



CREATIVE INNOVATION 2016 ASIA PACIFIC

The Exponential Shift – Making Transformation Happen

A post-conference recommendations paper for Australia's Future

Prepared by Terry Barnes, policy consultant and media commentator

Executive Summary and setting the scene

The Greek philosopher Heraclitus once said, “the only constant of life is change”.

How right he was.

But the pace of change Heraclitus would have experienced several thousand years ago is glacial compared to what we experience today. Technologically, economically and politically, the world of 2017 is light years removed from the world of fifty years ago, let alone the world immediately before the Industrial and Communications Revolutions.

In 1967, computing was still in its infancy, and computers themselves were still massive machines occupying immense floor space. The latest in sound recording was magnetic tape and the first cassette recorders. In Australia, we still used rotary-dial phones dating from the time of Alexander Graham Bell. If you were away from your home or office, you had to use cumbersome public phones

Since the late 1960s technology has progressed at a rate then unimaginable. Those huge 1960s computers had a fraction of the data memory and processing capability of the devices now held in the palms of our hands. Moore’s Law doubles computing power every two years, growing our capacity to collect, crunch and apply data of a dazzling variety, for purposes a generation ago we couldn’t dream of. With the exponential expansion of computing power comes the exponential expansion of knowledge and information.

Ci 2016
CREATIVE INNOVATION
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THE EXPONENTIAL SHIFT
MAKING TRANSFORMATION HAPPEN.

“What used to fit in a building, now fits in your pocket, what fits in your pocket now will fit inside a blood cell in 20 years.”

Ray Kurzweil

creative universe

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And the Internet now binds our whole world together with mighty but invisible cables of digital data. Today, the poet John Donne rightly could say that “no man is an Island, entire of itself” when we are in instant contact with the entire repository of human experience via our smartphones:

in 2015 there were 99 mobile phone subscriptions per every 100 people on the planet¹, and 67 per cent of the world population use the Internet².

In dirt-poor Indian rural villages, poverty, disease and illiteracy are still pervasive, yet even the poorest villagers now have access to mobile phones even while their homes and villages lack basic sanitation. Their thirst for information, to be connected and be part of the wider world, has become a basic human need for them.

Sir Francis Bacon once wrote “Knowledge itself is power”. But knowledge depends on information, and access to information – from the secret of the human genome to funny cat videos on YouTube – has been democratised to an extent that humanity is overloaded by the sheer volume of information, and risks being overwhelmed altogether. Even the advent of Gutenberg’s printing press, over seven hundred years ago, is nothing to the information avalanche of the 21st century.

What’s more, the march of robotics, artificial intelligence and automation continues apace. While low-level, process-driven jobs have been lost to automation for decades, robots are starting to be less like machines and more like rudimentary thinking beings. Programming has become highly sophisticated, and as computing power increases exponentially we will be light years ahead of now by 2030.

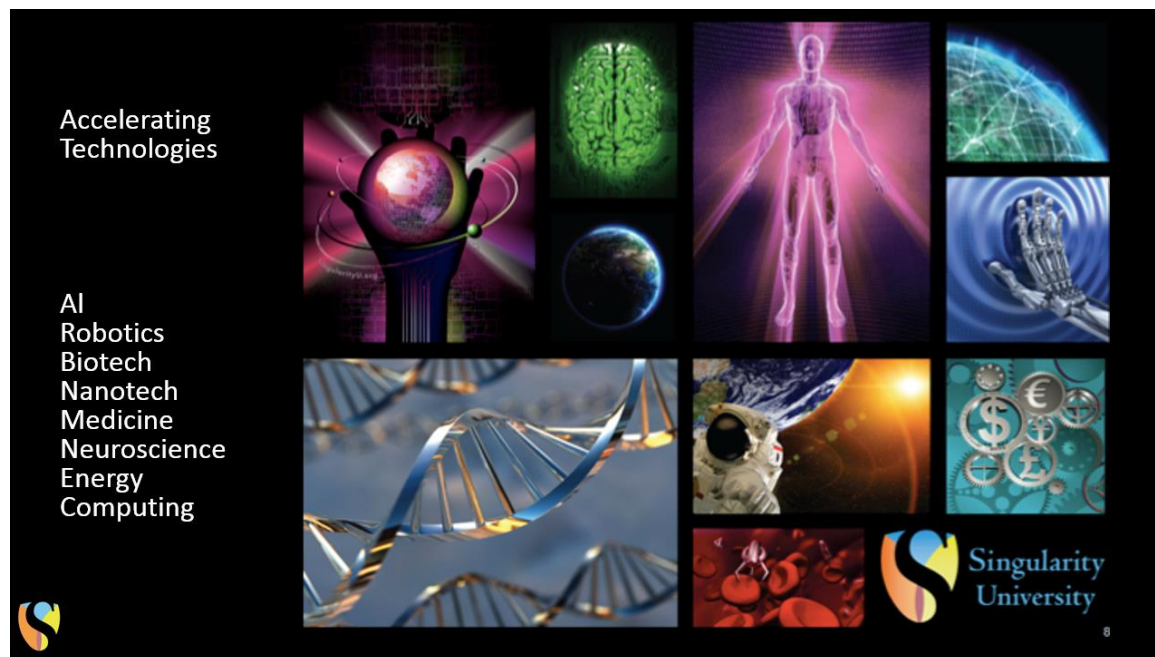
Increasingly, those who most cheer the rushing advance of the robotics revolution – the highly-educated scientists, professionals and business leaders whose leadership depends on their training and highly-honed analytical abilities – risk themselves being made redundant if their role involves predictable and definable patterns of work.

If an algorithm can be written to make it comprehensible to a machine, it is able to be automated. As Silicon Valley futurist Martin Ford pointed out at Ci2016 and in his seminal book, *The Rise of the Robots*, being part of a social or economic elite is no guarantee against being made redundant and irrelevant almost overnight.

In short, technologists and futurists may love the great scientific and technical advances just around the corner, and entrepreneurs and investors relish the commercial possibilities that are opening up on so many fronts. But for the rest of society, exponential and disruptive change brings challenge, uncertainty, even fear. Millions, even billions of people risk being displaced, their livelihoods lost or disrupted, particularly in countries and societies who have yet to feel the full benefits of economic development and prosperity.

¹ World Bank data: <http://data.worldbank.org/indicator/IT.CEL.SETS.P2>

² Pew Research Centre, *Smartphone ownership and Internet usage continues to climb in emerging economies*, February 2016: <http://www.pewglobal.org/2016/02/22/smartphone-ownership-and-internet-usage-continues-to-climb-in-emerging-economies/>



Key exponential technologies as outlined by Ramez Naam (USA)

But the future is brighter than it is bleak. Human ingenuity, creativity and innovation continue to be the driving force of humanity. The gap between have and have-not nations is lessening as innovations make the technological tools of progress more accessible and affordable, even to some of the poorest people on earth. We continue to make great strides in the fight against death and disease, making the lives of billions happier, healthier and safer. The democratisation of information technology benefits everyone, not just an elite few.

Governments, businesses, families and individuals must decide how to ride the mighty waves of change, or risk being swamped by them. The task today of opinion formers and thought leaders is to think not only of what now is possible, but even more importantly to think of possibilities that as yet cannot even be imagined, yet in just a generation from now will be reality.

That is the value of an event like *Creative Innovation 2016 Asia Pacific*.

The event is unlike any other in Australia, as it brings together futurists, with business leaders, academics, and social commentators in dialogue on common themes. Importantly, the dialogue is interspersed with creatives and artists to bring different perspectives to the familiar themes and to ensure that monologue is not the main delivery vehicle. This inspires and draws out innovative ideas and knits together an otherwise wide ranging discourse into a call for action.

There are some critical domains of understanding and action which flow from the 2016 event:

1. Unlike past technological disruptions, the current way of information and communications based disruption is ubiquitous and affecting all sectors in the economy and our society simultaneously
2. The power of this technological change is disruptive by destroying traditional business models, markets, and jobs, while at the same time driving a new empowerment of consumers and citizens like never before
3. While a great deal of focus has been placed on the destructive elements of new technology OR on the scientific achievements represented by the new technology, little attention has been paid to the transition which needs to occur in order to minimize social and economic dislocation

4. The social and economic dislocation from new technology such as robotics and AI can occur rapidly and across many fronts and could give rise to social ills such as depression, loneliness, social unrest, and the loss of faith in our democratic institutions
5. The Federal Government should consider the establishment of a Futures Commission to drive an informed debate on topics which will assist governments, business, and the community to better adapt to this wave of technological change better than it otherwise would – including on topics such as:
 - the robotization of the workplace;
 - the value of work and leisure;
 - the privacy and ownership of personal data in a world of genomics, blockchain, and networked systems; the new economic value in markets and the question of taxation;
 - what does identity mean in a world of genomics and humanoids; and
 - how best can new technology allow us to deliver caring and meaningful services to the most marginalized in our society.
6. The adoption of the Creative Innovation Asia Pacific event and format could be harnessed by the Federal Government to drive a significant number of these debates in a way which benefits policy makers, regulators, business and society at large. It could provide the vehicle to socialize a number of these value rich topics and thus reduce social anxiety.

A Futures Commission and the utilisation of the Creative Innovation Asia Pacific conference can empower us to grasp our common future – not to control it but to mould and adapt to it. Ultimately, it can help us reclaim our sovereignty as individuals and as a collective to write our own future at a time when exponential change abounds and we feel less in control. The political, and socio-economic benefits of such a discourse can be enormous and high distributed across our polity. It is no longer a nice-to-have, but indeed an imperative.

Conference Founder

Tania de Jong AM

Patrons Hugh Morgan AC, Professor Allan Fels AC, Sir Gus Nossal AC

Advisory Panel: <http://www.creativeinnovationglobal.com.au/Ci2016/advisory-panel/>

With special thanks to Terry Barnes and Pradeep Philip for their contribution to this report.

Ci2016 – a gathering of minds



Watch the Ci2016 Highlights video: <http://bit.ly/ci2016highlights>

On 7-9 November 2016 there gathered in Melbourne some of the leading minds from around the world, with the shared aim of challenging and stimulating participants to think about the pace and shape of changes we're only now starting to grasp, and how best that governments, economies and communities anticipate and respond to them.

That event was Creative Innovation 2016 – Ci2016. It was the latest in a series of world-class events that have been global talking points since the first

At the Sofitel Melbourne On Collins, Ci2016 gathered:

- Over 40 speakers, from the United States, the United Kingdom, Japan, Singapore and Australia
- Over 750 registered delegates
- Delegates from Australia and nine other countries including the US, UK, Europe and Asia-Pacific
- Participants from the private sector (40 per cent); government (35 per cent); universities (15 per cent); and not-for-profits and the media (5 per cent)

Others came from many walks of life to the Ci2016 gala conference dinner, where they were entertained by the combined *With One Voice* choirs of Creativity Australia, which include many people from socially and economically disadvantaged backgrounds, for whom those choirs give them a community and support network that helps them break free of disadvantage and isolation.

Ci2016 founder Tania de Jong AM says those choir members were just as important for the event as any of the famous international speakers. "Our choir members represent the people who already have been caught up by rapid social and technological change, and are the people whom global leaders mustn't forget and strive to ensure aren't left behind", she says.



The With One Voice Choirs performing at the Ci2016 Gala Dinner

The conference coincided with the US presidential election which, with the election of Donald Trump, which itself was a disruptive event. Like Brexit earlier in 2016, Mr Trump's election as President shook up the mindset of our political and policy-making institutions, and was a reminder that not everyone is happy with the pace of change in the world, and that many millions feel disenfranchised in the world around them.

Watching the US election count unfold as Ci2016 concluded, participants were reminded that they were not talking in a vacuum, and were challenged to think about their ideas, their visions and their beliefs and how they best applied to the wider world.



[Watch and share the opening video of Ci2016 about our future predictions to 2025.](#)

Conference conclusions: shaping conversations about the future

Ci2016 was much more than a conference. It was a meeting of many minds. Its speakers and participants, through presentations, masterclasses, breakout sessions and many other lively discussions, raised both questions and answers needing further discussion, and offering insights for the future. Ci2016 highlighted challenges that will define Australia and the wider world's destiny for decades to come.

As a result, it also highlighted key conclusions that themselves help sign-post the way for opinion-formers, policy-makers, and people in business and the not-for-profit sector. Out of the three days of intense interaction, key points of conclusion from Ci2016 include:

- The future is going to be nothing like our past – full of exponential change invoking new opportunities and social anxiety.
- Change must be our servant, not our master.
- Don't just get caught up in the excitement of change.
- We mustn't forget those disrupted by change.
- The new jobs of the future must be meaningful jobs.
- Maximising benefits and minimising costs
- Profound change needs to be democratised
- Robust popular debate about the consequences of change is welcome.

The future is already here

From the presentations of Ci2016 speakers, it's clear that the coming decades are going to be a time of massive change, of continuing exponential growth in the sum of human knowledge, and technology will play an even greater role in freeing humanity from poverty, ignorance and want. Automation and artificial intelligence will transform the way we live, work and play. Robots and machines will become our partners as well as our servants.

In other words, the future – both incredible and worrying at the same time - is being written right now at a pace which is exponential. It's something to which we can all look forward if we can all participate in writing this future. Key presentations at Ci2016 highlighted the good that can and will come, including:

- World-leading robotics expert, Professor Hiroshi Ishiguro of Japan, demonstrated at the conference his robot self, showing how robots increasingly will be developed to take on human characteristics and human-like programmed reasoning.
- Professor Daniel Kraft of the USA excited delegates with his presentations of how AI, robotics and, above all, unleashing the analytic and diagnostic power of data will go way beyond the FitBit to transform not only the way we deliver health diagnoses and services, but how we manage our own health.
- Professor Michelle Simmons of the University of NSW highlighted the advancement just around the corner to shape the future through quantum computing, a giant leap from today's digital capacity.
- Ramez Naam highlighted how driverless cars and commercial vehicles can make our roads safer as well as more efficient.



Professor Hiroshi Ishiguro and his humanoid counterpart

To many people who will be born in the mid-21st-century, the way we live now will seem old-fashioned and quaint. For those us alive now, the future is a place of excitement and wonder, a whole new world to discover and explore. While the curve of change gets ever steeper, it remains the same curve humanity already has been travelling ever since the wheel was invented.

What is science fiction in one age will become science fact in the next. That's innovation as a force for good. And that's awesome.

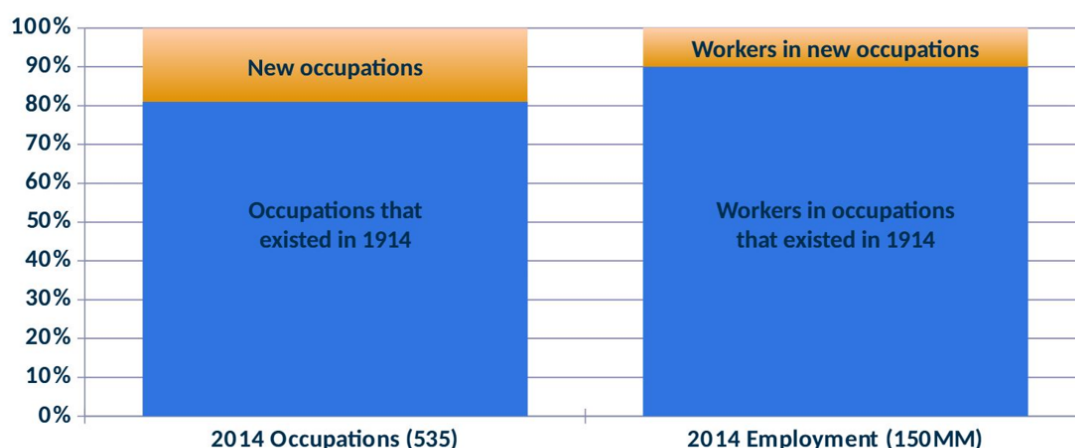
Change must be our servant, not our master

Humanity's capacity to solve problems, to invent and innovate, is vast. Changes just over the horizon may be exciting and awesome, but they will change our lives, our society and our economy beyond recognition. As in the first twenty years of the Internet era, there will be industries, businesses and jobs that will spring up that today we can only start to imagine.

That's a great thing for everyone. New jobs mean new opportunities. Greater technological efficiency means greater productivity. The dividends of greater prosperity can be shared by all.

The Rise of the Robots can, therefore, be a good thing. But on the other hand, very rapid technological, social and economic change can become an enemy as much as a friend. It can make whole ways of life disappear almost overnight, and major disruptions have major consequences. (See the below graphic extracted from Martin Ford's talk at Ci2016)

Old vs New: Occupations & Jobs



Source: Gerald Huff, based on an analysis of BLS data

3

It will always be better to be a disruptor than one of the disrupted.

Policy-makers, business and community leaders therefore need to anticipate the likelihood and nature of technology-driven change, be pro-active in determining its costs and benefits, and identify potential winners and losers. They need to prepare their economies, societies and individuals for disruption, and as best they can equip their citizens to ride the wave.

Governments should never stand in the way of change, but they need to show leadership in managing change and its consequences. Their goal is to ensure that the changes that are coming will be our servants, and will not become our masters.

That this role for government, and political leadership, is far from easy was highlighted by the fear and uncertainty of millions of ordinary Americans tapped by Donald Trump in his presidential election campaign. Simply pronouncing something as good is not enough: explaining why it is good, and what the benefits of it will be, is even more important.

There is doubt, in Australia as well as elsewhere, whether our leadership class have the ability, let alone the vision and courage, to undertake this role. It is far easier for opponents to create fear than for advocates to create hope when change and reform is in the air.

Don't just get caught up in the excitement of change

New York based entrepreneur and researcher Patrycja Slawuta told Ci2016 that technological innovation is marvellous, but don't leave it in the hands of Silicon Valley. She made the point that the further away people are from the centre of innovative creation, the greater the power of the basic human instinct of fear and the need to seek security in the face of change.



Patrycja Slawuta on stage at Ci2016

Patrycja was right. Inventors and innovators are enthused, enthralled and excited by their creations, and their ability to conceive and achieve wonderful things. But they don't necessarily understand the bigger picture – the context in which their creations will affect the wider world, and the intended and unintended consequences of their application. Being close to the source of change, or being that source, means being objective about its value and potential is very hard, if not impossible.

Similarly, those who apply innovation and change don't necessarily think of the bigger picture either. Business leaders, for example, may rush to automate their operation, attracted by potential big increases in productivity and efficiency, lower costs and greater profitability.

They may not so readily see, however, that automation can disrupt markets, not least by reducing the scope for men and women to earn incomes that give them the resources to spend on goods and services produced by automated businesses.

And, as Facebook's Mark Zuckerberg has discovered around the rise of "fake news"³ recently being given currency, authority and worldwide dissemination through his social network, even the most positive innovations can have unintended negative consequences.

Processing and managing change affecting whole societies means keeping distance, objectivity and perspective. Pursuing greater agility and innovation is important, and ensuring private and public investment in innovation is vital. But at the same time, leaders and decision-makers need to stay level-headed, realistic and grounded.

The message from Ci2016 is clear: we must embrace disruption and accept change, but we also must not pursue such change for change's sake.

³ [Facebook's plan to stop fake news revealed by Mark Zuckerberg, but site will continue to promote stories it knows to be fake, The Independent, 2016](#)

We mustn't forget those disrupted by change

Societies are communities. We look out for one another, either directly or through our governments and community organisations.

Change will create new and exciting opportunities for many millions. Millions more will have the skills and ability to surf the wave of change, and adapt to whatever it brings.

But many more will be swamped. If driverless vehicles become the norm, the 40 percent of jobs that Martin Ford estimates involve at least some driving will be drastically changed or become obsolete. And as robots and artificial intelligence become the norm, many others will find their livelihoods gone, without the training and skills to earn a comparable or better income.

Governments and employers have an obligation to their people to help them adjust to rapid change. *Rise of the Robots* author Martin Ford argues that societies must guarantee a basic social wage for all their members, whether or not they have a paid job⁴. He recognises that at least some people will be left stranded and find it difficult to impossible to sustain themselves by gainful paid employment.

That may be an answer, but it is not necessarily the only answer, nor even the right answer in societies and capitalist economies built on the belief that work gives a person purpose and dignity. Whether robotics and AI are an existential threat to capitalism will itself become a hot topic of debate in coming years.

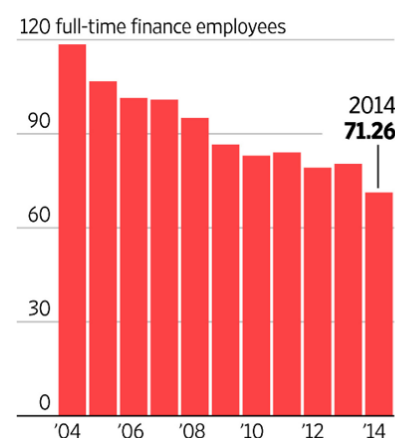
One of the lessons from Ci2016 is that we need to invest in not just education and training for the younger generations who will be in the engine room of change. We must also invest in education, training – and retraining – for older blue and white collar workers, and professionals, who will be displaced by automation and technological advances. (See graph below on white collar automation from Martin Ford's talk at Ci2016)

White-collar Automation



Source: Hackett Group, Wall Street Journal

Median staffing in corporate finance departments per \$1 billion of revenue*



⁴ [Martin Ford explains the need for basic income on MSNBC's The Cycle](#)

It may even affect our thinking about population growth. If the world's population continues to grow at its current rate, and there are already not enough jobs for all, what will a far more automated global economy be like? Will new jobs and new industries absorb the people available to work in them? Or will there be a large class of permanently unemployed in developed economies, and huge pools of dispossessed, under-educated and lost people in the Third World. And as for those Third World economies, how will these be able to breakthrough into the developed world? Accepting that change will replace more than semi and unskilled workers itself will change the way policy-makers think about the problem of job displacement and lifelong workforce participation. Instead of looking at affected workers as a problem to be solved – as experts and bureaucrats so often do – professionally trained people will come to realise their working futures could also be disrupted.

Governments should be prepared to make that investment, but they shouldn't do it alone. Businesses have a responsibility to their employees to invest in their ongoing vocational development and upskilling, not only helping to improve their productivity and value to the company, but to help them adapt and survive should the disruptive crunch come.

The new jobs of the future must be meaningful jobs

It is one thing for innovation and change to create millions upon millions of new jobs. As much as possible, these jobs must be quality jobs, offering workers challenge and satisfaction as well as an income. As former European economics editor of the Economist, Paul Wallace, wrote recently, "Automation looks set to continue whittling away mid-skilled routine jobs while expanding requiring those requiring both high and low skills. The only realistic answer to this increasing polarization is to redouble efforts to foster lifelong learning and to upgrade skills and expertise."⁵

Wallace is right, but it isn't as simple as that. As speaker after speaker highlighted at Ci2016, automation is coming for not just low and mid-skilled jobs, but for high-level professional jobs that may have required years of education and training, but involves predictable and repetitive work that can easily be replicated by a complex computer algorithm.

Would a radiologist, who may become redundant by specialised and programmed scan-reading machines, really want to retrain as a yoga instructor or personal trainer? Should they be expected to? And what of the loss of prestige and status that they would experience: will that have implications for their mental and physical well-being?

Professionals as a group are particularly vulnerable to automation, yet as a group they mostly don't see it coming for them. Technological disruption is no longer a matter of automating the factory floor, the warehouse, the farm. It is about to reach into every workplace in a way that no one will be untouched. For many, years of study and training, and professional prestige, will count for little when the wave of change reaches them.

Simply predicting there will be new and more jobs therefore isn't enough. We need to make sure they are quality jobs as well.

⁵ Paul Wallace, Don't fear the robots, they won't kill jobs, *The Age*, 30 December 2016, via Reuters: <http://www.theage.com.au/business/workplace-relations/dont-fear-the-robots-they-wont-kill-jobs-20161222-gtgyxe.html>

Just as importantly, we need to question the rush of change as we go. We need to ask ourselves whether the personal, social and economic benefits of automation and other new technology outweigh the costs as they come online or reach the market-place.

When it comes to making policies and funding programs, politicians and policy-makers must not forget the human dimensions of change. The dignity of work is something that can never be replicated by a machine, and those in danger of left behind deserve our support most of all.

Policy and regulation should facilitate innovation while protecting the public interest

When motor cars started appearing in Europe in the late 1800s, some countries regulated to ensure they were preceded by a man carrying a red flag. Consequently, for years the advance of the horseless carriage was kept to walking pace. Only after such oppressive and unrealistic restrictions were lifted did the development of the car start to accelerate.

The same principle applies today. While no one is suggesting that rapid technological and scientific change should be unregulated, the natural tendency of politicians and bureaucrats is to regulate, and to be over-cautious in how they regulate.

Importantly, policy and regulation should encourage a culture and innovation, not stifle it. Renowned business leader David Gonski reminded Ci2016 that Australian corporate law is geared to protecting consumers and investors, punishing failures rather than allowing them to occur as part of a natural cycle of innovation and experimentation. And, as Innovation Chief Bill Ferris and Australia's Chief Scientist Alan Finkel graphically pointed out, Australians are outstandingly excellent at invention, but lag behind much of the developed world in their ability to covert ideas into commercialised reality.

It's up to politicians and regulators to work with researchers, innovators and entrepreneurs to ensure they have the freedom to do what they do best, while safeguarding the interests of markets and the public. That is not an easy balance to strike.

Maximising benefits and minimising costs

While facilitating innovation and opening doors to profound change is key, it's just as essential that policy makers and regulators not only stay abreast of current developments, but anticipate future trends, how they will affect us, and how their costs can be minimised and their benefits maximised.

As Patrycja Slawuta reminded Ci2016, the psychology of fear is a big factor in the acceptance of any change beyond a person's control. Regulation and policy needs to recognise that fact, while not holding back change simply for the sake of doing so.

This is always going to be different when politicians seeking election play on people's fears more than appeal to their hopes and aspirations. In democracies like Australia's, it's vital that the political debate rises above populism and fear, and helps people understand and embrace change.

As cataclysmic political events in 2016 show, especially Brexit and the successful presidential campaign of Donald Trump, millions of people fear the loss of control of their own lives to forces they can't understand. If the innovators and entrepreneurs who drive technological change and innovation don't accept this, and respond understandingly to the force of human nature, beneficial progress will be slowed or stopped, even as our innovative capacity continues to expand.

As our civilisation becomes ever more innovative and technological, it will be more important than ever to honour personal freedoms, privacy and dignity. Those who are leading the charge towards the future have a duty never to forget the trust the rest of humanity is placing in them to do just that.

Profound change needs to be democratised

Transformative change of the nature we're expecting can only be successful if it embraces everyone, and everyone has a stake in the future.

On an economic level, for example, a brave new world could be one in which automation, robotics and AI create new industries, and make existing industries so efficient that the jobs pool for human workers dries up – and therefore the pool of customers with sufficient income to spend on goods and services dries up as well. In other words, change needs to feed prosperity, and prosperity feeds change.

While it is vital that the flow of human creativity isn't stopped, and that inventors and entrepreneurs should profit from their investments and risk-taking, technological change that affects the way we all live must be in reach of everyone. Intellectual property protection must be balanced with ensuring that millions, even billions, of people are not shut out from accessing the benefits of innovations over the horizon.

That not only requires foresight and understanding from national governments like Australia's. It also affects super-national organisations, especially the World Trade Organisation, and negotiating bilateral and multilateral trade agreements.

The information and communications revolutions of the Internet and social media have carried all before them because they are democratic revolutions. Access to them is free of charge to the end user, apart for the cost of their online connections. Connectivity providers like Facebook make their money from the many millions of end users to whom they or other businesses and organisations can reach. Some have profited spectacularly from their inventiveness – Bill Gates, Steve Jobs and Mark Zuckerberg are just three, just as Thomas Edison and Henry Ford did in their day – yet the revolution they have brought still belongs to everyone.

In healthcare, particularly, it is essential that life-saving new technologies and data analytics are not denied to people who need them for simply commercial considerations. As for medicines, new medical technologies and applications, such as those Daniel Kraft highlighted at Ci2016, need to be treated in the same way as pharmaceuticals: the sponsors deserve a reasonable chance to get a return from their R and D investment from the patent regime, but the time before patented inventions enter the public domain needs to be limited to a finite period.



An example of exponential technology used in Healthcare, 3D printed cast

It may well be that the rate of 21st century progress will be rapid but incremental, with innovators continually improving on major inventions and breakthroughs, and finding new applications for them. It therefore may also be that the IP regime becomes much more focused on “innovation patents”, giving shorter-term protection for innovation rather than invention.⁶

And, of course, with inventions, innovations and applications we simply don’t yet comprehend, it may well be that established intellectual property regimes will become totally inadequate. This will be a great challenge for all of us, not just for governments and regulators, in the innovation explosions of coming decades.

Robust popular debate about the consequences of change is welcome

The opportunities, challenges and costs of rapid innovation affects every man, woman and child on the planet. Everyone has a stake, and everyone is entitled to have their voices heard about the shape of the future.

Some of those voices will demand that no barriers be put in the way of seismic technological change. Others will want to stop change at all costs, for fear of losing jobs, dignity or simply their way of life. Still others will want progress, but insist we must slow the pace down so everyone can adjust to what is coming.

All these views are valid, and none of them wrong. But their advocates must make their case, win support, and bring governments, institutions and, above all, people along with them.

It therefore is important to consider not only the possibilities of technological innovation, but its human effects. This includes debating the ethics of innovation, and even being prepared to question whether the costs of implementing possible change are greater than the overall benefits. For example, if driverless vehicles may make millions of jobs which are centered on driving redundant, should the place of moving to a driverless world be slowed or stopped?

While forums such as Ci2016 make a vital contribution to the debate, they are in large part talking to experts and the converted. That is truly important, and helps shape thinking and forms opinions,

⁶ IP Australia, types of patents: <https://www.ipaustralia.gov.au/patents/understanding-patents/types-patents>

but their value is greatest in influencing a vast, worldwide conversation in which everyone can take part.

The message to Ci2016 participants is to go out and plunge into that conversation. Lead it but don't dictate it. Be prepared to defend as well as evangelise. Understand that not everyone sees the future exactly as you do. Accept that shaping that future is a partnership, and not top-down control. Above all, strive to make the future a place where everyone has a place in a world where the only constant is change.

Robust popular debate about the nature, pace and ethics of profound technological change is not something to be avoided: it is something to be welcomed by all who believe in the possibilities of the future.

We need that debate, and we need people to guide and lead it. That is what the series of Creative Innovation conferences, since they first started in 2010, is all about.

Conclusion

Conferences like Ci2016 matter only if they have lasting value. By taking the issues that arose from its three days of discussion, and putting them out as challenges for the wider community to think about, it can make a valued and worthy contribution to a difficult public conversation.

As Heraclitus continues to remind us across the millennia, we live in an ever-changing world, and the pace of change is getting ever faster. If we can ride its wave and surf it into the future, we are heading towards a brilliant future beyond the imaginings of even the most visionary science fiction writers. But that future must be a place where all belong and have a place, not just a select few in the scientific, business and political elites.

Ci2016 brought together some great minds. It created great discussions that raised challenging questions. The next step is to contribute its torrent of energy, vision and ideas into positive actions that help the wider world to understand, process and embrace the one inescapable constant of our lives.

Change.

What the Ci2016 Delegates Say:



"Creative Innovation 2016 was a fantastic experience that included great speakers and vibrant debate and discussion of the issues and trends that will loom large in the future, together with an emphasis on compassion and the need to be inclusive that I have seen at very few other events."

Martin Ford, Author 'Rise of the Robots'

"An incredible and insightful event. I doubt that anyone walked away without feeling some level of disturbance but also excitement at what might be possible. The pace of change is something government and society has to really come to grips with to ensure we are ready for the future and we plan and work hard to not leave people behind."

Jane King, Deputy Commissioner, Design and Change Management, ATO

"Creative Innovation always delivers the goods. The unique combination of top executives, government officials, thought leaders, artists, and entrepreneurs provides a potent combination of inspiration and insight. If innovation touches your life, it is an absolute must."

Scott Anthony, Managing Partner, Innosight

"Our team really enjoyed opening our minds, learning new things and meeting some fantastic people. It was great to feel a part of such an exciting movement. I also loved the personal touch you brought to it, thank you. Your With One Voice group were inspiring and added such a great element to the conference."

Caitlin McCarthy, Human Synergistics

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Read [Siobhan Curran's report](#) of Ci2016. It's an excellent narrative summary, but descriptive and concise.