Reimagination 2017

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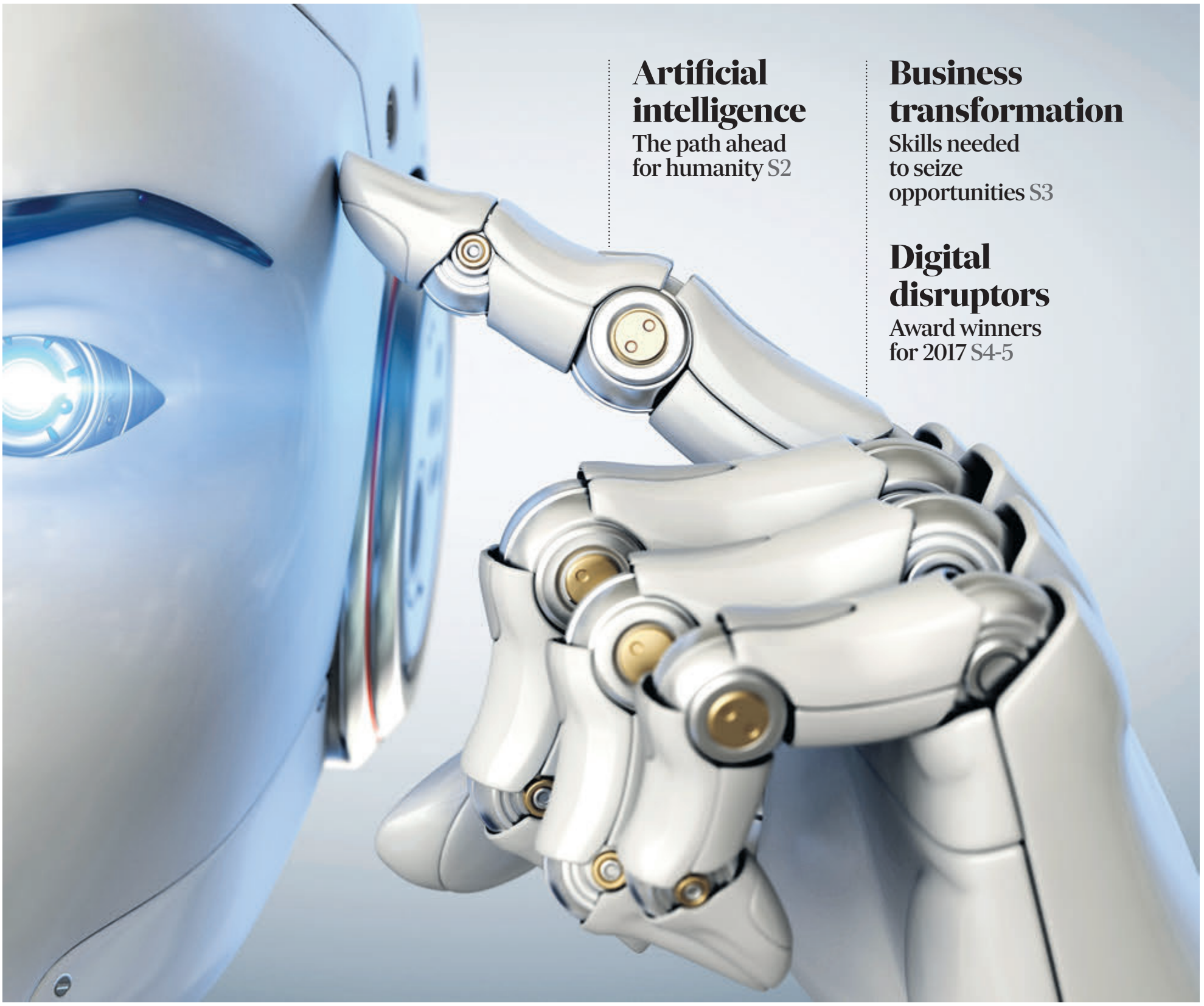


Artificial intelligence
The path ahead for humanity S2

Business transformation
Skills needed to seize opportunities S3

Digital disruptors
Award winners for 2017 S4-5

Grenier tells of passion and the dawn of AI

Innovation Doing social good is a priority for actor and producer.

Mark Eggleton

For American actor and producer turned social entrepreneur Adrian Grenier, the time of singularity most often espoused by writer and futurist Ray Kurzweil cannot come soon enough.

The international keynote speaker at the recent Reimagination 2017 conference, Grenier said he "can't wait for singularity", which Kurzweil suggests will see artificial intelligence overtake human intelligence and profoundly disrupt human capability by 2045.

For Grenier, it will be a time when "humans as we know them are maybe less important".

"Everyone will have tech embedded in their bodies and be connected to the cloud – it's a different ideal," he told the conference.

An outspoken advocate for numerous environmental causes, Grenier spoke of his passion for doing social good and the importance of social entrepreneurship with 2016 Australian Computer Society female young professional of the year, Cynthia Lee.

In a wide-ranging discussion, he spoke about co-founding the Lonely Whale Foundation, an incubator for great market-based ideas that can help improve our oceans.

The foundation started the Strawless Ocean initiative – a campaign now involving over 50 leading ocean health NGOs and creative media partners designed to raise awareness of the environmental issues associated with single-use plastics. At present the world discards over 50 million plastic straws a day.

Grenier says there is a long way to go with the initiative as there is with most of his social entrepreneurship work, but he suggests it is the way of the future for society and business.

He believes technology is primarily about improving the lives of human beings, the key is to "look at every project and ask, is it creating value for people and how does it improve society and communities?"

"You have to be able to measure the good," he says.

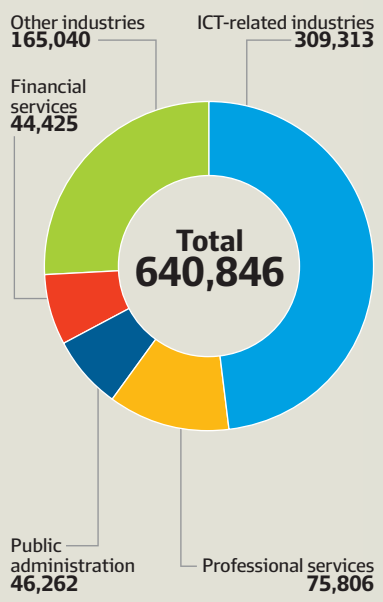
His comments reflect much of the current thinking around how business can best engage Millennials, as outlined in numerous studies including Deloitte's Millennial Survey 2017, which involved over 8000 young people in 30 countries.

The survey found Millennials believe the workplace is where they are most able to make an impact.

"Opportunities to be involved with 'good causes' at the local level, many of which are enabled by employers, provide Millennials with a greater feeling of influence," the survey found.

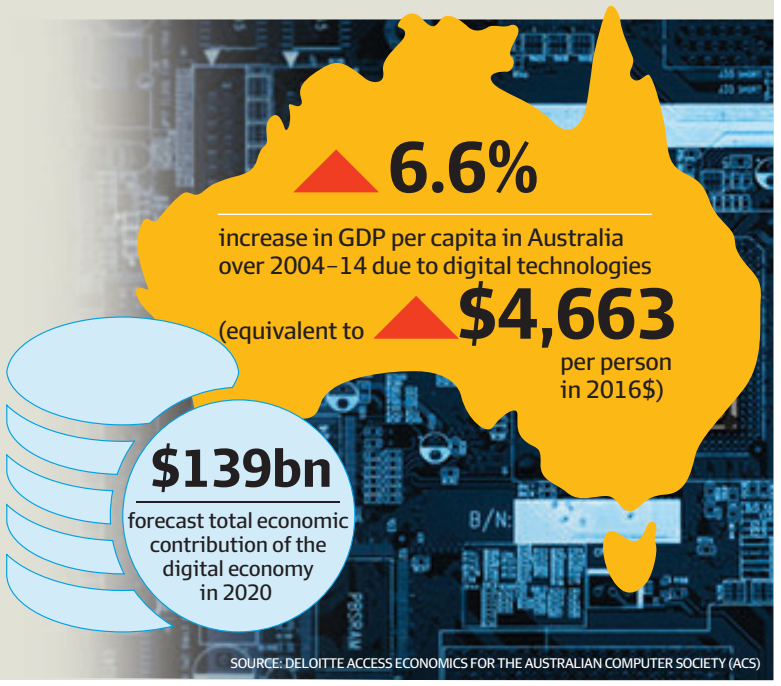
A growing sector

Number of ICT* workers by selected industry, 2016



*Information and communication technology

Digital technologies provide a significant economic dividend



SOURCE: DELOITTE ACCESS ECONOMICS FOR THE AUSTRALIAN COMPUTER SOCIETY (ACS)

Grenier is also working with Dell as a social advocate and together they launched a global pilot program this year to "turn the tide on ocean pollution", as reported by CNBC.

He says Dell also have programs to retrieve obsolete technology with the aim of "upcycling and reusing it".

Grenier believes technology is about improving people's lives.

As for young Australians looking to head down the path of social entrepreneurship, Grenier suggests collaboration is the key.

"I really do believe that anybody who does something in a vacuum, in isolation, will ultimately fail. You need other ideas. We need to work well with people, and that's the reason why we want to create these technologies in the first place, to improve the lives of human beings.

"Ideas come when people step outside their silos – when they break things [down].

"Eventually society will correct itself and ultimately reject your technology if you haven't taken into consideration their ultimate needs," he says.

Of his own work in social advocacy as well as his creative career, Grenier says he's "lucky enough to be in an industry where there's a lot of people with a lot of money".

He says Silicon Valley has become interested in financing his work, including his creative projects.

He admits his starring role in the HBO series *Entourage* has helped raise the profile of his causes and contributes to his social media following of over 1.3 million across Facebook, Twitter and Instagram.

But his focus is not on building his social media profile. "It's more about doing good work and creating value for an audience." Interestingly, for a celebrity who is incessantly snapped by paparazzi, he does not seem overly perturbed about privacy issues in the age of big data.

He asked whether anyone really cares about privacy any more.

"I don't know where this idea of privacy as being this coveted ideal came from or why that is but, I believe with perfect information, we can all have the data and we can make better choices.

"It's when people start lying and being cagey and not sharing, then you get imperfect information."

Yet while he is an advocate of big data and looks forward to the age of singularity, Grenier believes business should be focused on the human element behind all the technology.

"What people are craving at present are tangible real-world experiences. There's real value in rubbing elbows with other humans, which you can't get online."

Innovation means some failures along the way

Strategy A change in mindset could result in so much more.

Ian Grayson

Australian companies must nurture a culture of constant innovation but also realise experiencing failure along the way is perfectly acceptable.

Panel participants at the recent ACS Reimagination 2017 summit agreed that, while the nation has chalked up some impressive wins when it comes to establishing and growing businesses, a change in mindset could result in so much more.

"For a company to truly succeed, it's culture has to be 100 per cent about innovation," says Liesl Yearsley, chief executive officer of artificial intelligence company Akin. "You have to be comfortable with failure and, when it happens, embrace it and move on to the next thing."

Yearsley's sentiments were echoed by other panelists who pointed to the environment that exists within technology hotbeds such as California's Silicon Valley. There, business failure is something that is actively celebrated as it is deemed to be evidence a firm is striving to push boundaries in search of growth.

Robert Hillard, managing partner, consulting at Deloitte Australia, says often, if a new project does not succeed, people move the goalposts to redefine success because failure is not acceptable. This way of operating needs to change.

"At Deloitte, 30 per cent of what we do must not have existed in the market two years ago," he says. "The other rule we use is that 30 per cent of growth must happen inorganically, with the remaining 70 per cent organic growth. If it differs from that ratio, it means a company is not bringing in enough new ideas and perspectives."

Hillard says companies need to have an expectation of certain rates of failure when undertaking new initiatives, often of around 20 per cent. Parts of the business that do not experience that rate should be penalised, as it shows they are being too conservative.

Panel members said some of the most significant commercial successes can come from so-called "moonshot" companies that have particularly high rates of failure. These companies are built around an ambitious, groundbreaking idea and are not focused on generating short-term profitability.

The federal shadow minister for the digital economy, Ed Husic, told delegates a lot of people talk about the concept in Australia but "the biggest moonshot would actually be to have moonshots".

"We often hold ourselves back and wait for someone else to do it," he says. "The number of times I hear someone say we should look at this country or that country and what they are doing – I wonder whether (those countries) looked at us? Actually, they just went ahead and did it and we should do the same thing, we should be prouder."

Liesl Yearsley, of Akin, says a company has to be comfortable with failure.

Husic says shifting the national mindset in this way will go beyond simply generating dollars through business and also help to make communities stronger and to solve social challenges. "We can breathe life into the promise of technology by reducing the distances between people and ensuring things are done better and more efficiently.

"What I am worried about, however, is the level of digital engagement across business, both large and small," he says. "When you look at (how Australian companies) are paying attention to technology and investing in technology to improve operations, we are way behind some of the leaders."

Summit participants also discussed how Australia's education sector will need to evolve to support entrepreneurs and technologists of the future.

Shadow minister of universities and deputy chair of the Standing Committee on Employment, Education and Training, Terri Butler, says it is clear skills needed for future jobs are very different from those needed for jobs today. The challenge is made more acute because, with technology changing so rapidly, it can be difficult to predict exactly what skills will be required and what should be taught to students today. "This is why you are seeing discussion around so-called 21st century skills such as resilience, adaptability and being able to continue to learn, and embedding these in the curriculum no matter what you are studying.

"Australia's advantage is that we have quality education and a highly regulated education system that supports quality (and) we need to make sure this is maintained. Education is the best force that we have to improve our nation's productivity."

Summit participants also heard about the benefits of computer gaming and how it can potentially be used to improve productivity and employee engagement.

In a keynote address, US-based game designer Jane McGonigal shared her research into how playing computer games can improve a person's mindset and ward off feelings of defeat and depression. Pokemon Go, which became the most downloaded app in mid-2016, has had a significant and positive impact on many players, who reported it helping with depression and feelings of isolation.

Commenting on his own highlights from Reimagination 2017, ACS chief executive officer Andrew Johnson said the panel on expediting Australia's digital transformation and involving federal parliamentarians Senator Bridget McKenzie, Ed Husic, Terri Butler and Trent Zimmermann "was certainly lively".

Boards falling behind on digital disruption

Directors Technical skills are essential in this day and age.

Mark Eggleton

Many of the nation's larger companies are struggling to make a proper assessment of their digital needs because they do not have the necessary skills diversity on their boards, says Avanade Australia's managing director Sarah Adam-Gedge.

Adam-Gedge was speaking at the recent Reimagination 2017 conference in Sydney and said Australian companies needed to ensure they had more tech-savvy people on their boards or risk falling even further behind in their digital disruption journey.

According to Adam-Gedge, part of the problem is some Australian businesses have been guilty of only utilising "disruptive technology when they're being disrupted" and often this is too late.

Fortunately, there is some good news as it would seem boards are waking up and according to the Australian Institute of Company Directors' (AICD) latest Director Sentiment Index released this month, more than three-quarters of Australian company directors are increasingly looking to improve diversity on their board through the representation of more diverse skills.

This comes on the back of AICD combining with Data61 this year to launch an education program designed to lift the digital and cyber literacy of directors and boards across Australia.

For Adam-Gedge, boards must also ensure digital-savvy cascades through their whole organisation and be aware big business-changing decisions are no longer about putting in place two or three-year transformation programs but revolve around "shorter, sharper plans".

Speaking as part of an Emerging Tech and Transforming Your Business Model panel at Reimagination 2017, she emphasised the importance of leadership in the transformation process and how leaders need to unlearn and relearn their current behaviours.

She says leaders have to solve problems with the right people in their organisations and that means being skilful in identifying and understanding "the unicorns we want to flourish in our companies".

Fellow panellist Elisabeth Brinton says digital transformation is always a hard slog for companies. "It's a cultural transformation."

Brinton, the executive general manager of AGL's New Energy business, also believes people have to be willing to unlearn.

"The challenge for business leaders is stepping back as a human being and asking what can I unlearn that will help me be receptive and open to how I view the world. How can I help my company make the moon shot?" she asks.

Sarah Adam-Gedge says some Australian businesses leave it too late by only utilising "disruptive technology when they're being disrupted".

"Companies have to be brave and realise innovation only happens when it's accepted as part of the DNA of an organisation."

She warns against innovation for its own sake, "it needs to be practical", and it has to show a path forward. The key to ensuring you're on the right path is data, and Brinton says data drives insights and "should point you in the right direction for the good of your customers and shareholders".

NSW chief data scientist Ian Oppermann says the key for organisations is to "be bold and experiment in a disciplined way".

He says it is vital to use data and put the customer at the heart of everything and ensure decisions are a marriage between data and science. "Data is a way of seeing the world and science is a way of understanding the world and if we bring those two together we have a pretty good set of tools to do some powerful things," Oppermann says. "It allows you to see across boundaries and reimagine how you do things in a new way."

Panellist Andrew Flick of Micro Focus agreed data allows business to set up strategic frameworks for change.

Flick is Micro Focus' senior global director of product management, portfolio and lifecycle management.

The enterprise software giant recently merged with Hewlett Packard Enterprise to become one of the largest software providers in the world.

"Business needs to understand data science can disrupt everything. It can drive efficiency and in terms of the overarching business case, data allows you to do things incrementally. It's not about trying to find the one world-changing idea – it allows you to iterate slowly."

"The key is to be laser-focused on the customer," he says.

AGL's Brinton says we need real intelligence.

"As we get all these amazing new platforms we have to embrace our own intelligence and unlearn what we need to discard and think forward," says Brinton.

"It will transform our lives, companies and our world."

REIMAGINATION'17
THOUGHT LEADERS' SUMMIT
CX, Emerging Tech and New Business Models

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Jane McGonigal
World-renowned game designer
Inventor of SuperBetter

Panel: Expediting Australia's Digital Transformation

Adrian Grenier
Tech Investor & Founder of SHFT.com
Actor, Filmmaker, Advocate

Senator Bridget McKenzie
Chair of the Foreign Affairs, Defence and Trade Legislation Committee
Senator for Victoria, The Nationals

The Hon Ed Husic MP
Shadow Minister for Employment Services, Workforce Participation and Future of Work, Shadow Minister for the Digital Economy
Member for Chifley, Australian Labor Party

Ms Terri Butler MP
Shadow Assistant Minister for Preventing Family Violence, Universities and Equality
Member for Griffith, Australian Labor Party

Mr Trent Zimmerman MP
Chair Health, Aged Care and Sport Committee
Member for North Sydney,
Liberal Party of Australia

Panel: Identifying the Moon Shots: A Company Board's Perspective

Panel: Data as the New Growth Engine

Panel: Emerging Tech and Transforming your Business Model

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Helping to combat the hackers

SMEs

Joshua Gliddon

Technology security is hard for small and medium-sized business. Unlike large organisations, they generally do not have, and cannot afford, dedicated IT and security teams.

David Rudduck, founder and managing director of Gold Coast-based Insane Technologies, has targeted this niche with his business, which has been operating for the past 18 years.

According to Rudduck, SMEs are not immune from hacking and data breaches, which is all the more important with the incoming Notifiable Data Breaches, which comes into play on February 22 next year.

"Many small and medium businesses assume that the NDB scheme doesn't apply to them because their revenue is under the $3 million threshold," he says. "But if they are dealing with financial information, patient information or information relating to children, they are subject to the scheme."

Rudduck was the recent winner of the Australian Computer Society's Skills Transformation Award (small business) at its recent Digital Disruptor Awards. This followed a significant realignment of the six-strong team, moving the focus away from managed services towards SME security.

"Security is often an afterthought for SMEs," he says. "We wanted it to be part of every decision. A lot of businesses think they won't be hacked and won't be liable, but they will be."

As a result, he remapped the training his staff received and re-evaluated his recruitment process. In his staff training, he moved from typical IT support skills towards learning about information security, about privacy laws, and the impact a data breach could have on a business and its clients.

"When I do cyber security awareness training with our clients, I tell them the story of how when I was in school, I was the one doing the hacking of the school computers. In our business, we are not hackers, but it's the hacking mentality that we are looking for in our staff."

Recruiting for cyber security skills is a difficult task. Many companies look to offshoring, or the recently restricted 457 visa, but Rudduck says he does not recruit for skills but for aptitude and the ability to learn. "Often people with the right skills don't have the right personality to fit in our business," he says. "We are looking for the right people."

Collaboration the key to success for award winners

Technology The ability to build passionate teams is recognised.

Mark Eggleton and Joshua Gliddon

Collaboration is the key to thriving in the digital economy and it is a message reinforced by many of the winners of the recent Australian Computer Society (ACS) Digital Disruptors Awards held in Sydney.

It was reiterated by the winner of the 2017 ICT Professional of the Year, Dr Jordan Nguyen, who credited much of his ground-breaking work to the ability to build passionate teams and to collaborate with many.

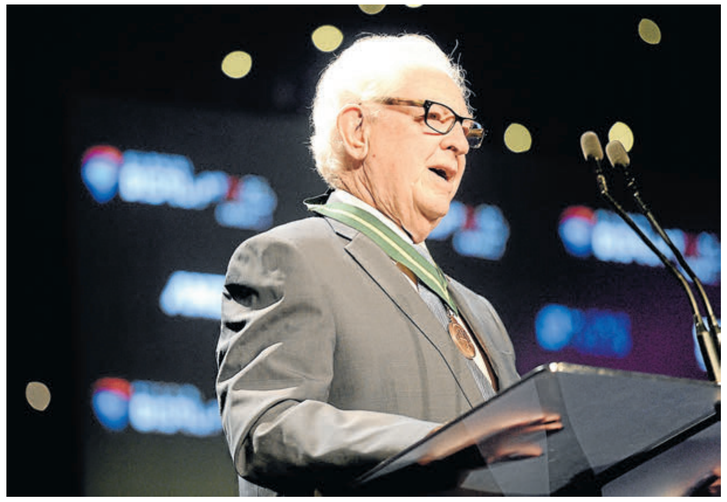
Dr Nguyen, who is a biomedical engineer, says the reason his career has been so rewarding is he has always taken inspiration from great people and visionaries. Moreover, he is driven by his passion to help others through technology.

Chief executive officer of the ACS, Andrew Johnson, says Dr Nguyen, whose work has focused on inclusive technology that transforms the lives of people with disabilities, epitomises the inspiring nature of many of the award winners.

Mr Johnson said the Digital Disruptors were incredibly inspiring.

"To see so much talent pushing the envelope and introducing game-changing ideas will undoubtedly have encouraged our attendees to do the same," he said.

Other big winners on the night include the Australian Taxation Office, which picked up the gong for a large employer that has transformed the workplace and upskilled its workforce "to use new ICT solutions to improve performance, culture, competencies and productivity."



Emeritus Professor Mike Miller has strong opinions on what Australia needs to do to maintain its edge in innovation and IT.

Winners for transforming their digital service offering to customers included South Australia's Statewide Super and the University of Queensland.

Also presented on the night were the Pearcey Foundation Awards and telecommunications leader, and emeritus professor Mike Miller was the recipient of the annual Pearcey Medal.

Professor Miller has strong opinions on what Australia needs to do to maintain its edge in innovation and IT in the coming years. He believes the nation must strengthen the links between the research happening in academia and the real-world outcomes needed by Australian industry.

"We've got great research teams in Australia, with lots of bright people," he said."I have counted 17 teams working in the area of artificial intelligence, but the problem is that there's a lack of knowledge in government and industry about where these teams are and how to use them."

He said the country needed a facility where industry is better informed about where these research groups exist, and what they are working on.

"Universities are well-disposed to working with industry, but they are not well informed about what industry is doing in terms of ICT," he noted.

Professor Miller's long history with IT and telecoms won him the Pearcey Medal, the highest honour in Australia for work in technology. It is a recognition of a long career, but also one that has inspired hundreds of students, many of whom have gone on to make their mark locally and globally.

"I think the thing I look back on most fondly is working with all those young, bright minds," he said. "People between 20 and 30 are at their most fertile when it comes to ideas, and I think that I have done my bit in helping them shine."

Commenting after the awards, Mr Johnson said the Reimagination Conference right through to the Digital Disruptor Award winners promoted the idea that "culture is the discriminating ingredient for business – it can be elusive and hard to define but some of the key insights, including the proposition of creating an environment that doesn't penalise failure, rather sees it as a necessary learning for future success."

Customer experience was "critical" as was finding and retaining good people to help transform business. He suggests they are two of the key ingredients found in all of the winners – a laser-like focus on customer service provided by empowered and knowledgeable teams.

Digital Disruptors Awards

Individual Awards

ICT Professional of the Year: Jordan Nguyen
Young ICT Professional of the Year (male): Phillip Matheson
Young ICT Professional of the Year (female): Margaret Zou
ICT Student of the Year: Samaneh Movassaghi
ICT Educator of the Year: Shanton Chang
ICT Researcher of the Year: Manoranjan Paul

Team/Project Awards

Service Transformation for the Digital Consumer (Corporate): Statewide Super
Government: University of Queensland
Not for Profit: Humanoid Robot Project Team
Skills Transformation of Work Teams – Small (less than 20 employees): Insane Technologies
Medium (21-200 employees): GS1 Australia
Large (200+): Australian Tax Office

Pearcey Foundation Awards

Pearcey Medallist: Emeritus Professor Mike Miller
Pearcey Hall of Fame: Kate Lundy, Helen Meredith
National Entrepreneur Award: Collis and Cyan Ta'eed, co-founders of Envato

Groundbreaking inventions and a persistence to improve the lot of many

Inventions

Persephone Nicholas

For Dr Jordan Nguyen, the biomedical engineer awarded ICT Professional of the Year at the 2017 ACS Digital Disruptor Awards, his success story started at home.

"My mum's an artist, she's very social and compassionate. I learned a lot about the importance of human connection from her. My father is a UTS professor who invented things his whole life.

"I got to see his inventions in artificial intelligence, robotics and biological technology. I found it fascinating."

Fast forward a decade or two, and Nguyen is creating groundbreaking inventions of his own. He became aware of the challenges faced by people with a disability after an accident during the third year of his engineering degree at UTS. He dived into a pool and hit his head on the bottom. Damage to his neck rendered him temporarily immobile and he imagined what it would be like to live that way permanently. It was a pivotal moment – Nguyen knew he would use his talents to help others.

Years later, he still lives by a few words he has engraved on his iPod: "One life. Persist to improve many".

"It's a mantra that underpins all the decisions I make and what I do. It reminds me I only have one life and that a single life has the potential to improve many," he says.

Nguyen's commitment to helping many is clear, as is his passion for his work. In 2012, he completed his PhD on a thought-controlled smart wheelchair, which was acknowledged in the UTS Chancellor's List of top theses.

In 2014, he became friends with Riley Saban, a teenager with cerebral palsy. Motivated by Riley's interest in technology and determination to become more independent, Nguyen designed technology that gave Riley more control over his environment, allowing him to turn on electrical appliances with his eyes. It was a huge project for Nguyen, his team, Riley and his family – and was featured in the ABC documentary *Becoming Superhuman*. His next project, also covered in the doco, was even more ambitious – creating technology that would allow Riley to fulfil his dream of driving a car.

Nguyen says having a purpose and vision for the project was vital. "The family said it didn't matter if it didn't work, but we were pretty set on something happening. No feat of human endeavour ever goes smoothly; it's always a rollercoaster. Pushing limits takes persistence, courage and a great vision to work towards."

He says the project is proof of the value of collaboration and communication.

"I design and create entire systems, but over time I've realised it's much better to build passionate teams and work together and collaborate with many people. You can't just create lots of devices and put them out there. The flow-on effect is important. We empower people through technology and understanding and knowledge. That's why I create and communicate."

Nguyen has huge ideas. He has more media projects in the pipeline. His social business Psykinetic launches its assistive computer software early next year.

It's exciting, but Nguyen puts humanity first. "Technology is a tool. It augments us. It doesn't replace human connection – it's something we can harness, but it's not a standalone thing. Its purpose is to help and empower the human condition and ideally work towards a better future."

Fireflies, age and the internet of things

Networks

Jonathan Porter

What do fireflies, our ageing population and the internet of things have in common?

More than you might imagine, it turns out.

Samaneh Movassaghi , the Australian Computer Society's 2017 ICT Student of the Year, got to thinking about fireflies when pondering how large groups of humans, all with life-saving gadgets implanted, might gather together in large groups.

"My research has found that a key factor in facilitating affordable and timely healthcare is a network of sensors that can be worn on the body, inserted subcutaneously or introduced into the bloodstream, to monitor individuals for vital health signs like heart rate, blood pressure, temperature and potential health issues, and notify hospitals and doctors in real time," says Movassaghi.

These networks of sensors are called wireless body area networks (WBANs). There are already 11 million such devices implanted in humans today and that number is expected to rise to around half a billion in the next few years as we run into the perfect storm of more old people, and scarcer resources for their care.

"WBANs are expected to cause a dramatic shift in how people manage and think about their health, similar to the way the internet has changed the way people look for information and communicate with one another."

Samaneh Movassaghi sees herself leading a team of passionate researchers.

In addition to saving lives, the widespread use of WBANs will reduce healthcare costs by removing the need for costly in-hospital monitoring of patients.

One major challenge with WBANs is that there is no single entity or node that controls all these WBANs, which means that these individual WBANs have to talk to each other and self-organise.

"For example, if you have 10 people wearing WBANs in a meeting room, this can lead to disruption of communicated data, as well as interference and degraded performance.

"To help solve this, I have been inspired by the synchronisation of fireflies in nature.

"Fireflies exhibit spontaneous synchronisation over a large area and without directive forces. I looked at the mathematical model based on fireflies proposed at MIT back in the 1980s."

She says she was honoured to receive the award for her work. "The ICT field is a rapidly changing sector since we have moved into a digital era which means technology will be increasing the speed and breadth of knowledge turnover within the society and economy."

Movassaghi loves working in the ICT field because she says it gives her a tangible means of making a difference, "even if it is in small in scope and scale".

And what does the future hold?

"During my PhD research I have solved problems that bridge academic interest with real-world applications. In the future, I see myself continuing this real-world focused research and on a scale that makes a larger and more universal impact.

"Specifically, in five years, I see myself leading a team of dedicated and passionate researchers, thinkers and engineers who are at the forefront of change and are solving problems that are crucial to continued evolvement and well-being of humankind."

Bringing humans into the video loop

Video

Jonathan Porter

The Australian Computer Society's ICT Researcher of the Year for 2017, Manoranjan Paul, is tackling a problem few of us will be aware of, but which is vitally important to our daily lives as we surf the internet and immerse ourselves more in the world of virtual and augmented reality.

The problem can be summed up. Within the next two years, video is expected to make up 80 per cent of all internet traffic. How can we compress all that data and save bandwidth?

"People engage more when they watch videos," says the father of three, who did his undergrad work at the Bangladesh University of Engineering and Technology and has 16 years of research in video and image coding under his belt.

"Even today with current transmission systems you cannot use raw video. You have to compress it – often by 1000 times. My research is in when you bring the human into the loop. If you understand how people perceive something, then you can use that information to do processing and compression, then you have the upper hand – you have the tools to do it more efficiently."

Paul analyses brain processing, eye movement and cognition, then uses the data from that research to figure out how to produce higher quality on the areas of the screen the viewer is actually looking at, saving processing bandwidth by concentrating less on areas the viewer's eyes are ignoring. The problem is further complicated by the fact that men and women concentrate on different things.

Another area of Paul's research is video summarisation. Let's say you have a security video camera pointed at the outside of your house while you are away for 10 days. "We use eye tracking data to find what humans regard as important events in that video and provide a five-minute video based on important events."

For example, the mail being delivered at 3pm or a burglar paying a visit at 3am.

"That gives you an overview you can see within a very short time."

Paul says he finds his work incredibly rewarding. "If you are looking at the video-on-demand industry, if you know that you can customise the video quality so that a person can see better quality but you use the same bandwidth and internet traffic, that gives the industry very good video on demand – they see good quality based on their perceptions."

He says the award and the recognition that goes with it are vitally important.

"The ACS is the top body in Australia in this field. I consider it to be the top award in my discipline and I am very proud to get it."

In the future, Paul sees himself heading a research team "with a good relationship with industry to contribute to the wellbeing of the Australian people".

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ACS DIGITAL DISRUPTORS AWARDS

ACS congratulates the 2017 winners

Dr Jordan Nguyen
ICT Professional of the Year

Individual Awards

ICT Professional of the Year
Dr Jordan Nguyen

Young ICT Professional of the Year - Male
Phillip Matheson
DXC Technologies

ICT Educator of the Year
Shanton Chang
University of Melbourne

ICT Student of the Year
Samaneh Movassaghi
Australian National University

Young ICT Professional of the Year - Female
Margaret Zou
Avanade

ICT Researcher of the Year
Manoranjan Paul
Charles Sturt University

Team/Project Awards

Service Transformation for the Digital Consumer

Corporate
Statewide Super

Government
MeDiCi & University of Queensland

Not for Profit
Humanoid Robot Project Team

Skills Transformation of Work Teams

Small (under 20)
Insane Technologies

Medium (21 - 200)
GS1 Australia

Large (200+)
Australian Taxation Office

View the full list of finalists at

disruptors.acs.org.au

Identifying the opportunities in data deluge

Data The gathering and analysing of data is paramount to business.

Ian Grayson

The data deluge sweeping the business world is offering exciting opportunities but also causing rising challenges for many organisations. Those most successful at turning that data into action will be best placed to succeed in coming years.

Delegates at the recent ACS Reimagination 2017 summit heard how companies are taking vast data reserves and, through sophisticated analytics, gaining from a range of insights that previously would not have been possible.

"We should really be thinking about this as the fourth industrial revolution," UTS Business School dean Roy Green told the summit. "The first involved the move into towns and factories, the second involved electricity, the third was the internet, and now we have data.

"Data doubles every three years and 90 per cent of it is unstructured data, so there are technological challenges. It's going to require facilities with machine learning and analytics at one level but also it's important to realise that it is interdisciplinary."

Green says it is also a non-technological phenomenon in the sense that it requires design thinking and an understanding of the new business models that will become possible. He points to the fact that Australia is only 18th in global digital readiness rankings, so clearly a lot of work has to be done quickly.

"It's interesting that this is happening at the same time as a global productivity slowdown," he says. "While we have some frontier firms that are clearly on top of this and their productivity is going ahead apace, it is more than offset by the laggards."

Speaking at the summit, William Hill Australia chief executive Tom Waterhouse said being able to gather and analyse data has been critical in growing his wagering business and allowing it to compete with international rivals.

"When we started, we needed data to optimise our marketing spend," he says. "We had to figure out how to optimise it over our different brands and use data to define what our business strategy would be."

Waterhouse says that during the past two years there has been a focus on the use of data in every facet of the business, from product development and trading to marketing and being able to identify growth opportunities.

William Hill Australia chief executive Tom Waterhouse says data has been critical.

Data science on its own is just one part of a machine.
Emma Gray, ANZ chief digital officer

ANZ chief digital officer Emma Gray agrees, saying data is all about driving innovation across an organisation. It is about finding more effective ways of serving existing customers as well as mounting campaigns to secure new ones.

"We get a cross-functional team together and a data scientist is one member of that team," she says. "We also have human-centred design and marketing at the table. We start off by deciding on what it is that we want to do (and) whether we have the data. Then can we get creative in how we can use that data to drive the use case."

Gray says it becomes a big creative process in which data is used to reach a wider, longer-term goal. "Data science on its own is just one part of a machine that is needed to take an idea from incubation all the way through to something a customer thinks is awesome," she says.

Adam Driussi, chief executive of data analytics company Quantium, told delegates data can be used to serve customers in ways that deliver benefits to them as well as to the business. He points to work his firm completed with supermarket chain Woolworths that involved generating highly personalised purchasing recommendations based on prior shopping patterns.

"Traditionally what would happen, when you think about a shopping catalogue, is that everyone sees the same ads," he says. "We built an algorithm to work out recommendations so that when Woolworths sends out promotions, all customers will get individual ads on items that are relevant to them."

As customer data becomes an ever more valuable resources for businesses, summit panellists also discussed the issue of privacy. They agreed a balance has to be found between ensuring data remains secure and using it to provide new services for customers.

"There are very clear rules about what you have to keep private (and) there are clear restrictions on what can be used," says Gray. "We have to make sure we build an infrastructure that allows us to step through a lot of the gates to say that, at every step, are we protecting customer information (and) are we protecting their privacy . . . it's a really big job."

Driussi agrees that privacy is critical for all businesses and consumers, however he warns that it is important not to get so hung up on things that opportunities are missed.

"If you go back in history, there are things we laugh about now but were real at the time," he says. "When motor cars first appeared, they introduced a rule that you had to have someone walking in front waving a red flag.

"It takes a little while for consumers to catch up with where technology is going and privacy is a good example of that. I think it is incumbent on us as industry leaders to be part of that debate and make sure companies do the right thing but also that, as a society, we don't miss out on potential innovation."

Playing video games can build resilience and optimism in workers

Employees

Ian Grayson

Most employers would frown on their staff playing video games at work, however research indicates it could result in better job performance and a more positive mental attitude.

Researcher and game designer Jane McGonigal says playing games that provide positive feedback and the satisfaction of reaching goals can result in significantly better engagement in the workplace. "People experience more positive emotions when they are playing a game," she says. "They bond with others and form teams more easily."

While not recommending employees spend all their working hours focused on games, she says there are ways to replicate the mental benefits that such activities can produce.

McGonigal has created a game called SuperBetter that sets out a quest for players and rewards them for overcoming obstacles and reaching goals. She says playing the game every day can "build personal resilience and make people more optimistic".

Jane McGonigal says games have a positive impact on the workplace.

"Games create the underlying neurochemistry required for a resilient pursuit of goals," she told the ACS Reimagination 2017 summit. "When you look at brain scans, video gaming play is the opposite of depression."

McGonigal says games have a positive impact on players because the stimulate both the hippocampus and thalamus. When a player is making many fast choices in a game, activity in their brain fires up so intensely that it results in a feeling of positive reinforcement. "You go into learning hyperdrive where you can take advantage of the opportunity to learn and improve," she says.

McGonigal points to the benefits many gamers reported after playing the massively popular Pokemon Go game. The team play and goal attainment factors within the game aid positive reinforcement and lead to players feeling better about their lives.

"The factors that make this game appealing can be readily translated into the real world. People come to feel that, no matter where you are, you can do something, and they get that good feeling that flows from success."

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