation are becoming the key to winning loyalty as customers navigate quickly between digital and physical channels. To remain efficient in this increasingly competitive marketplace, Australian businesses need to acquire a clear, holistic, 'single view' of each customer, regardless of how or where they interact with them.

Many organisations are currently facing the challenge of managing customer databases that lack flexibility and agility, resulting in a fragmented, often inaccurate customer profile. A recent study revealed that only 18% of organisations surveyed had eliminated operational silos and had begun to deliver omnichannel experiences for their customers.

Businesses today are collecting greater quantities of customer data that are more diverse and complex than ever. As a first step to transforming customer relationship management, organisations must aggregate that data to understand customers as individuals and engage with them personally. For companies that have already begun, the transition has been shown to be mutually beneficial for both the customer and organisation. A McKinsey report revealed organisations that improve the customer journey see revenues increase by as much as 10–15% while lowering the cost to serve by 15–20%.

The solution lies in a revolutionary data model known as 'graph databases', which works with current systems and has the speed and flexibility required to respond to customers in more meaningful ways. As customers evolve and organisations acquire a larger customer database, this flexible paradigm allows for new schemes and data to be easily implemented.

Many internet platforms such as Google and Facebook use the graph database approach to deliver fast results and an in-depth, multidimensional view of the customer, providing data that has real business value.

For example, one of Australia's largest metropolitan councils, Victoria's Brimbank City Council, had multiple siloed systems that provided disparate customer data, giving a surface-level understanding of the community. By adapting a new model which broke down the siloed approach and gave a complete picture, the council was able to enhance services, giving customers a round-the-clock payment gateway and access to various community-first initiatives. With the right data quality and engagement solutions that offer a multidimensional view of the customer, the council website was able to deliver an optimised user experience and improve customer engagement — and experienced an immediate rise in customer satisfaction.

Managing a cohesive data system may appear challenging for businesses. However, unlike existing relational databases, which traditionally require all information to be known upfront, graph databases have been developed to build structurally over time, evolving based on new inputs and connections as they appear. Business changes can be made incrementally, allowing organisations to see the positive business return without a complete disruption to current processes.

In creating personalised, meaningful interaction with customers, organisations can offer a competitive edge and a higher level of service as they deliver a more proactive, satisfying experience and provide actionable insights in real time.

INTERCONNECTION: WHY IT'S CRITICAL TO THE FUTURE OF YOUR BUSINESS

Jeremy Deutsch, Managing Director, Equinix Australia

CENTRALISED I.T. MODELS ARE HEADED TOWARD OBSOLESCENCE, SO BUSINESSES NEED TO AGGRESSIVELY PURSUE I.T. TRANSFORMATION.

While the world progresses rapidly through new phases of technology, connectivity continues to be the constant catalyst for growth and opportunity. In fact, in today's digital economy, success is inextricably tied to it.

As businesses seek to engage with their customers and partners in new ways and via new platforms, and as their boundaries become more fluid, the need for seamless, fast information transfer is more paramount than ever.

For the average IT manager, this means that their role and their priorities have changed significantly. They're now responsible for futureproofing networks for tomorrow's challenges, without knowing exactly what they might be.

Compounding this uncertainty is the fact that existing systems were not set up with an eye to this future.

For decades, the heart of a business's IT was the owned data centre, with technology platforms, software and development architecture built around it. Even immediately following the development of the cloud, the on-premise data centre was still the foundation on which to extend new infrastructure.

But today, as business activity becomes increasingly global and interdependent, and as data and devices proliferate, the limitations of existing systems are clear.

Centralised architectures simply

can't scale quickly enough to meet the demands of increasingly mobile and data-heavy users — meaning businesses can't compete.

This new era, where cloud dominates and where companies forge advantage by collaborating with each other, has compounded the need for enhanced levels of connectivity. We call this the era of interconnection.

Forward-thinking companies are responding by moving beyond the highly centralised IT models of the past towards distributed, interconnection-orientated infrastructure. They're looking outside the boundaries of the data centre and instead at how to build for the cloud.

We know that businesses thrive when they have the opportunity to partner and grow, but those connections also need to be in a place where they can bring maximum value. A place where security and speed are priority, and where businesses have greater choice in the clouds and networks they want to plug into.

Many are looking to colocation facilities to meet these new demands and, in the process, are benefiting from improved flexibility and performance, as well the cost and risk reductions associated with positioning their infrastructure inside the most advanced, dense data centre ecosystems.

IT managers can now breathe easy knowing their systems are futureproof.

The needs of IT systems have evolved wildly in just a few years; knowing what will be required in the future is an even greater challenge. But we believe systems should be built like a Swiss Army knife, with different tools under its belt which can plug into tomorrow's needs.

This is increasingly important with the likes of the Internet of Things (IoT) and the other sweeping technology changes sitting on our doorstep. If companies are to have the front foot in this evolution, they'll need to be able to adapt their infrastructure to take advantage of it.

Centralised IT models are quickly headed toward obsolescence and Australian businesses need to aggressively pursue an IT transformation. Interconnection is the key to freeing business to achieve the ambitions of today — and bring people, locations, clouds and data together tomorrow.
www.equinix.com.au

Series 2005 is the leading brand of 19" rack mount enclosure for data and communications installations, with a huge range of sizes. MFB have the right cabinet for your needs.

MFB®

DESIGNERS & MANUFACTURERS
OF 19" RACK SYSTEMS

When you choose Australian made, you're choosing more than quality and reliability, you're choosing peace of mind.

MFB's range of innovative racking solutions is proudly made onshore, to ensure quality and consistency above all others. Backed by constant development, unsurpassed customer support and expedited delivery. MFB proves a solid project partner whatever your requirements. Australian made, makes Australia. With a solid history of over 45 years of supplying innovative, off-the-shelf and custom built racking systems, you can rely on MFB to ensure when you buy Australian, you're investing and supporting Australian industry.

AUSTRALIAN MADE
MAKES AUSTRALIA

bsi. ISO 9001 Quality Management

AUSTRALIAN INDUSTRY & DEFENCE NETWORK AIDN

19" Rack Cabinets
Licence No. 84394

www.mfb.com.au

VIC - **P** (03) 9801 1044 **F** (03) 9801 1176 **E** sales@mfb.com.au
NSW - **P** (02) 9749 1922 **F** (02) 9749 1987 **E** sydney@mfb.com.au

Find us on

Infinite possibilities in AV & KVM systems management

Over the past several decades, KVM technology helped us move servers—along with their noise, heat, and space consumption—out of the control room. KVM technology also allowed for many users to access multiple physical servers, sharing resources in a "virtual access" manner.

THE EVOLUTION

The power Boxilla unleashes in InvisaPC is only the tip of the iceberg. Because it's a software-based solution, it's also a future-proof solution. Future upgrades to Boxilla will enable support for other Black Box product families, including other KVM categories such as KVM Matrix Switches, Desktop KVM Switches, Control Systems and even Collaboration Systems. This will expand the power of system management even further, not only for control rooms, but for other AV and IT network environments as well.

MOVING TO THE CLOUD WITH INVISAPC

The next advancement in control room technology has taken the form of access to cloud-based virtual servers. The InvisaPC™ solution bridges the gap between IP-based KVM extension/switching and access to virtual servers. InvisaPC offers plug-and-play connectivity with a receiver installed at each user's workstation to support access to physical and/or virtual servers.

The ability to leverage the cloud as a content storage and distribution system for control rooms and other environments is significant, because it brings flexibility and scalability to your operation, and reduces capital expenditures.

But in an enterprise environment, you need something more—something that frees you from limitations, ensures high performance, and eliminates the pain of managing thousands of devices in a large-scale system.

THE SKY'S THE LIMIT

Boxilla, the premier AV/IT system management platform, scales the InvisaPC matrix to an unlimited number of devices. Even more important, Boxilla provides a

centralized, easy-to-use command center that gives you full monitoring and control of not just devices, but your entire system, all across the enterprise. Send commands to network switches. Control user access. Monitor device status. Proactively diagnose and address network problems before they occur. Upgrade thousands of remote devices with one click, without ever leaving your seat, let alone the building.

Boxilla sets your mind at ease, though, ensuring security with authentication and access control. Boxilla reports back to you on its security interface dashboard, and provides you with real-time alerts and alarms if someone is trying to circumvent security profiles.

BOXILLA & INVISAPC OFFER ENTERPRISE-LEVEL CONTROL ROOM SOLUTIONS FOR

- BROADCAST
- PUBLIC SAFETY
- DEFENSE
- TRANSPORTATION
- ENERGY
- MANUFACTURING

ADVANTAGES FOR YOUR NETWORK

- Easy-to-use centralized admin and control with simple configuration for large-scale deployments
- Enterprise management with enhanced authentication, access control and accounting for secure communications
- Support for virtual desktops and physical PC/servers, plus integration with virtualization management tools
- Advanced mode controls, including private, shared, pre-emption and auto log-in

EXPLORE NEW HEIGHTS IN SOLVING—AND AVOIDING—NETWORK PERFORMANCE PROBLEMS

With Boxilla, your command center dashboard gives you an instant snapshot of your network, including what users and devices are active and how much bandwidth different devices are using, so you can see how your system is performing right now at any given moment. Drill-down menus let you dig deeper for more in-depth analysis.

Using Boxilla is stunningly simple. It automatically discovers all devices on your network and builds a database, allowing you to configure them as you like—with user names, passwords and access rights. You can also set bandwidth usage limitations and have Boxilla alert you when bandwidth use exceeds your set thresholds.

MAXIMIZING THE POWER OF INVISAPC WITH BOXILLA

By itself, InvisaPC is an IP-based LAN/WAN solution that enables point-to-point KVM extension and transition to small, unmanaged, cloud-based KVM matrix switching configurations. Consisting of transmitters and receivers, it offers plug-and-play connectivity right out of the box.

A big advantage of the InvisaPC zero-client solution is its support for both physical and virtual servers, providing an easy migration path for organizations to move toward virtualization. On its own, InvisaPC is ideal for small, unmanaged deployments with connections to up to 32 physical and/or virtual servers.

Combine Boxilla with InvisaPC for a power boost that launches you into an enterprise-class system that's easy to use, simplifies management of large-scale installations, enhances system security and offers you high-performance system management.

The initial release of Boxilla is designed to work with InvisaPC. You'll be able to upgrade Boxilla as future releases add compatibility with other Black Box products that support control room, conference room and other AV/IT applications.

WHY BLACK BOX?

FINANCIAL STRENGTH

Over $1 billion annual revenue; publicly traded (BBOX).

EXPERIENCE

Providing leading technology solutions since 1976, Black Box helps more than 175,000 customers in 150 countries build, manage, optimize and secure IT infrastructures.

WARRANTIES

Multi-year warranties with multi-year extensions and replacement are available.

EXPERTISE

Black Box project engineers provide assistance with system assessment, design, deployment and training.

BREADTH

Black Box offers the most comprehensive suite of engineered KVM solutions in the industry.

SUPPORT

Reflecting our commitment to complete satisfaction, our dedicated team of highly-trained support technicians are available free of charge, 24-hours a day, every day of the year.

Black Box Network Services Australia
www.blackbox.com/en-au

WHY HYBRID CLOUD IS BETTER

Andrew Martin, Vice President, Zerto APJ

A SUCCESSFUL HYBRID CLOUD ENVIRONMENT REQUIRES CAREFUL PLANNING AND TESTING

The IDC CloudView 2016 study reported that 67% of all Australian organisations are using cloud-based infrastructure in some way. The survey reported no bias towards either public or private cloud, indicating a move in the direction of a hybrid cloud future. Hybrid is the best option for most enterprises, offering benefits from both the public and the private cloud, which include greater agility and significant cost savings.

A hybrid approach allows an organisation to choose the right platforms for the right workload, for the right price. This agility speeds up 'time to market' for many clients and improves their abilities to service their employees and customers.

While this shift is a no-brainer, it's not without challenges and risks. It's difficult for organisations used to 'on premise' single-vendor or single-platform architectures to build, manage and protect hybrid cloud environments. While introducing multiple platforms drives efficiency and choice, it also drives complexity and risk for organisations ill-prepared to address this shift in strategy correctly.

The changes required to enable a hybrid cloud can be risky and time-consuming and may need a different group of tools to protect the environments that are created. To address and avoid risk, protection and immediate recovery is key. Traditional replication, migration and recovery tools are, by design, incapable of protecting applications and environments

Andrew Martin

that may span multiple on-premise and cloud platforms. Therefore, creating a successful hybrid cloud environment encompasses three steps:

Planning. Planning is significantly easier if your environment has a protection, mobility and testing suite or platform that is agnostic to the infrastructure you're running your IT on. By design, you can make changes to which platforms you use with no protection dependencies tied to that individual on-premise or cloud platform. Furthermore, an agnostic platform allows you to avoid introducing organisational risk when making changes while providing the agility desired when deciding to move to a hybrid cloud IT environment in the first place.

Testing. Any changes to your environment, whether internal on-premise changes or more complex shifts to cloud-based resources, will carry organisational risk. Testing whether changes will be executed smoothly and successfully is the bedrock of any serious hybrid cloud strategy. Downtime, data loss and the costs associated with infrastructure changes can be significant risks for an organisation moving to hybrid cloud. A successful hybrid cloud environment can be enabled by, and will continue to allow for, testing capabilities that can assess whether the applications absorbing infrastructure or platform change will remain available throughout and after those changes occur.

Futureproofing. So when introducing new platforms into your IT environment, futureproofing your decisions is critical. Some questions to consider include: How fast and easy will it be for us to make future changes? Are we free to move our applications between on-premise or private clouds, third-party managed service providers or public clouds?

Will those changes be disruptive and/or risky? How will we protect our applications before, during and after? Can we automate changes now or in the future? Can we test that changes we plan to make will go smoothly and not cause business disruption? What restrictions do our current IT infrastructure prevent us from making?

There are numerous advantages to having a hybrid cloud. If you do your due diligence and take the right steps to get there, you'll find the rewards can be significant from both a cost as well as efficiency standpoint.

Zerto
www.zerto.com

BRIDGING TODAY'S **DATA SOLUTIONS** WITH TOMORROW'S

A FAMOUS COMPANY ONCE COINED THE PHRASE: "THE WHOLE WORLD IS... DATA!"

Indeed, everything ties back to data, whether we're talking about YouTube, Facebook, Uber, Deliveroo, SAP, high-performance computing (HPC) or databases. Today's data has grown exponentially due to the rise of Internet of Things, social media and big data.

To truly benefit from the new knowledge economy, organisations need to know how to manage data effectively and to analyse and extract meaningful intelligence out of it. The possibilities are endless. For instance, LinkedIn uses user-generated Twitter feeds to forecast market demand and trends, providing inspiration for companies to innovate and develop new products; and Toyota is leveraging virtual reality to let its customers test-drive new vehicles without having to manufacture costly prototypes.

In general, data that is frequently accessed is termed 'hot data'. Examples include databases, enterprise resource planning systems and web pages. With flash drives being priced more competitively nowadays, the adoption of all-flash arrays for these applications has become a reality.

The real growth of flash adoption, however, came with hybrid arrays, which deployed tiering between flash and traditional disk drives. With the arrival of storage virtualisation, enterprises can achieve this completely via software.

Data that is infrequently accessed is called 'cold data'. It can exist either in structured form — such as backup and archival data, which most enterprises are using — or unstructured form, for items like large videos, pictures and blogs. Such data can range from small file sizes of a few kilobytes to large terabyte file sizes, or from a few hundred files upwards to billions or trillions of files.

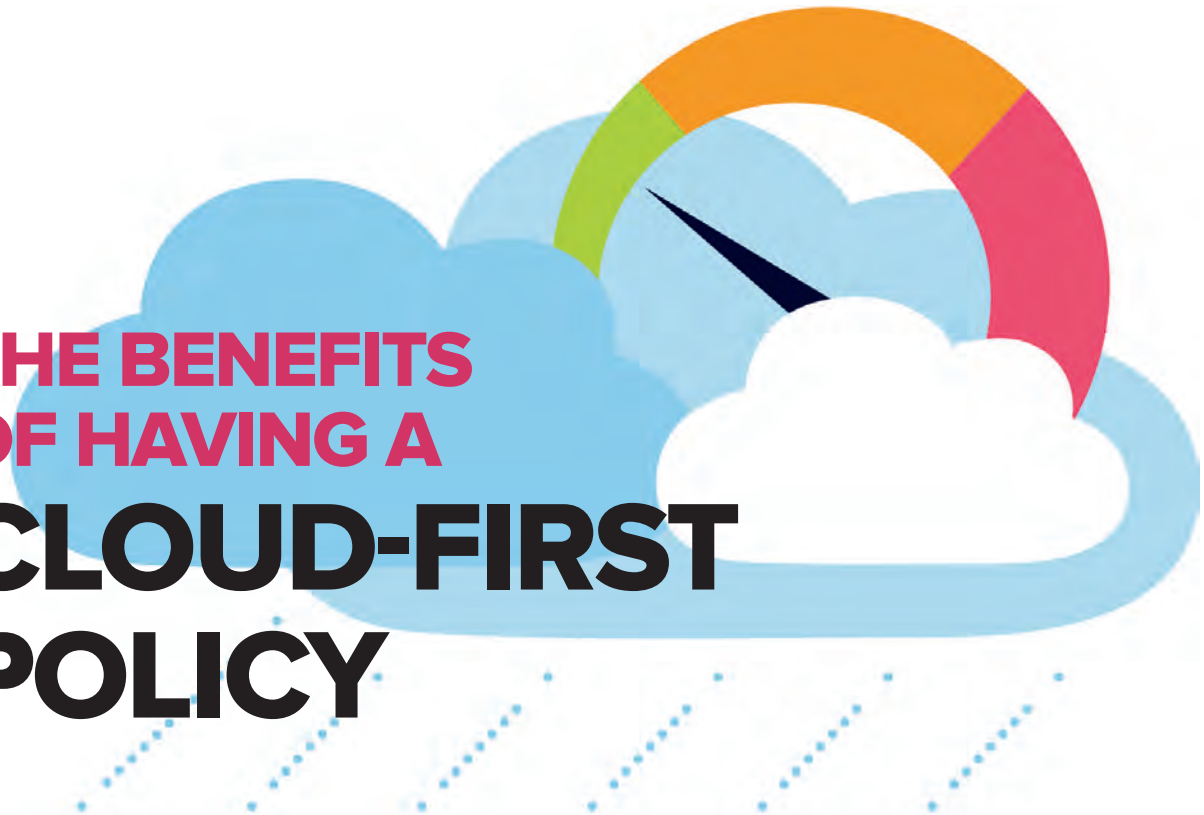
Managing millions of small files is altogether a different matter from managing a smaller number of ultralarge ones. While both cases can take up the same storage capacity, older architectures are unable to support the high level of granularity involved from a data management standpoint. Therefore, software-defined storage (SDS) and object storage are introduced to address this trend.

Unlike object storage, it is equally challenging to manage traditional file and block storage, especially in large capacities, due to the escalating costs of storage area networks. SDS, with its scale-out architectures, can help to reduce the costs of storage significantly.

For homogenous workloads where performance, capacity and scale are needed, we're seeing specific HPC workloads like machine learning systems that require not just petaflops of performance, but also petabytes of data.

To cope with the different types of storage data, the industry has to embrace a more granular approach on how it addresses different workloads. Even as new software-defined technologies are being rapidly developed, enterprises will still need to bridge the traditional with the software-defined solutions of tomorrow.

Rob Makin is Director, Data Centre Group, Lenovo Australia and New Zealand, responsible for business growth and the education of the market regarding the company's enterprise offering.



THE BENEFITS OF HAVING A CLOUD-FIRST POLICY

APPLYING A 'CLOUD FIRST' POLICY CAN BENEFIT A WIDE RANGE OF BUSINESSES.

The uptake of the cloud is happening at a significant pace, completely changing the way we do business. It seems logical that a 'cloud first' policy will become the norm. This means that whenever companies deploy new services, or update existing services, they will almost always consider moving them to the cloud for the betterment of the IT environment.

What cloud first doesn't mean is that network monitoring becomes redundant. IT admins still need to know if all their cloud services are running — even if they are not responsible for outages, they should still know about them.

There are five key reasons for applying a cloud-first policy, all of which could benefit a wide range of businesses.

1. IT'S A CHANCE TO RETHINK THE IT STRATEGY

- Are we using our legacy systems in the way that we should?
- Can we simplify the system?
- Is it at the core of our business or can we move to a standardised system?

2. WE CAN DO THINGS THAT WERE IMPOSSIBLE BEFORE THE CLOUD

The possibilities are endless, but one of them might be: delivering websites and downloads globally and at high speed using CDNs, while simultaneously geo-blocking downloads in those countries that have export embargoes.

3. IT SAVES TIME AND MONEY

Email is a perfect real-world example of this. Migrating an on-premise Microsoft Exchange server cluster to Office 365/ Exchange Online can result in the removal of excess hardware, less hassle when it comes to ongoing maintenance and ultimately increased performance.

4. IT'S SCALABLE

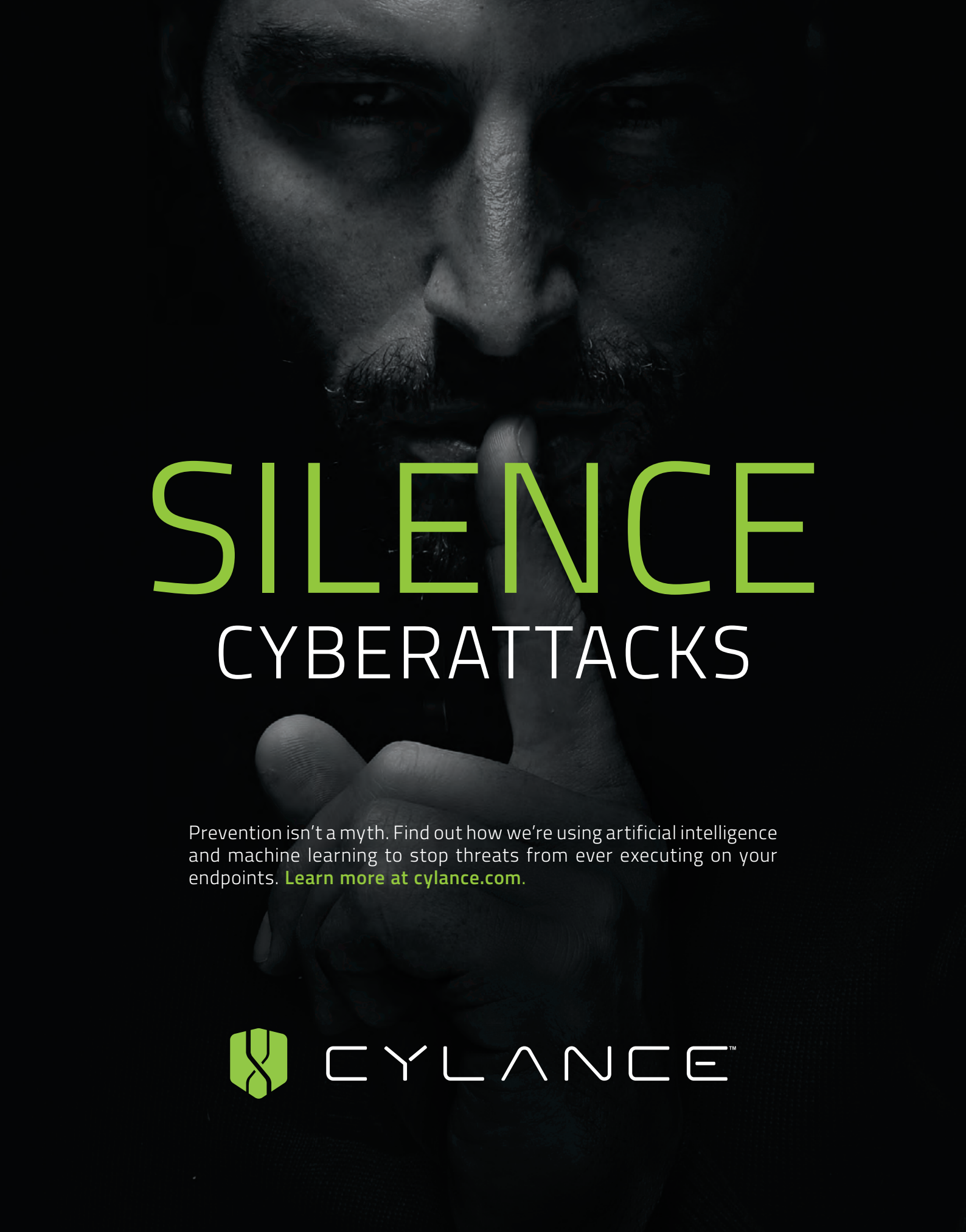
It is suitable for businesses that are growing so quickly they are moving offices every 4–5 years. Moving IT services to the cloud can take the pressure off IT.

5: IT OFFERS GREATER SECURITY AND STABILITY

Most companies rely on just a small IT team working an 8-hour day to ensure adequate cybersecurity is in place. Cloud providers, such as Amazon and Microsoft, have round-the-clock teams devoted to this kind of activity.

Cloud first contributes to time and cost savings and supports security and scalability, but this is only true if you have a reliable monitoring service as the foundation. Paessler's PRTG Network Monitor supports your cloud-first strategy by giving you the means to monitor both on-premise and cloud services from a single dashboard.

Paessler AG
www.paessler.com/cloudfirst


SILENCE
CYBERATTACKS
Prevention isn't a myth. Find out how we're using artificial intelligence and machine learning to stop threats from ever executing on your endpoints. Learn more at cylance.com.
CYLANCE™

Nutanix

named a leader again

in Gartner's Magic Quadrant for Integrated Systems

nutanix.com/gartner2016

NUTANIX™

Your Enterprise Cloud Platform

WILL **EUROPE'S NEW DATA LAWS** AFFECT YOU?

Peter Hall, Advisor, Enterprise Infrastructure and Management, IBRS

The European Union (EU) is rolling out a reformed legal framework to help protect the rights of EU citizens to a private life. The reforms comprise two instruments which will become effective from May 2018:

- The General Data Protection Regulation (GDPR), which is designed to enable individuals to better take control of their personal data;
- The Data Protection Directive, under which the police and criminal justice sectors will ensure that the data of victims, witnesses, and suspects of crimes, are duly protected in the context of a criminal investigation or a law enforcement action.

Although the reforms are taking place in Europe, organisations that deal with any personal details of a EU citizen will need to comply with the regulations or be subject to fines — which can be as high as the greater of 4% of the entity's global gross revenue or 20 million euros. Additionally, the GDPR will also give data subjects (ie. impacted individuals) a private right of action in EU courts, under which they can claim monetary damages for harm caused by the processing of their personal data.

Any Australian entities that have establishments in the EU, or offer goods and services in the EU, or monitor the behaviour or information of individuals in the EU, need to comply. The individuals' data may be of a customer, an employee, a contractor, a student, a supplier — basically any individual who is an EU citizen, no matter where they reside.

Even a small organisation with only a web-based presence would need to comply if an EU citizen can access their site and provide their personal information.

Specifically, Australian businesses that may have to comply include:

- Those with an office in the EU;
- Those whose website enables EU customers to order goods or services in a European language (other than English) or enables payment in euros;
- Those whose website mentions customers or users in the EU; and
- Those that track individuals in the EU on the internet and uses data processing techniques to profile individuals to analyse and predict personal preferences, behaviours and attitudes.

Australian businesses that have EU citizens as employees will also need to comply. Organisations should also

Analyse this

Whilst consumers in Australia are unlikely to know anything about the EU GDPR, they are likely to value organisations that comply with it.

consider that whilst they may not process any EU citizens' data today, this can always change in the future, and may be unexpected or unplanned.

Many Australian organisations will already have governance processes in place to comply with the Australian Privacy Act 1988, which does share some common requirements with the forthcoming GDPR requirements. However, there are also some differences, especially in terms of certain rights of individuals, which are not covered in the Australian Privacy Act 1988.

One of the rights of an individual within the GDPR is the 'right to be forgotten'. This right to erasure gives individuals a right to require data controllers to delete their data in certain circumstances, including:

- Where the information is no longer necessary for the purpose for which it was collected;
- Where the individual withdraws their consent and there is no legal ground for processing their data.

Another right individuals will have is for 'portability' of their data, which involves being able to request that their information should be provided in a format to allow it to be 'ported' to another organisation.

GDPR covers all data — structured and semi-structured — as well as all of the unstructured data that an organisation may have collected, which can include emails, photos, recordings and so on.

All legacy data that an organisation has, is included, in addition to new data captured after the introduction of GDPR. So while organisations may be putting new governance processes and rules in place to apply as data is collected real time, they will also need to deal with all the data that already exists. Volumes of data that have been captured as 'big data' initiatives in the hope of discovering trends or patterns will also need to comply.

Organisations should consider the relevance and need for all this legacy or 'big data' history and whether it needs to be kept at all — deletion may be a better option, saving storage space, and avoiding costs in ensuring the data can comply with GDPR.

Many organisations will already have data privacy rules and procedures in place, however it will be prudent for them to review the requirements of GDPR and take any necessary steps to improve or update their privacy rules and procedures to ensure they do completely comply with GDPR.

Unfortunately data breaches are reported on a frequent basis. According to the Breach Level Index, at least 5,911,431,891 data records have been lost or stolen since 2013. Of this, only 4% were 'Secure Breaches' where encryption was used and the stolen data was rendered useless.

The Breach Level Index indicates that in the first half of 2016, there were 76 incidents reported in the Asia-Pacific, which was 8% of the worldwide total of 772. Notably, within the Asia-Pacific, Australia reported 22 incidents, which was the highest number in the region. India was the second highest with 13 incidents.

Whilst consumers in Australia are unlikely to know anything about the EU GDPR, they are likely to value organisations that comply with it and offer individuals the same rights offered to EU citizens, such as the right to be forgotten.

Organisations should invest to embrace the GDPR standards and ensure they comply, as there is an upside in being able to better protect data records, potentially avoiding expensive or embarrassing data breaches. There is also the important removal of the risk of receiving hefty fines for not complying with the GDPR. Organisations should consider complying with the GDPR to be a mandatory responsibility.

Organisations should also assess exactly how the GDPR is likely to impact the organisation — especially in terms of processing data relating to EU citizens, both now and in the future — and determine what technical and organisational changes are needed to be able to comply with the GDPR.

They should also deploy technical solutions that are likely to be needed, to help ensure all forms of data retained or processed by the organisation will comply with the GDPR requirements. To this end, unless already in place, 'data protection officers' should be appointed as required.

Peter Hall is an IBRS advisor who covers Enterprise Infrastructure and Management, with more than 34 years of executive experience in companies such as Hewlett-Packard, Blade Network Technologies, IBM and Lenovo.

THERE IS A DIFFERENCE

SUB-METERING FOR DATA CENTRES

- ACCREDITED
- PROVIDING UP TO 90% SPACE SAVING
- INNOVATIVE DESIGN
- COST EFFECTIVE INSTALLATION
- ONE DEVICE, UP TO 36 CIRCUITS
- FREE LICENCE PAS SOFTWARE
- EXPORT TO MS EXCEL OR ACCESS DATABASE

Smart Metering

- NMI/Pattern Approved
- Electricity Billing
- Interval Data
- Demand Load Control
- Time Of Use (TOU)
- Real Time Clock
- Ethernet Communications (TCP/IP)
- Accuracy Class 0.5S

Energy Efficiency

- NABERS
- Green Star
- BCA J8
- BEEC

T +61 2 4774 2959
sales@satec-global.com.au
www.satec-global.com.au

SATEC
Powerful Solutions