
A NEW FORM OF WORKFORCE PRODUCTIVITY

A speech by Craig Robertson

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Introduction

Thank you for the opportunity to speak to you today and thank you Tanya for the invitation.

Today we are meeting on the lands of the Ngunnawal People. In the spirit of reconciliation, I acknowledge the traditional custodians and their connections to land, sea and community. I pay my respect to their elders past and present and extend that respect to all Aboriginal and Torres strait Islander peoples here today.

I also acknowledge the presence of the Hon Steven Joyce the author of Strengthening Skills, the landmark report which is guiding much of the effort of the Commonwealth in skills reform.

Lisa Paul, former Commonwealth secretary for education and training, among other responsibilities is also in the audience. Lisa has a great passion for education and it's a delight to have her in the audience.

The reform includes new entities called skills organisations. One operates under the auspices of the Minerals Council and there is one for health services and another for digital skills. I acknowledge leaders from those organisations in the room today as well.

I thank Tanya for being brave enough to invite me to speak as I may take the chance to get some messages to you Steven and to the SOs.

So, let's hang in there.

The title for my speech today is – A new form of workforce productivity.

In my younger days, many moons ago, I used to run youth camps for the Baptist Church in Western Australia.

For one of those camps for young teenagers I wanted to hold a 50s dance night, complete with a dance and dance instructors.

You need to understand that in the context of the Baptist church in those days, consorting between young lovers was strictly enforced by the no touching and 12 inch distance rule.

So, the thought of a church sanctioned dance for young hormonal teenagers would not have been well received.

Luckily, the campsite was some distance from Perth, so I could get away with it, except that the caretakers of the campsite were stalwarts of the Baptist tradition.

Thus started an elaborate ploy to have them off site so I could smuggle in some dance instructors and hold the dance.

I tell the story for two reasons.

Firstly, there needs to be **pioneers of change**. And secondly, change involves **challenging established norms**.

And I want to follow those themes in respect of the workforce challenges we see for mining, and more broadly across the economy.

I'm pleased to report that the dancers were a hit, a great time was had by all, and there were no pregnancies.

Pioneering

As we heard last night in the Great Hall of our national parliament, mining and resources has been a pioneering industry.

As far back as the 1850s following the discovery of Gold in Victoria, the regional population grew tenfold and at that time Melbourne was the wealthiest city in the world.

Victoria still holds the record for the largest gold nugget and the richest shallow alluvial goldfield in the world.

We move forward to the early years of this century and mining was again booming, in unprecedented ways and at the opposite part of Australia.

The wealth of Australians grew and thanks to the high Australian dollar that resulted, our purchasing power increased. We could import luxury goods and take overseas trips on the cheap.

Even today, the price of our high-quality resources has the Commonwealth's Budget in far better shape than it might have been.

But there are other longer-term legacies.

The massive construction effort such as ports and roads has led to lower operational costs, so the industry has been able to weather slumps in world prices.

But I am not telling you anything new.

I contend that a new legacy can be built for Australia through the reforms your industry is championing for the workforce and skilling.

At the risk of preaching to the converted we have seen how the mining industry has led the way in occupational health and safety work practices.

But often unsung is the effort on employing Aboriginal and Torres Strait Islanders. Even for me here in Canberra during the boom, it was clear to see the leadership of the major miners in this area and to see that commitment flow through the supply chain.

There is power in the sector acting together.

The same can happen when it comes to workforce, particularly through the Mining Skills Organisation Pilot.

I mentioned that Steven Joyce is in the audience today. I must confess when I first heard the review of vocational education was to be led by a Joyce I was worried what Barnaby would come up with.

Luckily, we have had the wisdom, albeit from across the ditch, from a person who has had experience as a minister for vocational education and training.

There are things Steven has recommended that I may not agree with, however, one of the key organising principles I took from his report is the need to line up incentives when it comes to skilling.

I hope you don't mind me verballing you Steven but I do recall you saying

that in your consultations for the review industry in all shapes and sizes were dissatisfied with the training system.

It was the recommendation around skills organisations which is a direct response to this feedback and an expression of lining up incentives.

Skill Organisations were proposed as a new form of alignment. Industry genuinely with a chance to design vocational education for it's needs.

Thus, three pilot skills organisations were established, one of which is for mining.

Again, "quoting" Steven

The acid now is on industry to get it right otherwise it can only complain about itself!

Upon hearing about these pilots I was somewhat sceptical.

I consider myself a measured person but in a meeting with government officials and stakeholders when the skill organisations were being explained I complained bitterly that they were unnecessary and yet another layer in an already overcrowded system. Then I promptly walked out the door – admittedly to catch a plane.

Since that time, I have come to appreciate the model. Let me explain why.

Just as mining has been at the forefront of health and safety, for example, the mining and METS sector has been at the forefront of digitalization and automation in production processes.

And this has flow on to the skills you need across your industry.

This is where the Skills Organisation is well set up to be the pioneer. It involves, however, challenging established norms, especially within the education and training sectors.

Challenging Established Norms

I'm wanting to avoid getting into the weeds here, so I want to explain the sector's workforce challenge, to the extent I understand it.

Firstly, we know that automation and digitisation is the right capital investment. It reduces production costs, and importantly reduces risk of injury in mining operations and helps open up otherwise unprofitable sites.

Secondly, this changes the profile of your workforce. The Minerals Council on your behalf mapped out this impact in a report it commissioned some years ago.

While there is still the classic pyramid of job roles, it's a narrower and taller pyramid.

There is less need for process operators, still a need for tradespeople and technicians but more roles for data analysts, systems designers and systems operators further up the pyramid.

Thirdly, the combination of the taller pyramid and remote operations changes the organisation of workforces.

In traditional workforce structures we have had teams and sub-teams working within hierarchy and with strict process and demarcation rules.

There is a large overhead in managing the process and the teams. Automation can change that hierarchy and some work practices can change virtually overnight.

This change in work organisation is not restricted to mining.

The national disability insurance scheme is an example.

Previously disability care, where it was available, was dispensed through institutionally based service organisations where disability workers operated under supervision and within a hierarchy.

Now, with the notion of customer driven care, that care is no longer exercised in the institutional setting but in a setting determined by the client, such as the home. This means the assurances of quality and specialisations offered through institutional settings is no longer assured.

This leads to the **fourth point**.

New forms of quality and assurances are needed to replace that offered by hierarchy and institution.

That **rests in the individual**.

In a typical work breakdown structure it is easy to build in redundancies or isolate risk points – if one team mucks up, hopefully the damage can be contained.

Automation, however, tends to be operations-wide and one mistake can have far larger consequences.

We are seeing this now in meat processing where a ransomware attack, believed to have been carried out by Russians, has halted work at 47 JBS abattoir sites across Australia.

This means that while poor worker or poor work practice could be isolated within teams and corrected for, this is not feasible in a connected automatic environment.

While these sorts of errors are less likely in an automated world when there are mistakes the consequences can be large.

And you understand this in the context of the capital you have at stake in your operations.

Fifthly, workers need to be retained in the industry. The growing sophistication of the operations enabled by technology means you can little afford worker turnover.

It also means that people with operational experience bring important attributes and understanding to automated operations.

It makes sense to retain them, even though their traditional job has changed or been abolished.

They may no longer be on the tools so to speak but are now behind a console of some form.

What might be second nature to them on the tools now becomes virtual and there's a new form of problem solving – at the console and solving algorithms.

That's a new capability they require.

Lastly, not only has the shape of the pyramid changed but it also needs to flex depending upon production demand.

We heard last night about the exciting opportunities for the sector in rare earths, for example, but there needs to be workers to open up and operate those sites.

It's important that you can bring in new workers, with minimum onboarding costs and this means transitioning them from other sectors.

The good news is that once that peak is over they should be armed with skills that can help them transition to other industries. Defence Industries is a classic candidate.

The new workforce development model

These six trends that I observe for your sector are facing many industries in Australia – its just that mining is already there.

All up, workforces need new capabilities.

This is where established norms need to be challenged.

Our current model for vocational education is **captured by training for process**.

It can be accused of being analogue in a digital world so to speak.

Analysis of the requirements within typical VET qualifications and forced on vocational educators means that:

- vocational education output is far too often focuses on the process of work, not the understanding of the underpinning processes or the drivers of the industry; and as a result
- the education degenerates into training and assessing endless processes.

You may say that I exaggerate.

Any quick analysis of VET qualification requirements easily shows that industry, procedural and scientific knowledge is a secondary consideration.

Further analysis shows that for one qualification that at least 700 functional elements need to be demonstrated and assessed in order for that student to be considered competent.

I'm not sure the last time that modern work practices insisted on such a rote approach, yet this is the outcome in vocational education.

And we know that automation is specifically designed and well suited to take over these rote processes.

I'm pleased to say though that the work of the Mining Skills Organisation as representatives of your industry workforce needs are exploring new ways for the tertiary education sector to respond to the new workforce needs.

They are exploring new approaches to skilling workers for the new world you are facing.

At the core, it is looking at the notion of transversal and transferable skills.

By **transversal** we mean that knowledge and understanding of the industry in which the person works.

The Foundations of Modern Mining Professional Certificate rolled out by Curtin University and University of Queensland is a case in point.

An abridged form of this introduction to mining is being examined for roll out to all prospective workers in the sector, including those who would typically be prepared in the VET sector.

If it is done right, people are introduced to the sector, and can embark on a training and education journey complete with the context for why they are learning.

By **transferable** we mean the knowledge and skills that can be applied in different circumstances across the work organisation and across industries.

We have in the audience today, Adam Boyton, the National Skills Commissioner.

His ground-breaking work on the Australian Skills Classification can guide and ground this work.

The classification uses big data analytics and looks at common skills in jobs. While it is early days, it will help the tertiary system be more efficient and focus on the core.

If we can focus on the core knowledge and skills required of graduates they can take on a broader range of roles within and across industries.

This does not dispose of technical competency but broadens its definition and application.

By way of example. For me, I would hate for my work options to be limited to that of a hack lobbyist. I would hope that the innate skills and knowledge I bring offer opportunities for me in other fields.

This is the return all students want from tertiary education – options for work.

If there is a new world of workforce design and capability forced by automation and the digital revolution, then the education and training system needs to follow suite.

This is the strength of the skills organisation model. The bridge between industry and education.

On behalf of TAFEs we want to be your partners on this journey.

There is already great partnerships between our TAFEs in WA and Rio Tinto and TAFE Queensland and BHP and with Central Queensland University for school orientation programs.

But here's my chance to preach to brother Joyce in the audience.

All too often we think a market can establish capabilities to respond to new demand. That's true, but it also needs capital and more often than not government backing of some form.

This is the potential and promise of TAFE. As Government backed entities they have the scale and depth to stand up new capabilities as the demand of industry change.

And their mission from their government is to serve industry in all its form in their state.

TAFE is not and will not be the answer for all skills needs, but the thing we do need to be assured as a country is that we have a capability off which we can venture down new paths of innovation.

This is where the network of TAFEs are keen to work alongside the mining industry and through the Mining Skills Organisation Pilot.

Conclusion

I urge you as an industry sector which has pioneered in so many ways to pioneer a new approach to vocational and higher education that matches demand for new forms of workforce productivity.

If we get this right the social dividend for Australia is enormous and is reason alone that TAFEs want to be on that journey with you and be the partner that Joyce envisioned when he proposed skills organisations.

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