



THE IMPACT OF TECHNOLOGICAL AND OTHER CHANGE ON THE FUTURE OF WORK AND WORKERS IN AUSTRALIA

AIIA Response to the Senate Select Committee Inquiry

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About AIIA

The Australian Information Industry Association (AIIA) is Australia's peak representative body and advocacy group for those in the digital ecosystem. AIIA is a not-for-profit organisation that has, since 1978, pursued activities to stimulate and grow the digital ecosystem, to create a favourable business environment and drive Australia's social and economic prosperity.

AIIA does this by: providing a strong voice on policy priorities and a sense of community through events and education; enabling a dynamic network of collaboration and inspiration; and curating compelling content and relevant information.

AIIA's members range from start-ups and the incubators that house them, to small and medium-sized businesses including many 'scale-ups' and large Australian and global organisations. We represent global brands including Apple, Adobe, CISCO, Deloitte, DXC, Gartner, Google, IBM, Infosys, KPMG, Lenovo, Microsoft and Oracle; international companies including Optus and Telstra; national companies including Ajilon, Data#3, SMS Management and Technology and Technology One. While AIIA's members represent around two-thirds of the technology revenues in Australia, more than 90% of our members are SMEs.

Our national board represents the diversity of the digital economy; more detailed information is available on our [web site](#).

Summary

Please note that AIIA's response does not attempt to respond to all elements of the Terms of Reference for this enquiry. We make suggestions throughout the paper for change based on evidence provided by our own research and industry activities of our members.

AIIA welcomes this opportunity to provide input to the Senate Select Committee reviewing the impact of technological changes on the future of work and workers in Australia. The concerns reflected in the Committee's Terms of Reference echo a debate underway internationally on what the likely impact of existing automation and technology capabilities will be on labour markets and employment.

Polarised between hope and fear, the debate has fuelled concerns that a large proportion of occupations and tasks is vulnerable to automation. Ranged against this view is the hope that technology has already ushered in new growth and productivity for global economies, especially developing economies, and will only continue to do so.

AIIA believes that both these views require a positive, proactive narrative supporting early action and intervention to build the human and workforce capabilities and skills required to prosper in this modern digital age, and into the future. Importantly, it needs to be a confident debate about a future in which technology will be integral to the way we work with assurance that mass unemployment is literally not around the corner. While some jobs and people will be impacted more than others, new opportunities and new jobs will emerge. Australians need to know that the impact of technology on how we work and the types of jobs we do can be, and will be, managed. This includes a clear strategy preparing for the future supported by rigorous policy responses. This is imperative to building the confidence Australians need to stay focused and engaged to maintain and grow national prosperity.

Central to an appropriate Government response is the urgent need for a bi-partisan, economy-wide, **Future Workforce Development Strategy** to:

- Establish a needs/gap analysis, informing the government response;
- Identify new jobs and roles that are emerging as technological developments penetrate deeper into economies and labour markets;
- Identify new skills requirements for these jobs including the transition from existing silo-based skills to future workers who are agile, flexible and creative problem solvers;
- Facilitate digital literacy and digital inclusion;
- Address education and training gaps.

In a major research paper recently published by AIIA ("Skills for Today – Jobs for Tomorrow", attached), the industry analysed these and related issues to start a serious and focussed conversation across the broader community about how we best prepare to be workers in an ubiquitously connected and digitally smart world. In developing this research, the sector that is both driving the change and developing the solutions for our future, aims to tackle the debate head on.

To capture and deliver on the actions coming out of this enquiry, AIIA strongly recommends that Government establish a high-level **Future Workforce Action Group** to ensure sound policies translate into robust programs with appropriate regulatory oversight. This Action Group must include unions, business, the education sector and government, and its priorities include:

- Identifying and addressing the needs of vulnerable sectors of the labour market;
- Providing opportunities for workers to re-skill and up-skill to ensure potentially disrupted workers are not displaced or dislocated from the broader community;
- Investigating new skill acquisition and employment based learning pathways, including life-long learning;
- Building Australia's digital literacy capabilities to prevent social and economic dislocation; and
- Working with unions, employers and the broader community to help develop more appropriate and effective digital acceptance, skills, and safety strategies.

Introduction

*"Jobs matter. For almost all of us, they are more than a source of income. They provide opportunities for social interaction; a source of self-esteem; or a feeling of purpose through making a contribution to a profession or community. And the skills embedded in jobs are one of the principal drivers of increased productivity."*¹

In its latest review into Australia's productivity, the Commission examines, inter alia, future skills and work in the labour market. It goes on to say that labour markets do not stand still; occupations, skills and jobs come and go, mostly with the introduction of new technologies.² But throughout history, no technology (or aggregation of them) has succeeded in removing people's capacity and desire to work. Over the long run, technology has been a friend to many employees, removing jobs that are unpleasant, physically tiring, dangerous or tedious. Overall, employment persistently grew despite these fundamental technology changes, as did wage rates.

There is no doubt however, that some jobs will disappear forever as technology advances. Truck drivers in large mines for example, are replaced by driverless trucks that are safer and more productive. But most bleak projections about the future relate to gross jobs, not net jobs. Historically, technological advances have also created new jobs. This is evidenced by the absence of any downward long-term trends in Australia's employment to population ratio, or a sustained increase in unemployment rates. The degree to which new jobs involve higher skills varies, because there are several mechanisms that affect the skill composition of jobs, such as:

- Technology is often complementary to high-skilled labour. Skilled labour, combined with technology, raises productivity and the demand for more skilled workers.
- Technology also creates jobs throughout the economy. Productivity gains arising from technological progress flow through to the economy — as lower prices, higher wages for the remaining employees, and/or higher profits — to create new demand and associated jobs.³

It is therefore essential that government introduce policies and programs that enable workers to change jobs readily, and to develop new skills as part of that transition. Policy settings must:

- Create the right supply-side settings for the skills system. This means an efficient, high-quality and flexible education and training system that is driven by the needs of users (the people acquiring the skills and the businesses that need them) rather than the interest of suppliers or legacy models of provision and government funding;
- Ensure that the demand side for the right skills is not frustrated by poor incentives to undertake training, excessive costs of obtaining skills, poor information about the skills needed for future work, or weak foundational skills that make such investments virtually impossible;

¹ "Shifting the Dial". Productivity Commission Report No. 84. October 2017

² The Commission rightly defines technology with an economic focus; electricity, telephones, plumbing, refrigeration and personal computing are all 'technologies'.

³ "Upskilling and Retraining". Supporting Paper No. 8. Productivity Commission

- Address other barriers to re-skilling such as the absence of triggers prompting workers to re-skill and lack of advance knowledge about when markets and roles might change. Redundancy is a poor starting point for re-skilling;
- Address employer bias against older worker participation and upskilling;
- Develop a community narrative that openly canvasses all the issues about market automation and skills changes, and provides practical information in a single, comprehensive source about the opportunities available.

Technology- Jobs and Growth

Recent advances in technology have given rise to what is commonly described as the digital economy – an economy based on digital computing technologies. In Australia, like most of the developed world, the digital economy has been growing at an exponential rate with profound implications for the local economy.

Digital technologies contributed an additional 58% to the Australian economy from 2011 to 2013-14, increasing from \$50 to \$79 billion. It is forecast that information and communication technology (ICT) employment in Australia will grow by 2.5% per annum over the six years from 2014 to 2020, increasing the ICT employment base from 600,000 to more than 700,000 workers and outperforming the Australian jobs growth forecast. For those working in ICT management and operations the annual growth rate during the same period is expected to be higher at 3.1%.⁴

But ranged against these growth numbers is the wide community and “old-economy” fears that digitisation will reduce or forever change certain businesses. While the move from agriculture to manufacturing to information-based economies worldwide has cost jobs in some sectors, a more positive vision exists but can often become lost amongst alarming forecasts.

As an example, the Committee for Economic Development of Australia (CEDA) predicted that 40% of current jobs (particularly those requiring only low-level skills) have a high probability of being replaced by automation within 10 to 15 years. But AlphaBeta’s 2017 report for Google considers the uptake of automation and technology by Australia’s business sector and the likely impact this will have on productivity and employment. It makes the point that while automation will impact jobs, it is the way we do our jobs that will change.

It is worth quoting key findings at length:

- Most jobs will change as a result of technology, not disappear. Machines are expected to automate an additional two hours of routine and manual work in an average Australian work week by 2030. As has been the case between 2000 and 2015, most workers between 2015 and 2030 will be spending more time on different tasks within their existing jobs rather than changing jobs.
- Australians’ jobs will be safer, more satisfying, and better remunerated.
- Helping workers who lose their jobs as a result of automation is critical to maximising automation’s economic benefits. If every Australian was able to spend the extra two hours of weekly work time that machines are expected to shoulder over the next 15 years on higher-value activities (rather than simply reduce their work time by 2 hours per week), it could boost Australia’s economy by up to \$1.2 trillion in value (i.e. incremental gains to GDP) over that timeframe.⁵

Accepting that automation and new technologies will impact, to some degree, the nature of jobs and our workforce, and developing and committing to a planned response is where AIIA believes Government’s attention must be focussed.

In our view however, the Government itself is not embracing the opportunities and challenges thrown up by this current market transformation. While there is no shortage of rhetoric, there continues to be no dedicated Minister for Technology or a visible focus on technology-induced workforce changes in any portfolio. Australia is at a pivotal point in the development of a skilled workforce that can profitably exploit new roles and innovation provided by the changing nature of work itself. Poised on the edge of

⁴ Flinders University AITI. March 2017. AIIA’s attached research paper contains more detailed statistics.

⁵ AlphaBeta “The Automation Advantage” August 2017. pp. 6-7

significant success through innovation and better education and development of a smart workplace, Australia remains in a backwater compared with leading economies overseas. Other nations are moving quickly into this space and setting up cyber corridors with tax concessions and work/lifestyle conditions to attract top talent and companies. In particular world leading examples can be found in Norway, Sweden, Singapore, East Bloc countries like Belarus, and countries such as India and Malaysia.

Suggested Solutions

A dedicated Technology Ministry is established and specifically tasked to 'own' and 'lead' the effective integration of digital technologies and related policy and regulatory arrangements across key elements of Australia's economy.

Future Working Patterns for Australians

All market sectors and workers across the board will need to embrace new digital and technological advances and opportunities to ensure all our industries remain competitive. Sectors need to think now about the technologies specifically impacting their businesses and the implications for skills development and workforce planning.

AIIA has examined ten market sectors⁶ in its research - fast and slow growth included – and projected forward to posit what skills these sectors will need to cultivate to survive and prosper.

In summary, this review found that for all the 'new' jobs emerging in these sectors, new or updated skills and knowledge will be needed as part of core competencies. While some persist in characterising it as only a curriculum-based problem - the emphasis being on increasing the number of students studying science, technology, engineering and maths⁷ - at a fundamental level all workers will need the skills to interact with digital technology, regardless of whether they study physics to year 12 or not. A range of 'soft' skills such as communication, empathy, creativity and adaptability complement other 'hard' skills and are useful to navigate changes in job requirements.⁸

Technical proficiency alone is not enough. AIIA now knows that even across our own membership of technology leaders, where STEM skills are central, businesses want more than hard technical skills. Enterprise skills such as complex and creative problem solving, innovative thinking, communication skills, teamwork and collaboration and an understanding of the business and industry context are what many of our own members are looking for from their hires. This is consistent with analyst predictions that more technical and cognitive skills such as creativity, reasoning and complex problem solving, combined with social skills (influencing, persuasion, emotional intelligence and the ability to teach others) and processing skills (active listening and critical thinking) are becoming "core" across many industries.

In addition, many Australians, including those with high technology skill sets are demanding a different workplace of the future: minimal or no commuting, to live in their location-of-choice (positive for decentralisation opportunities), the ability to work from home or nearby social pods and flexible work hours of choice. Lifestyle choices are being opened up by the use of technology, and many Australians are embracing this to enhance work life balance.

Of huge concern however, is Australia's ability to deliver high-speed interconnectivity, not just to regional areas, but also within the major cities. Inadequate services, with below par speeds are still the norm even in State capitals. The NBN current roll out, and solution, is not seen as an adequate solution to provide the workplace of the future. This is a huge barrier to Australia being ready to move toward the future of work today, or in the foreseeable future. Australia's connectivity and throughput even in major cities (outside CBD) is poor compared to other developed economies and global competitors.

⁶ Mining, agriculture, education, health, retail, construction, transport, finance, professional services, manufacturing.

⁷ This notwithstanding, understanding why the demand for STEM skills is not strong in an economy increasing reliant on those skills is a paradox in itself.

⁸ "Shifting the Dial, op.cit. p. 87

Suggested Solution:

Independent (including international experts) review of the availability of (and solution to) competent levels of access to infrastructure, in all Australian cities and large regional towns, and the subsequent actioning of this advice.

Furthermore, Australians are likely to continue to enhance their careers with extensive overseas absences, due to lack of local support and infrastructure for IT innovation. This creates a significant loss of top talent for periods of a decade or more at the most productive time of their career.

Suggested Solution:

Create Technology Corridors with tax breaks for companies (and workers) to set up innovative technology companies, including ground breaking R&D and tertiary incubation companies. Ensure these tax k concessions, while generous enough to attract entrepreneurs and innovators, also require the investment to remain in Australia for ten (10) years minimum.

Improve Skills Formation

The Productivity Commission's recent review of Australia's record in skills formation is highly critical. The Commission rightly recognises that the current skills system has "fractures that put at risk its capacity to deal with the future labour market changes. There are deteriorating results among school students. The VET system is in a mess, and is struggling to deliver relevant competency-based qualifications sought by industry. Leading segments of the university sector are more focused on producing research than improving student outcomes through higher-quality teaching."⁹

Technology creation, adoption, use and diffusion are the long-run drivers of productivity. They require people with the right skills. For example, while jobs for truck drivers in the mining sector are declining, there are opportunities to remotely operate fleets of trucks using different skills. It is crucial to develop the appropriate policy settings for re-skilling when these disruptions occur in the market. These are new business models. They need people with skills and an understanding of the ICT systems in use. There is additional value in improving skills formation from foundational to advanced because it gives people better job security, income and job satisfaction.

Looking at the Commission's criticisms in more detail:

Schools

The most recent OECD PISA (Program for International Student Assessment) tests show absolute falls in average scientific, reading and mathematical ability, a growing share of lower performers and a diminishing share of high performers in all three domains. Australia has been sliding down in these rankings for the past fifteen years.¹⁰ This augurs ill for our future and does not sit well with the skills required for an advanced economy.

Industry leaders are trying to address this gap now. A new program called Pathways to Technology ("P-TECH") provides students with the skills and support required to successfully navigate the transition from school to work or university.

The P-TECH model is based on a partnership between education and STEM industry sectors to provide opportunities and support to students with:

- An industry mentor
- Hands on workplace experience
- Defined pathways to achieving a higher qualification
- Innovative approaches to learning
- Links to employment

⁹ See generally, "Shifting the Dial", chapter 3.

¹⁰ The OECD co-ordinator of the PISA tests said in late 2017 that Australia has a "tolerance of failure" while Asian economies focus on teaching excellence. A spokesman for the Federal Department of Education said that "Australia already has the world-leading Australian Early Development Census that the department runs every three years ... for all children in their first year of full-time school", which it believes is "a more valuable tool" than the OECD's new test. SMH, 28 September 2017.

- Learning opportunities using multiple teaching methods and tools (<https://federation.edu.au/ptech>)

Vocational Training

Despite its important but complex role, the VET sector has been beset with a raft of problems leading to a sector characterised by rapidly rising student debt, high student non-completion rates, poor labour market outcomes for some students, combined with unscrupulous and fraudulent behaviour on the part of some training providers. These outcomes reflect a range of problems in the VET sector. The Commission lists these problems as:

- Program failure of the VET FEE-HELP scheme due to poor oversight
- Endorsed training qualifications do not meet employer needs
- Training is too 'job-specific' rather than 'work-ready'
- Declining VET enrolments, increasing fees and competition with universities.

AIIA has developed a skills acquisition model based on work already undertaken in the UK (see below). The AIIA "Higher Apprenticeship" model provides an employment based, remunerated learning pathway as distinct from internships and work placed learning. The approach proposed by AIIA

- meets requirements of the industry (employers) because content is based on their needs;
- includes learning and skills development 'on the job' - as opposed to work experience post course learning;
- enables 'students' to be employees who are remunerated while learning in situ;
- enables employers to attract a small Government sponsored allowance in recognition for investing directly in skills development; and
- involves an active three-way strategic partnership with the student employee at the centre.

The partners are the government (federal and/or state/territory), the employer and the learning provider. This new model is targeted to commence in early 2019 – and will provide an agile model of skills development aligned to the technology driven changes of our future workforce.

Universities

As one of the main vehicles for skills formation, universities face funding constraints, poor student outcomes, poor matching of skills to employer needs and declining completion rates. In addition, an over-emphasis on research (mandated by regulation if an institution is to be called a "university"), compromises excellent teaching.¹¹

For those who do complete their degrees, post-graduation employment outcomes have been getting worse. Full-time employment rates for recent graduates have been declining, even as the Australian economy has continued to grow. Many of those who do not work full-time are not in that position by choice, with the underemployment ratio among graduates at 20.5 per cent in 2016, compared with about 9 per cent in 2008. Graduate starting salaries have also been growing slower than wages across the broader economy, declining from nearly 90 per cent of average weekly earnings in 1989 to about 75 per cent in 2015.

Government is the system designer, primary funder and supplier of formal education; these revelations from the Commission's research clearly highlight that governments must change what they do. AIIA supports the Commission's reform suggestions in this critical sector. They include:

- Improve the education outcomes of school students through ensuring that the best possible teaching methods are being used in the school system, supported by an educational evidence base and the employment of high-quality, well-trained teachers in the fields where they are needed;

¹¹ As part of the 2017 Budget, the Government announced it would examine the requirement for universities to conduct research as part of the review of the higher education Provider Category Standards. If, as a result, the higher education market was opened to teaching-only universities, rigorous quality standards and auditing would still be needed, in order to avoid repeating the mistakes of the VET sector

- Introduce a more graduated system of student assessment to signal to employers the level of proficiency in vocational education and training;
- Develop an objective accreditation system that signals the quality of skills, regardless of how they are acquired, to encourage the growth and acceptance of new models of skills formation that are faster, cheaper and more flexible;
- Improve student outcomes by providing affordable, high-quality university education with qualifications that are relevant to labour market needs.

AllIA has also developed clear analysis and recommendations in this critical area, as part of its research into the future workforce (see attached for further detail). To effectively participate in the workforce of the future, children today (and in the future) need to develop a more 'holistic' skills portfolio. This includes increased general STEM capabilities and, more importantly, creativity, reasoning and cognitive processing skills.

The most effective and efficient way to do this is by integrating them in the learning experience of other specialist and mainstream skills. This requires more creative approaches to curriculum development and delivery combined with new classroom learning and student engagement techniques, upgrading teacher skills and revised education outcomes measures.

At the tertiary level improved alignment between graduate skills and work readiness and the needs of employers is required. This is one of the greatest areas of opportunity for industry to contribute to future skill development. In collaboration with tertiary peers, AllIA has identified options such as:

- Reciprocal exchange programs for universities and industry;
- Embedding industry practices into engineering and ICT courses;
- Defining priority graduate attributes;
- Implementation of 'for credit' work-integrated learning of the national scale.

New skill acquisition models are also needed. For example, higher apprenticeship schemes aimed to meet the needs of advanced training outside the traditional university system and which provide an employment-based learning path (as outlined elsewhere in this response).

In relation to the crucial issue of qualifications' relevance to market needs, AllIA notes that the 2017 Employer Satisfaction Survey (ESS) shows an overall satisfaction drop indicated by employers of 4 per cent year on year over the 2016 ESS, for information technology graduates.¹² Employers indicated satisfaction with technical proficiency and foundational skills of ICT graduates, and this is in line with AllIA member feedback. However, the 'softer' skills needed to navigate future workplaces are not surfacing in current graduates from Australia's tertiary institutions.

Digital literacy – it's not a job displacement matter

Basic digital skills in the new economy are essential. Digital literacy is becoming a foundational skill in workplaces. With the digital economy changing the way work is carried out, digital skills are increasingly being integrated with the capabilities to process complex information, communicate with co-workers, solve problems, plan in advance and deal with ambiguity.

This is not a job displacement issue but the inevitable reality of operating in a modern, global and digital economy. It is as essential as numeracy and literacy is to everyone participating in a post-industrial revolution economy.

The Economic Impact of Basic Digital Skills and Inclusion Report in the UK in 2015 provides a definition of basic skills, set out below.¹³

¹² Both ESS documents can be found at <http://www.qilt.edu.au>

¹³ Tinder Foundation and GoON.UK, The economic impact of basic digital skills and inclusion in the UK (November 2015)

An individual with Basic Digital Skills is expected to have the capabilities to undertake the following tasks

- **Manage information:** having the skills to use a search engine to find information, search for deals on comparison websites, able to bookmark useful websites and services and store data on a device or in the cloud.
- **Communicate:** the individual is able to keep in touch with family and friends using emails, instant messaging, video calls and social media. This includes the ability for an individual to post comments on forums, connect with online communities and leave feedback e.g. on shopping websites and for service providers about purchases or experiences they've had.
- **Transact:** the ability to undertake financial transactions, such as completing a Universal Credit application, ordering shopping, booking travel, managing bank accounts, using digital government services and understanding how to buy and sell on the virtual marketplace.
- **Problem-solve:** The individual should be confident to solve problems using digital skills such as teaching themselves simple tasks using video lessons, using feedback from other internet users to solve a common problem and accessing support services e.g. 'live chat'.
- **Create:** having the skills to create basic digital content. For example, creating a social media post, drafting a text document, creating and sharing photo albums and providing feedback to online communities

Learn while they Earn

Lifelong learning is a useful channel to address skills re-formation. Australians use adult education and training more than the UK and the US across all age groups.¹⁴ But it is mostly enhancement of professional qualifications already gained at a tertiary level. Other groups having access to such opportunities is crucial to avoid severe structural adjustment costs and impacts of large shifts in the labour markets as workers try to transition to other roles. All citizens must be helped to benefit from lifelong learning, or we risk exacerbating inequality and creating an underclass that is not well educated.

Related to this is work-based learning, using fast track channels such as higher apprenticeships, trialled in the UK by PriceWaterhouse Coopers. As part of the **Trailblazer Apprenticeships** program, for example, PwC developed a 'Higher Apprenticeship' that recruits students directly from school. After three years, this leads to a professional qualification as either a Chartered Certified Accountant or Chartered Accountant. This approach is feasible because the skills learned as an accountant are vocational in orientation and there is an independent test of capability to acquire recognition as an ACCA or ACA. Moreover, as in traditional trade apprenticeships, the work that students undertake as part of their learning contributes to the output of the business, which allows the course to be offered without the level of fees charged at universities. The Australian Government has also been trialling the concept with PwC in Australia.¹⁵ And, as outlined above, is a model AIIA supports to address skill shortages and ongoing skill needs in the ICT sector.

Government and industry need to ensure that on-going learning structures and supporting systems are available to enable and empower workers to refresh their skills. This goes beyond mainstream curriculum development to ensuring more agile skill acquisition models aimed to support the re-skilling and up-skilling requirements of the future workforce. This is especially important for 'middle skill' workers impacted by automation who need to keep pace with developing skill demands.

Immigration

The former 457 visa program made an important contribution to productivity growth in Australia and in the case of the ICT sector, has been essential to addressing the genuine gap that currently exists

¹⁴ OECD Education at a glance, online statistics. <http://dx.doi.org/10.1787/eag-2017-en>

¹⁵ www.voced.edu.au/content/focus-higher-level-apprenticeships-pathways and Shifting the Dial.

between the domestic supply and demand of ICT and new digital technology skills. Individuals who hold 457 visas not only fill real and immediate needs within ICT organisations, but have proven to also make a significant and positive contribution to the Australian economy generating more revenue than cost.

The ICT sector operates in a business environment that is global and highly mobile – more so than any other industry. The skills required in the ICT industry undergo rapid change at the same time that strong growth in demand is expected. This increases pressure to find suitably qualified staff in emerging ICT specialisations that are critical to delivering major ICT initiatives and driving innovative solutions across the broad range of industry sectors. The skills shortage in the ICT sector is therefore, a real concern - both in the immediate and long-term. ICT is Australia's fastest growing sector - growing at some 4% pa compared to 2.1% pa for the workforce as a whole.

Our current visa programs are inadequate to support the attraction and retention of next generation ICT talent. The programs make it very difficult for young, experienced, well educated workers from UK, US, Canada and Europe with excellent English and badly needed skill sets to enter Australia and stay. Instead, the revised policy opens up too many short-term visas, where the long-term commitment is not to Australia and the high percentage of earnings are often repatriated. This does not assist the ICT industry except as a stop-gap measure.

Suggested Solution:

Create an immigration program aimed at specific countries where graduates are highly qualified from top Universities, speak English fluently, with degrees in required skills, and allow them a separate visa stream that leads to Permanent Residence after 2 years. This is not available under the current policy, and its introduction would attract a significant number of highly talented individuals to immediately ease the crisis in some technology sectors. These are not people who will require social services, translation services, or support. They could require an employment offer, or sufficient funds to start a business, to qualify.

Regulatory Barriers

Digitally driven businesses, especially those that own no assets, do not 'employ' workers in the traditional sense, and operate only online are continuously challenged by the existing regulatory framework of relatively inflexible awards, entitlements and practices applying to 'old-economy' business platforms. Examples such as Uber, Airbnb and others are well-known.

But more mainstream digital enterprises and even sectors such as manufacturing and construction that increasingly use automation where they can, face regulatory obstacles in areas such as contractual engagement versus collective bargaining under the Fair Work Act, long service leave entitlements and their mobility across different workplaces, and the characterisation of technology-based work. While our current industrial relations system underpins the quality and stability of work and safety conditions enjoyed by many, technology is changing the way we work and the work we do. The extent to which existing laws, regulations and policies are keeping pace with changing technology, work conditions and emerging workplace structures is unclear. It is very likely these will require adjustment.

Suggested Solution:

AllA suggests that if the Government establishes a Future Workplace Action Group, it must address existing regulations to modernise them as appropriate in line with anticipated changes as well as recommendations made in 2015/16 in a Review by the Productivity Commission. This should be a constructive narrative, rather than one that creates fear and anxiety or undermines the confidence of the workforce generally.

¹⁶ Australia's Workplace Relations Framework (released 21 December 2015) file:///localhost/(https://www.pc.gov.au/inquiries/completed/workplace-relations - report).

Conclusion

In examining the future of work we can profitably look back at how and to what extent the Australian economy adapted to a range of fundamental changes. History has shown that despite our worse fears, technology and automation surprises us with new opportunities for productivity, growth and prosperity. Opportunities for new work roles are not finite; people will always want to work, and find ways to meet that need.

Anticipating these new opportunities, and the jobs that may emerge and the skills needed, must now form the basis for the urgent actions Government, unions, the education sector and business should address.

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