THE FUTURE OF WORK
SETTING KIDS UP FOR SUCCESS

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SETTING KIDS UP FOR SUCCESS IN THE FUTURE JOB MARKET

The future of work offers a heady mixture of excitement and promise as new ways of working become embedded in the economy, along with the worry of how and if each of us can make our way in a rapidly changing work landscape.

The messages are many – “hundreds of jobs to go”, “automation making workers redundant”, “most of 2030’s jobs aren’t even thought of yet”. Making sense of these competing messages is difficult, and nbn has commissioned this report as a way of cutting through the complexity, and clarifying what to do to give our kids the best foundation for success in the future labour market.

This report identifies three key points needed for our kids to be successful in the future job market:

• The in-demand jobs will be mixing high tech, personal contact (‘touch’) and care activities;
• Kids will need a mix of both nerdy digital and soft personal skills for success in the 2030 job market; and
• Future jobs will be flexible, entrepreneurial and dynamic.

Are your kids ready?

Our kids will have jobs we only dream about. They may be called the same thing; occupational therapist, carpenter or even manager, but they will be doing activities that are only just being thought of, like remote medical intervention or using 3D house building printers. A mix of global trends are coming together to radically re-shape the world of work. Trends like global urbanisation, ageing and expanding middle classes, ever-increasing global trade in goods and services, and of course the rapid acceleration of innovation in digital technologies. These trends are delivering new jobs, and new activities within jobs.

To give our kids the best chance of success in the future job market, we need to give them the best chance to develop the technical and personal skills they need to succeed.

HIGH DEMAND JOBS IN 2030

The future job market places high demand on jobs with a mixture of high tech, touch, and care activities.

High tech jobs
Know-how and specialists, from designing the next drone to teaching, e.g. electrical engineer, primary school teacher.

High touch jobs
Do and deliver, from house renovations to creatively pursing a passion, e.g. plumbers, personal assistant, photographer.

High care jobs
Personal and emotionally engaged, from looking after young people to taking care of the household, e.g. childcare worker, fitness instructor.
What skills do our kids need?

- Hard specialist knowledge skills like Science, Technology, Engineering and Maths, plus Entrepreneurship, Art and Design – STEAMED.
- Soft people skills like critical thinking, communication, collaboration, connectivity, creativity, and culture.

Having a mix of these skills is a good foundation, but our kids will also need to be able to work more flexibly, moving from task to task, job to job and place to place in ways previous generations have not had to deal with. It will be commonplace to have a portfolio of part-time work for clients and customers anywhere in the world. For this we need to be investing now in high capacity digital connections, innovation and the right type of learning environment – so future jobs can be anywhere in Australia, not just capital cities.

nbn is providing the infrastructure, but parents, schools and families need to play a big part in putting the infrastructure to work. Parents, schools and communities need to engage with young people in creating pathways into future work, connecting them with opportunities and the tools they need to move ahead.

These are the areas we need to be investing in and supporting our kids with so their quest for a rich and fulfilling future of work can be achieved.

Why and where to invest and support is explored in this report. How to dive in and provide the right investment and support is set out in the companion case studies of regions doing inspiring things in this space, and the online toolkit lets you access the tools you need to build capability for the future.

What are you waiting for? Jump online and get your kids ready for future success at www.thefutureofwork.net.au
DEVELOPING THE FUTURE JOB MARKET

Children in preschool this year will be entering the workforce in 2030, and we need to make sure they have the best chance at picking up the technical skills and personal attributes that will help them succeed.

Big trends are reshaping the 2030 job market. The trends are global, diverse, feeding off each other, and not yet near their peaks. This combination of forces is reshaping the world of work, and will deliver a job market in 2030 that is very different from what we see now.

The trends range from Africa-rising, burgeoning Asian individualism, consumerism, digitisation, environmental challenges, globalisation, personalisation of products, sustainability, and changes in the world of work. This alphabetical snapshot tells us about the breadth of change pushing us along, but doesn’t help us understand their impact on future jobs (Figure 1).

![Figure 1. The impact of mega trends in creating the future job market](image)

It is the impact that the mix of these trends will have, the outcomes of the interactions between them, which makes this round of changes in the world of work different from the other rounds we have seen in the 20th century. How will these trends affect the future job market? This report explores four dimensions.

**Which jobs will grow and fade away?**

Fading jobs will be those replaced by automation. So far these have been low skill labour intensive jobs, but technological change will mean that many medium and some high skill jobs and tasks will be systematised and automated. New jobs are being created around technical specialisations while high demand jobs are focused around high touch, education and care occupations and activities.

**What skills are needed for the future job market?**

Increased personalisation in a digital world means that future jobs will need more high technology digital skills, as well as entrepreneurial training to make the most of opportunities. In addition to these technical skills, jobs of the future will require soft skills in communication, collaboration, creativity and problem solving.

**How are jobs changing?**

Ageing populations and consumer driven demand mean that more women will be working, more people will be running their own businesses, and more people will be contracting independently, working part time and working later in life. Flexibility will be a hallmark of work in the future.
Where will the jobs be?

Growing digitisation means that new jobs do not have to be housed in big city office blocks, they can occur where people want to live and work. This flexibility of location means future jobs can be anywhere – but is Australia ready to house future jobs across its wide brown land?

This report responds to growing uncertainty around the future of jobs by synthesising known data and reports and adding new data to address four questions: which jobs are in the future job market?; what skills are needed to be ready for future jobs?; how future jobs will be different to our current jobs?; and finally where could the future jobs be?
WHICH JOBS ARE IN THE FUTURE JOB MARKET?

In 2030 there will be three types of jobs:

• Future jobs, new and focused on digital specialisation and technical skills;
• Changing jobs, similar to current jobs but with new activities focused on high personal contact (‘high touch’), high levels of care and high levels of tech; and
• Fading jobs, which will be replaced by automation in time.

But which ones are we training our children for – jobs for now, or jobs for the future?

There is controversy around how different the future job market will look.

There are predictions that state new jobs in Australia will outnumber job losses at a rate of 10 to 1.ii Or that 44 per cent of current Australian jobs are at high risk of being affected by technology developments, similar to US predictions (Figure 2).iii

Bank tellers between 1995 and 2005 decreased by approximately 50,000. This was largely due to the introduction of automated teller machines (ATMs).

During this same period, the number of finance professionals increased by roughly the same amount.

There are predictions that state new jobs in Australia will outnumber job losses at a rate of 10 to 1.ii Or that 44 per cent of current Australian jobs are at high risk of being affected by technology developments, similar to US predictions (Figure 2).iii

Job loss Job gain

Figure 2. Scaling the predicted job losses and gains from trends in Australia

What all studies agree on, is that the future job market will have a decrease in the number of lower skilled occupations, and an increase in comparatively higher skilled and higher paid occupations.iv

As automation takes over, some occupations will evolve as workers take on new tasks.v Future job projections show an increase in almost all occupations (Figure 3), with professionals showing greatest growth (39 per cent), followed by Community and Personal Service workers (23 per cent).vi
Figure 3. Projected employment growth from 2015 to 2020, occupation share as proportion of new jobs. Source: Australian Jobs 2016 (DEEWR)

Health care professionals, carers and aides, and business, human resources and marketing professionals are projected to see some of the largest employment gains in Australia in the short term – through to 2021. Each of these jobs involves complex situations and requires creative problem solving skills. They also require high levels of contact with clients.

Figure 4: Jobs that are predicted to increase. Source: Super Connected Jobs 2015 (nbn)

The high demand jobs of the future are all about occupations that ‘connect’. nbn’s Super Connected Jobs research found that the highest demand future jobs share a high level of personal interaction: creatives, doers and technocrats, care givers and high skilled specialist professions (Figure 4).
These jobs are shaped by our changing needs as consumers. But there are other jobs emerging being shaped by technology – these are the new jobs of the future – the jobs that don’t exist yet.

New jobs may well include robot polishers, but are more likely to focus on attributes of specialised digital skills development such as big data analytics, complex decision support and remote controlled vehicle operators. Specialised personal experiences such as customer experience experts, personalised preventative health helpers, and online chaperones may also emerge.

Future jobs and changing jobs – lots of opportunities, but do our kids have the right skills to succeed in this new job market?

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**CASE STUDY | WHITEHACK**

Whitehack is an IT security consultancy of self-described ‘ethical hackers’. Using the same approaches and skills as a hacker, Adrian Wood and his team identify potential weaknesses in a company’s network to maximise that company’s security.

Whitehack is a company that many would expect to need a Sydney or Melbourne office, but being based in Armidale, NSW doesn’t deter the success of the business that services clients in Australia and internationally.

As an ethical hacker and entrepreneur, Adrian is combining high tech with ‘soft’ personal skills. He is arguably already working a Future Job.
WHAT SKILLS ARE NEEDED?

Two core skill types are needed for the future job market, hard (specialist knowledge) and soft (people) skills. Young people are required to know how to program and interface with technology, but they also need to know how to communicate, collaborate and think critically for success.

The future of work is not a question of how do we develop skills to race against technology, but instead, what mix of skills provides the greatest opportunity to race ahead with technology.

The Foundation for Young Australians (FYA) estimates that within 2-5 years, at least 90 per cent of the workforce will need a basic level of digital literacy – capable of using technology purposefully and confidently to communicate, find information and purchase goods and services. This will not only be crucial for entering the workforce but also interacting effectively in society. They also estimate that 1 in 2 Australian will need higher tech skills such as programming and software development.

As well as digital skills, more intangible attributes - entrepreneurialism, creativity and interpersonal skills - are becoming increasingly important to businesses and organisations. Many are calling for the integration of enterprise and entrepreneurialism skills into schools and universities. This could expand the investment in Science Technology Engineering and Maths (STEM) to encompass entrepreneurship, art and design – expanding STEM to STEAMED. This reveals the growing value of ‘soft’ skills, in addition to technical proficiency.

Soft skills – those learned through social and environmental interaction – are the people skills we usually take for granted (Figure 5). Skills like the six C’s of critical thinking, communication, collaboration, connectivity, creativity, and culture, are estimated to underpin nearly £88bn of the UK economy. Yet while these skills are widely identified as ‘critical components of 21st century skill’ frameworks, they are not a core focus in today’s classroom.
Figure 5. Soft Skills needed for the 21st century workforce – the six C’s
Source: https://infogr.am/the-6-cs-of-education-for-the-21st-century

The lowest soft skill and digital skill jobs are fading – ticket collectors, data entry and petrol pump attendants are routine and repetitive jobs which have become redundant due to automation. Jobs with the strongest future are those with a combination of high levels of at least one of these skill sets – from big data analysts to personal care givers (Figure 6). There are a range of jobs that we haven’t even thought of yet – these might include Robot Polishers, Artificial Intelligence (AI) Interface Managers and Commercial Ethicists, but who knows! These jobs are so new we don’t even know what they will look like.

Figure 6. Skills mix for the future job market
It’s the mix of skills that matter – a good balance across hard and soft skills will give younger generations the greatest advantage as they enter the workforce. 

Parents and educators have complimentary roles in the development of the right dynamic of skills, as school is not the exclusive domain of learning. In general, children of parents who are engaged and knowledgeable about their child’s education achieve higher scores, engage in more challenging academic programs and have broader behaviour and social skills. 

Young Australians need the chance to make the most of their time online, through quality educational tools which foster a variety of social and emotional skills.

In partnership with nbn, the Regional Australia Institute has developed an online toolkit for parents and children to explore digital literacy and social competencies. This toolkit gives young Australians, wherever they live, the exposure they need to digital technology – inspiring new career paths and equipping them to be confident of their place in the future workforce.

‘For any of us that have the responsibility of children, one of the key questions you think about is what’s the thing that you can do to encourage them and develop to make them successful going forward?’

David Whiteing CIO Commonwealth Bank
HOW JOBS WILL CHANGE

Future jobs will be entrepreneurial, flexible at balancing home and work, and with more diversity in the workplace. This dynamic job environment requires our kids to shape how they work to deal with competing priorities. It also strengthens the need for jobs to be connected to people, consumers, markets and enabling digital infrastructure.

The future job market is delivering opportunity and change. It will fundamentally change the way we work. This means that the ‘office’ of the future will be different, which leads us to the question; what do we know about how future jobs will work?

Already we have seen changing patterns of work. Workers are increasingly pursuing flexibility in their choices of employment whether it be choosing contract work over a full-time position, or being a ‘digital worker’ with the ability to choose when and where you work around the world.xix

Australians are leading the way in how future jobs will work. Australian entrepreneur Matt Barrie founded Freelancer in 2009, as a tool to connect people with skills and people with needs for skills all around the world – no matter where they sit.xx

In May 2013, 5.6 million people - half of Australia’s overall workforce, used the internet to work away from the office.xx1

In 2030 it is predicted that there will be an increase in part-time work (30 per cent more), a growth of women in the workforce (55 per cent more) and doubling of older workers (195 per cent more of the over 65s).xx2

When it comes time for our kids to join the workforce, they will be just as likely to be working with their mother online, as they will be working for their grandfather’s family business.

If the jobs of the future need flexibility and work-life balance – how does Australia stack up?

CASE STUDY | FREELANCER.COM

Changing patterns of work have led to the increase in the number of organisations like Freelancer.com.

Freelancer.com was a small business in 2009 when it was bought by Australian technology entrepreneur Matt Barrie. Barrie has grown Freelancer.com to be the world’s largest freelancing marketplace connecting over 19 million professionals from around the globe – while still headquartered in Sydney.

Freelancing is becoming an increasingly attractive option for individuals and businesses alike.

Small to medium enterprises in particular are enjoying the benefits of being able to access skilled workers without the expense of bringing in a full-time staff member. The Freelancers themselves are increasingly able to choose who they want to work with and under what conditions. For many it is also offering the increased flexibility they want to better balance work and home.
WHERE WILL FUTURE JOBS BE IN AUSTRALIA?

Across Australia, access to the future job market will depend on both technological readiness to connect and innovative employers delivering new solutions and activities. If you are getting your kids ready for the future job market, you need to consider if that job market is at home or elsewhere.

As we know, the high tech jobs are usually associated with cities, and indeed Australia’s capital cities have shown strong growth in these jobs in recent years. This is expected to continue, but regional Australia has the potential to offer a wealth of opportunities too.

The future job market is everywhere – and anywhere. Future jobs are not just tied to a big city office. Our kids will want to balance lifestyle, affordable living, environment and access to friends and family – with their work location. This can be done in big cities, regional cities and regional areas – anywhere!

How ready is Australia to deliver the 2030 job market across all four corners of the country?

First, areas need to be technologically ready and well connected to achieve flexible work arrangements. The RAI’s online tool [In]Sight: Australia’s Regional Competitiveness Index, measures tech readiness, because if workers can’t connect to producers, consumers or colleagues – they are not part of the job market.

Data shows, the more rural and remote, the poorer the outcomes for tech readiness (Figure 7). A true tyranny of distance – as the more remote, the greater need for digital connectivity! Regional cities on average are more tech ready than regional and rural areas like Heartland Regions (e.g. Wheat Belt region), Connected Lifestyle Regions (e.g. Queenscliff, Vic) or Industry and Service Hubs (e.g. Mt Isa, Qld).

nbn and Black Spot Mobile coverage programs have made a big change to access – but there is more to do getting all of regional Australia covered for strong, reliable internet use.
There is a significant gap between access to and use of technology in regional Australia and the capital cities.

Recent investment in telecommunications infrastructure, including the nbn and the Mobile Black Spot Programme, is working to improve infrastructure access in regional areas.

However, areas also need to have innovative and entrepreneurial skills to access new job markets. Measured by the RAI’s online tool [In]Sight: Australia’s Regional Competitiveness Index, regional areas do better for innovative measures like new business start-ups, but capital cities are still the hub of trademarks, research and development expenditure - a known traditional measure of entrepreneurial prowess (Figure 8).

Figure 7. Technology access and jobs in Metropolitan and Non-Metropolitan areas
Source: [In]Sight Innovation (RAI)
Innovative activity is typically concentrated in high population areas.

Regional Cities and Connected Lifestyle areas have the highest innovation index scores.

The future of work will rely on local areas building their innovative capacity and digital readiness to be places that house future jobs. Is your region ready?

To assist, nbn and RAI have prepared a series of regional case studies showing how people in regions with very different jobs and skills are creatively using digital technologies to give their kids a solid foundation for success in the world of future work.

Figure 8. Innovation as measured by number of trademarks and new business start-up for Metropolitan and Non-Metropolitan areas (Average number of trademarks – is trademarks per 10,000 population -2005-14, new business start-up is % of total businesses per annum - 2010-2014)
Source: [In]Sight Innovation (RAI)
CASE STUDY | THERAPY CONNECT

Simone Dudley and Sue Cameron are the Directors of Therapy Connect, an online speech and occupational therapy service.

Living in NSW and VIC small towns, Simone and Sue understood the difficulties families in regional Australia faced accessing quality health services. Therapy Connect uses tele-practice to help overcome some of these obstacles.

In addition to their skills as speech and occupational therapists, Simone and Sue have to draw strongly on their tech skills and their personal skills. These tech skills were largely self-taught or acquired ‘on the job’ and range from website and social media management to trouble shooting videoconferencing technology. Sue had previously worked in hospitals with some of the technology before but both women have had to learn a lot setting up Therapy Connect.

Simone and Sue agreed that working in tele-practice also improved their ‘soft’ personal skills. Creative thinking and developing different strategies are core parts of their skill sets. Digital consultations have encouraged Sue and Simone to work with the family unit not just the child who is their client. They are often connecting with two or three people, not just one. They have also become more resourceful and flexible, learning to work with each clients’ unique home environment.

The success Therapy Connect has achieved despite being quite a new business has encouraged Simone and Sue to very actively promote tele-practice. They have presented at a number of conferences including ‘Caring for Country Kids’. They are also working with the University of Sydney to conduct further research into delivering therapy to rural families via tele-practice, as well as providing clinical supervision to indigenous allied health assistants completing placement in remote communities.
SETTING KIDS UP FOR SUCCESS WITH DIGITAL TECHNOLOGY

Australian parents have seen huge changes in the labour market and the workplace in the last 10 to 20 years. All the indications are that the labour market is set for even bigger changes in the next 10 to 20 years.

It is hard to imagine the job market in 2030. Not only will the jobs available be different, so will the activities in the jobs, the skills needed, how the jobs function within organisations, the locations of jobs, and the necessary infrastructure required.

To ensure the success of today’s pre-schoolers in the 2030 job market, we need to invest in our kids now. Do they have the right mix of hard and soft skills to help them be both digitally literate and able to communicate with people?

Nerds and geeks have had a good run in the last decade, masking the enormous growth of ‘people to people’ jobs. Both attributes will be highly valued in the future labour market.

This report also highlights the need for regions to be ready for the future job market by providing; good education in hard and soft skills, strong infrastructure connection, fostering entrepreneurial and innovation production as well as being good places to work and live.

The challenge for schools, parents and communities is to now ask:

• Are we ready for future jobs?
• Do we have digital tools and technologies that can help our kids develop hard and soft skills? and
• Can we find ways to embrace digital capabilities within a creative and people-focused environment?

We need to be investing in resources which develop greater skills and capabilities in high touch, high care and high tech activities. As parents and friends of today’s children, it is up to us to make these investments now to ensure kids are set up for future job success.

To help you we have investigated six regional areas around Australia that are asking the same questions. Find out how they are gearing up to help their kids be ready for the future job market.

Of course, you may already know what skills your kids need to develop, or want to jump right in and give them a try! So get started with a toolkit we’ve developed that covers all the hard skills like design and tech building and soft skills like creativity and collaboration. This is the perfect place as parents, kids and friends to start the journey towards being ready for the future of work.

This report, in conjunction with its associated case studies and online toolkit are all designed to help you on the journey. What are you waiting for? Jump online, get ready for the future job market and get your kids ready for future success at www.thefutureofwork.net.au.
END NOTES


Di Gregorio, J. (2013) “Home is Where the Work is” in Australian Communications and Media Authority online at www.acma.gov.au/theACMA/engage-blogs/engage-blogs/Research-snapshots/Home-is-where-the-work-is

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