Transcript

Department of Employment

The Future of Work Health and Safety

**Presented by:**

**David Caple**

Leading Health and Safety Expert, **MC**

**Panellists:**

Renee Leon PSM
Secretary of the Australian Government Department of Employment

Dr Stefan Hajkowicz
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[*Opening visual of slide with text saying ‘Australian Government, Department of Employment with Crest (logo)’, ‘The future of work health and safety’, ‘Panellists Renee Leon PSM, Dr Stefan Hajkowicz and David Caple’, ‘seminars.swa.gov.au’, ‘#virtualWHS’, ‘Future NetWork’, ‘Safe work Australia, Virtual Seminar Series’*]

[The visuals during this webinar are of the presenter and panellists seated on stage, speaking with reference to the content of a PowerPoint presentation being played on a large background screen]

§ (Music Playing) §

**Rose Verspaandonk:**

Good morning. Welcome to everyone attending here today and everyone watching via our webcast. I’d like to acknowledge the traditional owners and custodians of the land on which we meet today, and pay my respects to their elders past and present and to any indigenous people among us today.

I’d also like to welcome Minister Tan and his colleagues from the Singapore Government, and we’re honoured to have Greg Vines, Deputy Director-General of the International Labour Organisation with us today.

This is a combined event between the Department of Employment’s Future Network and Safe Work Australia’s Virtual Seminar Series. The changing nature of our jobs is going to have a big impact on how we manage work health and safety, and this will be the focus of the panel today. This will also be the penultimate Future Network event. We’ve covered a lot of ground from driverless cars to gamification and the gig economy. I’d like to thank everyone who’s attended the Future Network sessions this year.

For the final event the Australian Public Service Commission will be holding a forum on December 8 on the future of work in the Australian Public Service. I highly recommend that everyone gets involved. Please note that that event won’t be in this theatre as the others have been, but it will be in Deloittes’ offices near the airport. The workshop has a maximum of 60 people, so I suggest you get in quickly.

I’ll just introduce our panel today. Mr David Caple will facilitate the discussion, bringing his extensive industry experience in the work health and safety space. Since 2000 David has been involved in the development of the work health safety strategy for large Government departments and private companies. He’s hosted the Safe Work Australia online seminar series on emerging work health safety issues since 2014.

Secretary Renee Leon has led the Department of Employment since 2013 and instigated the Department’s Future of Work Project, which aims to help all Australians to thrive in the new world of work.

Finally we have Dr Stefan Hajkowicz. Stefan leads the Data61 insight team at CSIRO which produced the Tomorrow’s Digitally Enabled Workforce report.

I’ll now hand over to Mr David Caple to lead the discussion.

David Caple:

Thank you Rose. Welcome to our audience here today, and particular welcome to Minister Tan and distinguished guests from the Singapore Government. Welcome to those that are viewing online through the Department of Employment desktop TV, and also those through the Safe Work Australia website. If you’d like to join in this discussion and Tweet in your comments and questions, just use the hashtag virtualWHS and we’ll try to address those questions as we go as the panel.

So I’d like to just set the scene for this particular discussion, which is about the future of work and the implications to work health and safety, to maybe ask Stefan if you’d like to just give a bit of an overview of that research that Rose was alluding to with your meta-analysis on the future of work in Australia. What are some of the key findings that might give us a vision for the next 20 years?

**Dr Stefan Hajkowicz:**

Sure. So look, we had a fantastic time working with Renee and the team at the Department of Employment, also engaging with ANZ Bank and Australian Computer Society and Boston Consulting Group, all got together to have a look at how Australia’s labour market would change over the coming ten to 20 years, so a long range view. We employed techniques of scenario planning and megatrends analysis. So the megatrend is a gradual shift when multiple trends combine and take us towards a different world from the one we know today, and it builds gradually but eventually has expression which really matters.

The scenario is the story, about what the future might look like, and it’s to assist long range planning so that we can make policy and strategy decisions today. I think the report is relevant from everything from people’s individual careers – I’ve had a sit down with the local prep school where my kids go to school to talk it through with the teachers – right through to at a high level in Canberra we’ve been discussing the results of the report.

It’s based on the reality that we’re going to see massive transition in Australia’s labour market ahead. As we worked on this report with the Department of Employment we were looking at the right way of framing it, and it’s framed as tomorrow’s digitally enabled workforce. Spreadsheets didn’t kill off accountants. The smart accountants learned how to use them. Blockchain, distributed ledger technology, artificial intelligence, the next round of technologies which are very much on their way, we can see this coming, they’re not going to as well, but they’re going to change the nature of work and what gets done. It’s all about the transition being on a front foot and making the way forward. The report points towards the rise in artificial intelligence, computing power and the technologies that are coming in the pipeline that happen so quickly, but they’re not gradual shifts, they are exponential.

Uber drivers in Australia and the United States wasn’t a graph that went like this, it was a graph that got to about 2013 and then within months shot up and the taxi market was changed overnight. If you’re in the banking and finance sector looking at distributed ledger technology, we’ve got to start to put the same possibility over it. Porous boundaries talked about the casualisation potentially ahead of us. We didn’t find data of it happening yet, but we can see reasons why it happens in the future, that breaking down the boundaries between countries, skillsets. People move from one profession to another more fluidly. We also looked into demographics, the ageing population, the retirement ages, the rising skillsets required to get a job and to enter the labour market, and globalisation. Sixty percent of STEM graduates come out of India and China alone in the year 2025 I think it is, so there is this massive supply of high capable skills in our region that internet connection plugs them right into us.

So we’ve got massive challenges, but it’s a coin with two sides and opportunity. That was the nature of the study we did, was to put an evidence base around it and paint this picture from which a fascinating amount of policy activity is starting to happen to get a better outcome for Australians.

David Caple:

So Renee from the Department of Employment, I mean you’ve obviously been collaborating with this study. Would you like to add anything further about that?

Renee Leon:

Yes, and I know we’ll mainly be focusing on work health and safety today, but as Stefan alluded to it has got ramifications across a broad range of Government policy. So the kinds of things we’re looking at are would workplace relations frameworks need to change if we were to see more of a shift to what looks more like an independent contractor than an employee, what’s the implications for the skills mix that we need in our population, not only in the digital literacy and STEM space, but in the capabilities that might become more important as algorithms and robots take over more of the automatable work. What’s the kind of skills that our young people and indeed people in industries in transition are going to need so that they can take up the more people facing or more creative work that’s best done by people and not by robots.

So we found the work that we did with CSIRO and the other partners really foundational in terms of providing both an evidence base and a call to action really for Government to think across the whole spectrum of work and skill related policy about what the next decade or two are going to bring us.

David Caple:

I suppose that’s consistent by what I’ve seen in the health and safety space and the way that some industries – like you’ve mentioned Uber – have changed dramatically. Just in the construction industry, which I know is important in Singapore, there’s been significant changes in work methods in commercial construction in the logistics and warehousing industry with automated warehousing systems and in manufacturing. Agriculture in Australia has been heavily impacted by new technologies.

So one of the things that we find though in the work health and safety space, where traditionally –and we still do have a dilemma with fatalities in industry, and that’s terrible. We need to do something about those in construction and transport and agriculture and those industries where they occur. But the changes are occurring in the nature of the work that these new technologies are bringing so that we’re now really conscious about the cognitive impacts of work, so fatigue through extended working hours and the amount of information that people have to process.

The other area is the psychosocial side of working collaboratively with colleagues when we’re talking about virtual workplaces and the like, which we’ll explore in this discussion. But Stefan do you want to talk a little bit about the implications of those changes on the skill requirements of workers?

Dr Stefan Hajkowicz:

I think overwhelmingly artificial intelligence and automation presents this enormous opportunity to improve the safety of the workplace. It is about automating the repeatable tasks. Mindsight automation takes people out of hard to be in environments, dangerous environments, and it removes the repetitive stuff that people aren’t so good at. We want to ruthlessly push in that direction. I mean ruthlessly is the wrong word, but we want to move in that direction as fast as we can to get those safety gains happening, because they’re real.

But there are some uneasy aspects of a shift from a manually operated system to an automated system, as we will see I think with automated vehicles as they become much more common. In 2018 I think we will start to see highway automation quite common in Australia. Already it’s on our roads. So the handover point though about who’s in control of the car is an uneasy one, and if that metaphor can be extended to the workforce, we will have that handover dilemma around when automation takes over. Do you need all of the old rules in place and then a whole set of new rules in place that happen? So there’s going to be some transition periods around workplace health and safety.

There is another thing that happens though, and this is a shift for the human worker being more sedentary in their job, more knowledge based, more interaction with a screen. That’s only going to rise, which will take us towards a space of mental health and wellbeing increasingly and the stress levels of that individual, and that’s where a focus might go increasingly.

David Caple:

So what have you found in this skill requirement when you look at the labour market and the skill profile of what we have for those in employment, seeking employment, unemployed?

Renee Leon:

So historically in Australia over recent decades we’ve seen the skill curve moving up. So the jobs that are created are more and more on the higher skill end, and there are fewer jobs being created on the low skilled and semi-skilled end. So that’s a challenge for Government and for our education systems, to make sure that we aren’t progressing forward with a skills mix that was suitable to the workforce of a decade ago.

We really need to expect our young people to be all digitally literate for example. So we can’t assume that there’s necessarily going to be as many jobs that are the traditional blue collar jobs that are assembly line and so on. But there still will be jobs for the full spectrum of people, but we have to make that we’re skilling up our young people to have the broader range of skills and the higher range of skills that the jobs of the future will need.

I think Stefan’s reference to transition is really one of the things we are very focused on, because we are pretty confident, to the extent one can be confident about any future forecasting work, that history tells us and the trends of the present tell us that as work changes the number of jobs that are created will and always has outstripped the number of jobs that are destroyed. But they don’t necessarily come at exactly the same time, and there’s not only a handover point in each industry, but there’s a handover point in the economy about how long it takes for new jobs to emerge while old jobs are destroyed, and how you can transition the people from the old jobs into the new jobs in a way that doesn’t lead to a lot of personal disruption.

So for example we’re working closely with all of the automotive industry workers as that industry winds down in South Australia and in Victoria. But these are people who’ve worked in the industry often for decades and who need quite a lot of support to think about what industries they could transition to. They thought they were going to just transition to another manufacturing job, but there just aren’t as many of them as there were. Now both the State Governments and the Commonwealth Government have got a very active transition program underway, and we are finding that those people are transitioning into work. But that’s the kind of thing we’re going to need to do across the economy as not only blue collar jobs but also more traditional office based work becomes automated, or as Stefan said is globalised and able to be done on the other end of a screen.

I think the issues that we’ll need to deal with in terms of work health and safety include some of that screen based work. So I read recently that eye tests on young people in countries that have – probably all of us now – their children spending a lot of time on a screen, their long distance vision is deteriorating because they don’t spend enough time looking far and changing their focus. That’s the kind of thing that we’ll need to address in our whole population, not just in our workplaces, to make sure that people aren’t having their eyesight damaged by spending all of their time looking at close range work. That’s obviously not an impossible thing to deal with. Those of us who are sedentary haven’t become unfit for example, we just work into our routine that we go running or we go to the gym or we have a personal trainer, and out of that comes new work in the services industries to support the fact that people are now doing much more sedentary work.

So that’s the kind of what we call creative destruction. Jobs get destroyed, but in the process new needs emerge that people are well placed to serve.

Dr Stefan Hajkowicz:

I think it’s a good point, and there is the aspect of sedentary behaviour, physical inactivity. There’s a paper published in Lancet, the medical journal, one of the world’s most respected medical journals, that is titled the Pandemic of Physical Inactivity, and attributes one in four deaths, premature deaths for humans, down to physical inactivity. I was shocked to read this, but look at the data from the Australian Government Department of Health – and they’ve done studies and put reports up there, and we can see that for heart disease, for diabetes type two, for childhood obesity, physical inactivity – it’s diet as well of course, but physical inactivity is a key driver, and the screen time for young people is going up and our working lives have more of it.

So employers may need to start to look at the physical activity of their workforce. Physical activity is then closely linked to mental health and wellbeing, and that’s been well and truly shown. It’s used as a treatment for mental health conditions already, and is well recognised as an effective form of treatment, but sort of the whole mental health spectrum from mental health to just wellbeing, like what state of mind you’re in, physical activity really, really matters, and I think we’ll see more and more of that happen as well.

So there is an imperative around the shift towards a knowledge and automated economy to look at how much movement people get. And my Garmin has just me to move, so it was a good prompt but I don’t know how to shut it down.

David Caple:

You can stand and stretch if you like. But I think there is a messaging piece and language with this, because you mentioned the white collar work in offices and sedentary work, and so of more recent times there’s been a lot of conversation about we should stand up and work on our computers and that.

Renee Leon:

Even there’s been a trend towards treadmill desks, so where you’re standing but actually you’re slightly walking all day. The health benefits of that apparently have been on early research quite significant.

David Caple:

Yes. There’s some innovation happening in this space. But my background is in ergonomics, and what we tend to find that standing all day is not as good as it may make out to be. The message is dynamic work. You actually need to move the body to generate the blood flow, and so prolonged standing can have its own issues as well as prolonged sitting. We might talk about that sort of transition of what we see in that sector in a minute.

But one of the things I just want to pick up on Renee, you were talking about the technical skill profile that we see. What we’re finding in health and safety is a need to balance that with the non-technical skills, communication skills, situation awareness, decision making skills, collaboration, teamwork, leadership skills. The mining industry in Australia has been doing quite a lot of work where they’ve introduced a lot of automation and skilling people to use that, to actually say the risks associated with it are actually because of the way we work together in understanding what these alarms and prompts are.

Renee Leon:

Absolutely. Look, the airline industry is well ahead of us in that respect, because – I’m sure it will horrify most of you who fly regularly, but most of what’s happening in the cockpit all the time is actually being done by the plane, not by the pilot. One of the things that the aviation industry discovered – we don’t have a lot of airline disasters or crashes fortunately, but whenever there is one they’re intensively studied because of how important it is that we avoid them. What the aviation industry found is exactly as you say, that most of these arise because either people have become too complacent that the machine is doing the work and they’ve lost the skills that they need for when the person needs to make a decision, and even more prevalent it was poor communication between the pilot and the co-pilot or between the pilots and the landing tower.

So recognising that the people to people skills are the most critical in any workplace, I don’t think that’s new, I think it’s always been the case that the people to people skills are fundamental to any workplace both in leadership, in teamwork, in customer interaction, and none of that’s going to be replaced by robots. It’s just that finally we’re going to be seeing in its purest and starkest form that they are the skills that we have to focus on and train for and reward, and not just take for granted that people will bring people skills to the workplace because their human. No, we have to say there’s a whole lot of very specific skills that we need in our workplaces.

We’re already doing a program for our young people, young unemployed people, that will start from April this year that’s specifically focused on what we call employability skills, but they are all people skills. They’re about communication. They’re about decision making. They’re about teamwork. They’re about working with your manager. They’re all about the fundamentals of how we work together as people and I think as automation and digitisation increasingly take away more of those routine and automatable skills, ones which actually humans aren’t nearly as good at as machines. The things we are good at, which is about communication and creativity will come so much more to the fore, and we have to stop taking those for granted and instead properly train for them. Treat them as competencies that you can learn, be assessed on and be rewarded for.

Dr Stefan Hajkowicz:

Flight into terrain is the most common way of crashing a plane, where there’s nothing wrong the plane, there’s just confusion in the cockpit and they fly into a mountain.

But I’d agree with that. One of the graphs that struck me out of the report we did was on the photograph industry in Australia which shows us over time how people who work in the laboratory doing print film and developing film have disappeared to almost nothing, whereas field photographers have gone in the exact different direction. We would have produced ten of these graphs showing a shift for a repeatable routine, highly structured skillset which was amenable to automation is disappearing, but if you’re a field photographer, a lot of it is about complexity, having an eye for what will make a beautiful photograph, social judgment and social interaction skills. A wedding photographer, 90 percent of their job is dealing with difficult social situations, and that’s the skillset that differentiates.

Our view was don’t try and beat the machine. No human beats a computer chess program anymore, even on your iPhone. The iPhone chess programs will beat the world’s best chess players.

Renee Leon:

They always beat me.

Dr Stefan Hajkowicz:

Me too. My little boy who’s ten is about to start beating me as well, which is quite tragic. I think there is this shift going on though that’s really quite profound, and it’s all about differentiation from the computer to – if I can just make one more point on that. I think the t-shaped professional is what we’re looking for. I’m not sure if that’s really hit your radar yet, but we are looking at this – so look at me, I have skills in strategy, foresight, scenario planning, risk analysis. That’s my vertical part of the T, and that’s depth of capability that I need to have to survive in CSIRO and be useful. It may move over time into different areas, but then the top bit is teamwork, collaboration, communication and the broad skills that go across everything. I think as I recruit into my team I’m wanting to draw the t-shaped diagram into the selection documentation, and this is the type of candidate we want.

David Caple:

Great. Let’s just take a question from one of our online participants. So this is from Paolo.

*Q: How should businesses and employers best balance the rise of automation against the need to create jobs for real people and the need to build safe and healthy workplaces?*

Renee, would you like to…

Renee Leon:

Sure. So I mean I think we need to remember that businesses are driven to be successful, and so to the extent that markets will create the incentives for business, we should let that happen. So obviously it’s good for business if automation is more efficient and less dangerous so they won’t have the costs of workplace injury, and they’ll also have potentially higher productivity if they invest in more automation.

There’s always going to be a balance about that, so there’s heaps of jobs that could get done by automation at the moment but that it’s just not economically feasible to do. We aren’t all going to set up a wholly mechanised workplace to distribute say the stationery around the Department. We just would make the assessment that that’s not economically beneficial. So business will always be doing that equation. Is this good for my success as a business?

Moving to a wholly automated workforce is usually not going to be in the business’ best interest if they also have customers who are not robots. So they’re going to be making the assessment about what’s good for my business, but also include what’s my customer interface and have I still left some people in here who know the business and therefore can create and innovate, because we don’t get that much innovation out of algorithms. So business of course will have its own incentives to be successful that will drive in that direction, but I think Government has a role as well about making sure that we are (a) supporting people through the transition, because the business whose just shed a whole lot of drivers because they’ve moved to driverless trucks, they aren’t necessarily going to see that it’s their responsibility to look after anything more than the orderly exit and a departure funding package for those people.

So there is a role for Government about making sure that where there is significant industry shift, that we are thinking ahead of that so that we recognise the kinds of shifts that are going to be coming and are preparing either regions or industries for it, and that we put in place transition packages that will help those workers either individually or as a group reskill for what we can advise are the jobs that are coming down the track. So I think it is a partnership between not only Government and business, but between Government and the regions where this is happening. Because it may well be – if we think of the Latrobe Valley at the moment – it may well be that they’re not going to transition all of those workers into other power stations, but it’s a beautiful part of the world. There might be a whole other industry that people who live there think ‘Why don’t we set this up as like the Poachers Pantry food and wine trail? Why don’t we…’ – and then Government could have a role to stimulate and give seed funding for or to make connections between players that can help to create new industries in a region where that community is involved in helping to decide on where they want to go and what the jobs are for their young people which we can then start training for.

David Caple:

Fantastic. One more question and then we’ll come back to our discussion. Stacey.

*Q: Looking to the future, how can we better design work to manage the rise of psychosocial injury to workers?*

Stefan, do you want to comment on that?

Dr Stefan Hajkowicz:

I will, but can I slip back to the last one as well, because I think that was really quite interesting to me around looking at new industries. When I was in Singapore about two months ago I had a fascinating time, and I was very impressed with everything I saw. One thing was the discussion we had with A\*STAR, the CSIRO equivalent organisation in Singapore that’s doing a great job in thinking about really what the new industries are. We had a discussion about sunrise industries. What are the early signals of the new industries in formation for which there will be new jobs, lots of new jobs. Is it FinTech for example? I know that A\*STAR are thinking very heavily around data analytics and things.

Singapore built an airport and a shipping port well before we knew we needed one, and it worked out tremendously well. I think that they’re now doing the thinking about the next set of industries, and this is thinking that we’ve got to be doing in Australia as well. The marketplace is absolutely shifting around us, and we want to be doing this work on what the next set of industries are. So I think that’s it.

The other thing, that as automation happens we don’t necessarily want to lose the workers. The data I have from America on ATMs and bank tellers, people who go out in front of the staff, show ATMs have risen really sharply. Bank tellers declined a bit but have started going up, and we’re about to see ATMs disappear as we go cashless. I’m confident that graph will come back down. But it’s the banks that have maintained investment in people with strong social interaction capabilities, and that’s going to be key to differentiation.

This question here of looking into the future, how can we better design work to manage the rise in psychosocial injury to workers is a real one, because the social interactions in the workplace need to be looked at as they’re often a cause for stress more than the actual work itself. That is something that we need to understand and get our minds around better. That’s more important. But I would go back again to one of the underexploited opportunities is around the physical activity and the movement of the workers, because that starts to correct for some of the mental health and wellbeing issues as well would be my thought. But Renee you might have more…

Renee Leon:

I think it’s been very instructive in the public service that we suffered a significant increase in workers compensation premiums a few years ago. So this is a bit like business. Business is motivated by its bottom line, and so are we who are running Departments. So if something’s costing you money, then it does make you go and have a look at it. Of course people should look at it for all sorts of altruistic reasons as well, but when something affects your bottom line as psychosocial injuries do, it motivated departments to go and look at why their premiums were rising so significantly.

What we found was the most prominent driver of it was psychological injury and people being damaged either by stress levels or by personal interactions in their workplace. Just by noticing that and then putting in place – doing some research about what causes it, doing targeted interventions, making it a priority across all of our workplaces to notice if there’s what we call workplace hotspots where the culture is not good and people are being injured by their work, and then we’ve put investment into that. We’ve retrained people to be better leaders and managers. We’ve made that part of our fundamental expectations about good management in the workplace. We’re much better at early intervention if people are stressed by their work or by their workplace. We’re much more focused on noticing that early and intervening to support the person and remove the stressors than we were before we started turning our minds to it.

So it’s only one small example, but I think that’s what we’ll see much more across workplaces generally, is that businesses will recognise that if our main strength as workers is our people skills, then we must select for that, train for it, reward for it and foster it, and that that will mean that we design work in a way that’s bringing the best out of people rather than putting people in situations where they’re not delivering their best and at worst are being injured by their work.

David Caple:

Sure. I suppose one of the challenges Stefan with your research about virtual workplaces is how do you deal with the psychosocial needs of people when we’re looking at technology enabling us to work many places, co-working for example.

Dr Stefan Hajkowicz:

That’s right. We certainly did pick up a strong rise in co-working spaces, spaces where people – I don’t work at the same office tower every day. I go to an airline style lounge and I swipe in and out with my credit card. These resources are targeted to professional communities. We’re likely to see a continued rise in these spaces, so the work environment changes. I think a lot of positives come from that in how I view my work and the ecosystem that is built around me to allow me to do that job gets more important.

I think something, looking at psychological injury in the workplace, that probably gets attention at some point is the hierarchical structures within which we work in. We picked up quite a lot of evidence that heavy duty hierarchy structures tend to have higher levels of stress and issues. Then I got into the literature on hierarchy, and it’s under fire in Harvard Business Review, heaps of journal papers, all showing how hierarchy not only creates challenging social situations in the workplace, but also is associated with a dampening of innovation inside a company, which is vital. I think it serves a purpose, hierarchy does, but I think we might start to challenge some of those models and look at the agile start up cultures of small companies that do so well. They have a different sort of focus. This is certainly happening in CSIRO. It’s becoming much more flat in its structure to allow new ideas to just grow and evolve. So I think there will be some interesting thinking around hierarchical structures in the workplace as well.

David Caple:

Renee, do you want to add any comments about the virtual workplace?

Renee Leon:

I think that the example Stefan gives about co-working spaces is one of those examples that show you how you can’t assume when one thing changes that everything else will stay the same. So if we were to think about what we thought when we thought people would work more from home as we imagined people sort of isolated in their studies at home with no one to talk to all day, but in fact humans are social animals and we don’t actually want that. I know you might all like to stay at home and it sounds great, but after a while you miss work, you miss people, you miss being with other humans in a social environment. However that doesn’t mean we all have to be with the people we work with.

So just north of here in Braddon there’s some co-working spaces being set up, and so people are there kind of above a café so it feels kind of lively and innovative, and they’re not working with their workmates, but they see the same people often in and out, coming in and working there. You actually then get to talk to those other people and get new ideas from outside your own discipline and outside your own context that actually makes you better at what you do.

When I did my Masters degree I did it at a University in England, and unlike here where the people who you mix with all day are in your faculty – and so I’d spend my day talking to lawyers, and I can tell you there’s a kind of narrow range in there – in Cambridge you’re actually more connected to your college, and so you spent your day talking to architects and astrophysicists and mathematicians and English literature specialists that give you a much broader spectrum of ideas than if you just spend your day with the colleagues who do the same work as you.

So I think that’s what we’ll find out of more co-working, is that we could well find that it actually sparks innovation. It certainly breaks down hierarchy. So when I joined the public service, there is no way I would even have written – to get a decision made you had to write a minute and sign it, and it had to get cleared, and it went through – I would never have spoken directly to the division head. I mean that would just never happen. Email means that people from all levels of the organisation can email me at any time, and we don’t think anything of it. So email is very old technology now, but even that has a significant impact on just cutting through hierarchy.

We have Yammer in the department. It doesn’t even say on there what level you are. Anyone can talk to anyone, and we do. So technology, even if we still operate in a hierarchical organisation, the reach of technology means that lots of those hierarchies break down and become less significant.

Dr Stefan Hajkowicz:

I completely agree, and I can see that happening in CSIRO. Just picking up on your point Renee about the mixing of interdisciplinary skills, that is key. As we look at innovation out of CSIRO and science innovation generally around the world, it’s the mixing of individuals. Have a look at the Nobel Prize winning list. It used to be one person. Now they’re having to give it to two or three people from different backgrounds, like an economist and a psychologist working together to create behavioural economics. There are many other examples of that, that the actual new innovations we’re going to see are around the mixing, so creating those.

I’m part of this experiment, because in March we’re getting moved out of our current offices and my team is also keen to make this move. We’re going to Fortitude Valley to be part of the start-up culture. This is sort of where it’s a bit out of the city centre in Brisbane and it’s where the start-up companies all want to be, and we’re going to be in a warehouse that is being kitted out and it’s all open plan and there’s lovely coffee shops and bars down the bottom. It actually looks really good, and the team is very excited. But it is all built around the porous boundaries megatrend out of our report. This is us building an ecosystem and really recognising the value of small start-up companies working alongside CSIRO to create wealth and job opportunities. We hope that these small companies will, via their interactions with our staff, create new marketable products that grow Queensland’s economy.

Renee Leon:

But I don’t think we should be complacent about it, and also I recognise that the examples we’re giving are from highly educated, reasonably affluent knowledge workers who’ve got a lot of opportunity and a lot of privilege and a lot of mobility capacity. So we do need to think about, so what is it like much further down the employment ladder. If you’re a kind of digital piece worker, what do we do to make sure that we aren’t ending up creating the same kind of poor working conditions that existed for example in the textile industry where piece workers, outworkers were exploited both financially and in terms of their working conditions.

I think although our work health and safety legislation is very flexible – it’s flexible about who obligations are owed to in terms of you don’t have to be an employee, the duties apply to everyone who’s in the workplace – it’s not nearly so clear what is a workplace. So if I am a kind of digital piece worker, how does my so called employer make sure my working conditions are safe if I’m working from home? Is it my fault if I’ve got an un-ergonomic chair, and is the person who contracts for my work supposed to do anything about that? Whose responsibility is it to make sure that I get connection with other people and don’t suffer isolation and psychosocial injury?

So although there is lots of opportunity, I think as policy makers we also recognise that there are a lot of questions we’re still going to have to address if work does transition much more to this sort of piece work or outwork or place based undertaking.

Dr Stefan Hajkowicz:

Just totally agree with that, and the possibility there that – we’re talking from a certain perspective and fairly well off, but we’ve got to make sure this transition works for everyone in Australia. Last week in America we saw the issues of a big part of society that is not making a transition into a better job, career, life in the new economy. I think that’s going to happen here too, so we’ve got to pay attention to that angle.

One of the graphs in the report that mattered most to me was the declining participation rate of working age males that we just saw continuing to decline. That is not good for them, their communities, their families, and we need to turn this around. A lot of it is technology driven displacement of their jobs, and whilst new jobs are getting created perhaps even at a greater rate, not for those individuals. So I think that’s a vital thing that we have a look at, and the experiences of freelancers aren’t always that good in terms of being able to make ends meet. Highly variable incomes.

In the banking sector they are starting to deal with the issue of how do we offer a loan product when the person’s income does this? How do we factor that risk pattern in? Effectively at the moment it’s just making it a lot harder to get a loan for that individual.

David Caple:

Just in terms of the work design, Safe Work Australia has been doing quite a bit of work in this space and they’ve now put out a publication about the design of work and mentally healthy workplaces, because it is something that I think many industries are now thinking about. If you’ve got remote workers or virtual workplaces, what does good work look like to deal with the physical and the psychosocial risks?

One of the things that we often find with some of the prevention strategies in industry, particularly say manufacturing or construction, is that whilst we as health and safety professionals might identify innovation and new technologies that would be good, the sustainability of those in those industries is often a reflection of is it good for safety, but also is it producing more productivity and return on investment, and also does it improve quality and service delivery. I think the sustainability of a lot of these interventions is something that we have to really challenge ourselves from the perspective of the system, but also the people who are working there.

Just a comment about the social interactions and the co-working. We’ve been involved with many larger companies and the Government here in looking at the new generation of office design in Australia. So no longer it’s sort of an entitlement model where you get a desk and a chair and six square metres, it’s saying if you want to tackle peak hour traffic and go into the workplace in the first place, then it’s generally to do something with other people. So it’s now a design where you create all sorts of opportunities for collaboration and working together, and they have what they call the bump areas where you meet people from other departments and contractors so that you do get that opportunity to talk about your work with others.

One of the evaluations that has been done has indicated that internal email has dropped by about 30 percent, because people are actually meeting each other. So it’s great to see the innovation. It was actually driven not by any of that, it was because the property people said 30 percent of desks are empty every day because they’re at seminars or they’re on leave. So why do we in a green culture provide all this infrastructure which is not being used? It’s been a catalyst to then move on to say well how should we work in a more innovative way?

Renee Leon:

I’m happy to say we’re trialling a bit more of that hot desking over in our Mort Street offices. So any of you who are from the Employment Department and want to drop in on the activity based working hotspot that we’ve set up, very welcome to do that.

David Caple:

Thank you. Now we have another question from out Tweeters. So Wendy asks:

*Q: How will those workers who work in virtual or flexible workplaces navigate different workplace safety cultures on the implication that a workplace has its own culture, and does that change as we move towards more virtual workplaces?*

I mean I’ll just comment on that. Certainly as you say Renee the culture is often driven by the leadership of that workplace, and the opportunity to engage with the hearts and minds of the workers. One of the structural things I find we’re going to have to challenge ourselves in work health and safety, is the legislation has a concept of supervision. It has a concept of consultation. It has a concept of engagement, which is predicated to some extent on a static workplace and a consistent workforce. I think we’re going to have to rethink how does that work in flexible workplaces or virtual workplaces.

Renee Leon:

So I think we need to start looking at the way platform economies work, how they actually work as what our policy directions are going to have to be. Obviously it’s early days for policy, so I wouldn’t want any of this to be taken as kind of here’s where we’re going as a Government policy. But how platform economies work is they work as a transparent community where information is shared. So if you think about all the ways in which we currently use the platform economy as consumers, say when we use Airbnb or we use TripAdvisor, we’re actually depending upon the rest of the community to rate the places that we’re thinking of going, to provide us with helpful tips about beware of that guesthouse or here’s a really great attraction to go to or whatever. There’s also within those communities kind of experts develop. I don’t know if any of you use TripAdvisor, but if you want to go on to one of the TripAdvisor forums, there are people who are rated by the platform as experts on that place, and so you know that their values and their comments are going to carry more weight than Joe Bloggs who might actually be just a fake reviewer for the attraction that you’re looking at.

So the platform economies themselves I think are showing us the way in this respect. It might well be that how workplace safety is mediated in the future is much more through that kind of mechanism, that different people providing work in the platform economy get rated up or down by others who’ve used it as to whether they pay on time, whether they give you reasonable working expectations, and then people will be able to vote with their feet as to whether they go with those people or someone else. Also there will be a whole information platform under it which could be mandated by Government, or it could evolve out of the need to make the industry viable, about what is given to people as the expectation of what they should provide for their own workspaces that will keep them safe.

So rather than us try to regulate in an old fashioned way what everyone does in a hierarchical supervised way, it might well be that information, the way platform economies spread and make transparent information becomes much more part of the equation.

As well as that I think technology itself is going to end up having the capacity to regulate who’s doing what. So for example construction sites now sometimes have drones in some countries going round and monitoring whether people are doing things by the book or whether there’s safety violations. So that’s a way in which technology can actually monitor what’s happening on a site remotely. Similarly our wearable clothing devices and Fitbits and so on could well be part of what monitors whether we’re doing our work safely.

I was at a conference last week where an amazing presentation from a United States academic involved in digital health initiatives exposed us all to how much just our iPhone or our Apple watch could easily be telling us in future, and telling our practitioner or our employer or our insurance company if we like, what we’re doing by way of our own health and monitoring whether we need to do something about it, telling our employer so and so needs a work day break, or telling our doctor it might be time to ring so and so to come in for a blood pressure check. So it’s quite possible that technology itself will do a great deal to improve our own personal workplace safety in ways that we can’t even imagine yet.

David Caple:

One of the things I see in that line, there’s a lot of people now whose office is their car and they’re mobile workers or they do field related work. To meet this duty of the culture of supervision, employers are looking at watches and duress things and GPS in cars, of being aware of if that person is having a difficulty. So occupational violence is a big issue in some of the sectors. They have a mechanism of acknowledging ‘I have a problem’, or if they don’t return to home then their family has a way of knowing where are they. So I can see technology helping out in that supervisory engagement.

We have another web question before we move on from Tony.

*Q: I’m thinking a rise in automation will lead to a significant increase in maintenance, and it’s this maintenance work or rectification work which is often the high risk. What are your thoughts on that?*

Stefan did you look at this area at all?

Dr Stefan Hajkowicz:

We see a growth in jobs that are associated with providing maintenance to all the fleets of automated vehicles, boats, the drones. These little things need to get fixed, because there is a next level. That was one of the new job categories we point towards. I think quite possibly that’s there. Aspects of maintenance will also be automated as well though, so it’s something that will grow quite widely.

So it’s hard to see – the thing that grows in this automated economy is the non-routine, the complex tasks that require judgment, and that’s what we’ll see more of. I don’t really know specifically on maintenance high risk. I know in the mining sector they’ve built automated vehicles that replace the wheel on the automated truck. When the automated truck breaks down or has an issue, another automated vehicle is now able to come and fix it. So it could be that we see some of that. But there may be a skeleton staff on the mine site that does have to do maintenance. Maybe they face new risks around remoteness.

I think Renee’s points around the under-use of these sorts of things, there are privacy issues potentially that we will be confronted with, but we can manage those. Increasingly we can manage those, and there are teams of data scientists in CSIRO working on de-identifying data or ensuring that the data is protected and used for the right use. But this is telling my employer a whole lot about my safety, and it is just not getting used. As we travel internationally we have to go through all these approvals and check ins all the time, and I find it frustrating because this is giving a continual read out of heart rate and location and speed and direction and movement. It’s enough to work out whether there’s an issue and where I am, and is underutilised.

David Caple:

Renee just in terms of – we’ve talked a bit about the different natures of work, and I’m just interested in what appears to be a trend away towards more contingent workers, part time work, casual work, labour hire work, rather than I’ve worked for this company for 27 years and I’ve got my gold watch and that’s my career.

Renee Leon:

Look, people say that, but the data doesn’t tell us that that’s happening, and I’m taking this from the Bureau of Statistics figures. So the number of workers in casual work has been pretty stable over quite a long time. It’s about 20 to 24 percent of the economy in casual work. When you survey people’s satisfaction with their work, the satisfaction levels across casual workers and full time ongoing workers is pretty consistent, and that tells us that mostly people who are choosing to work casual work, it’s working for them. Quite often the casual work is not precarious. They might be employed as a casual but they know they regularly get three shifts a week or they always work the weekends, or they’re at a stage of their life where casual is what they want. They’re students or they’re semi-retired, and so they’re not the prime age breadwinner.

In that category of prime age breadwinning there is, although it’s not big enough to show up in the ABS statistics yet, yes there is a risk that if you get more people in those prime age breadwinning years in casualised work, then there is stress associated with that because they’ve got mortgage repayments, they’ve got family responsibilities, they’ve got bills they can’t avoid, and they don’t have the bank of mum and dad like the student cohort does to sort of back them up. So although that’s not yet a significant stream in our economy, it is the kind of thing that we are monitoring.

So that’s one of the reasons why we’re monitoring what is the growth in the gig economy and who’s participating in it, because some policy makers say that if you were to move to a situation where whole swathes of people or even the majority of people were working in this much more precarious, I never know how much work I’m going to have each week kind of way, then you might need a different kind of social safety net to the one we currently have. Because at the moment we assume you’re either employed or unemployed, and there’s a bit in the middle where you’re working some of the time and part time work where your benefit might go up and down, but it’s quite clunky, it’s not real time responsive. So we might well need to see a more responsive social safety net that compensates for those peaks and troughs of employment.

But as I say, we’re not seeing that being an economy wide situation yet. One of the reasons for that is that – and research backs this up – is that actually most employers do value what you get out of team relationships, out of loyalty to the company, out of understanding the values and the direction of the company. What we spend a fair bit of time on in any organisation, in my department for instance, is all of that regularly transmitting what are the values of this organisation, what is important to us, what’s our mission, how do we work together, how can we collaborate with each other to produce even better things. If I totally casualised my workforce, I’d pay a huge price in losing all of that. A different thousand people in here every week, I’d have to retrain them all in workplace culture and what’s our mission. They wouldn’t know each other, they wouldn’t have what we call the speed of trust, that if you know other people then you can trust them to work together and you know where they’re coming from.

You build a heap of intangible value out of having some stability in your workforce, and I think that’s one of the dampeners on the idea that everything is going to become totally casualised. My son works on a casual basis – he’s still at school – at the local supermarket, but that doesn’t mean every week they sack him and put someone else on. He’s been working on a casual basis for four years because then he knows their systems, he’s inculcated into their culture, they trust him to turn up on time. There’s a lot that you get from having an enduring workforce that I think means we won’t see wholesale casualisation across the workplace.

David Caple:

Is that what you found Stefan?

Dr Stefan Hajkowicz:

We found similar. We have nothing yet. We looked at the data and we thought it was wrong. We looked at it again. We tried as hard as we could. I think a little bit more evidence of it happening in America post global financial crisis, but that was forced casualisation when so many people lost their jobs and there was nothing else to do, so they had to become a freelancer and take work where they could get.

I think it’s a case of nothing yet, but watch this space. I agree. I think there’s strong drivers and business reasons for holding on to a core team, but I think there are parts of the labour market which may be subject to stressors from globalisation of their tasks, and that’s where the casualisation might start to grow and the freelancer economy might grow. So I think it’s something that we want to monitor and understand how it unfolds, because it could be that policies and protective mechanisms are required to be put in place. When we look at the economics of it, it really stacks up. Purely take out everything else and think about the financial aspect of it. The need for an employee ebbs and flows over time. It’s not consistent in just about any profession.

In theory if the transaction costs of engaging employees of the right skills are taken away and if that trust can be replicated a bit by accreditation systems, rating systems, star rating systems and so forth, then in theory the micro-transaction is cheap enough to enter into a short period of time and keep on doing it with a well-defined task and problem. So as we think about it as economists and what would be the most sort of efficient solution, yes, casualisation and freelancing looks pretty good. But it might be that there are other business culture drivers which mean we don’t want to go in that direction. So let’s keep an eye on this one as it could happen quickly, and if it does we can paint alternative scenarios. We may need policies and thinking in place for a growth in casualisation.

David Caple:

One of the things that most developed countries, including Australia, something like 90 percent of registered workplaces are small and micro-businesses. They’re not these larger companies, although they employ the majority of the people. One of the challenges for the health and safety regulators is connecting with those small businesses about their own attention to safety. I’m just wondering with your work Renee do you see any changes? Stefan’s talked about the entrepreneurs and the innovation, the start-up businesses. Any changes in that profile of small business?

Renee Leon:

So there’s definitely more risk around just lack of knowledge or cultural systems in smaller enterprises. But I think the new world of increasingly web based information makes it easier for small and medium business to access safety information. A decade ago you probably had to go to a seminar or write away to a Government department for them to post you some information. So there were a lot of barriers that would mean if you were just running the local bakery you wouldn’t pass them. But if it pops up on your smartphone when you log on every morning just to turn on your accounting system, then it’s much easier for you to access information about what are the safety requirements in your business. So partly I think technology is helping us there.

Secondly there are increasingly models where large enterprises who subcontract for things with small enterprises are passing on safety requirements to them because it’s in their interests to have lower cost further down, and so a safer business is actually a lower cost business because they’re not paying for injury and fatalities. So in the building industry for instance we have an accreditation system which is mostly large businesses who participate in it, but part of it is that they transmit safety requirements down into their suppliers, and so there is a kind of web effect that happens where better safety standards in larger enterprises translate into better safety standards in their supply chains as well.

It’s not a panacea. I think Safe Work Australia has a lot of work that they do around particular industries, especially where they are small and medium enterprises, and we’ll need to continue to do that in a kind of industry specific way. But I think technology helps us by way of information dissemination, but it’s also increasingly removing risk and removing injury. Heavy manual work is aided by exoskeletons in a way that both increases productivity and reduces risk. Machines that do a lot of the dangerous and injury prone work are just taking out the risk, and therefore we’re pushing down workplace injury all the time, whether it’s in a large or a medium enterprise. So I think there’s a lot of benefit to be seen across industries of all sizes as we move forward in this area.

Dr Stefan Hajkowicz:

I think integration of datasets and better use of data. There’s a mass of data flowing out there at the moment that would be pinpointing all sorts of safety risks that we’re just not acting on yet. I think that’s one avenue that we want to get better at, is interrogating that data, be it social media data, be it transactional data, colleagues at a bank show being able to have records of 40 percent of all the transactions that happened today across Australia, and inside that dataset all of a sudden you know about what’s going on right down to very specific locations.

So there are privacy issues always, but we are underutilising the data that will pinpoint safety risk, and that’s something to exploit. Then the platform based models that you’ve mentioned, I think that too is a source and a way in for us to better get into – because regulation of every small business is impossible, but these are more intelligent models that allow us to get into those cultures and look at the safety of what’s going on. So it’s probably one of the main…

Renee Leon:

The internet of things will hugely change our abilities in this regard. I can imagine a future Safe Work Australia that almost every business will have a digital connection, their machines are going to be connected to the internet. The things that operate their cash registers or their ordering system or their manufacturing of goods or whatever it is, they’ll be internet connected, and so you can easily imagine a future regulatory model where the data – the algorithms analyse the data in the background and just pop up alerts to the safety regulator to say there seems to be way too much production going on for the number of workers. There must be some unsafe practice going on here. So you can quite precisely target where you need your workplace interventions, whereas at the moment it’s a bit more random than that.

Dr Stefan Hajkowicz:

If we look at driving safety, if you buy a modern car today it is transmitting data the whole time. That data also tells you about the safety of the car and how it’s being driven, and would allow you to pinpoint an unsafe driver really quickly. I know that there is work done colleagues on the—like when you’re falling asleep, it actually does facial recognition so it wakes you up and gives you a startle. But that data is a continual real time flow. That wouldn’t be just for driving now though, it would be all sorts of gadgets out there that people are using on construction sites, and part of the information about how it’s being used will tell you something about the safety not just in general, but right there and then, and we can use that.

David Caple:

So one of the criticisms I suppose about this information age is there’s just so much information, that rather than looking for something you just type it in to one of the search engines and say you find it for me. Even the regulator’s own website, I find a lot of workplaces rather than going to that will type it in to one of these search engines instead.

But an example Renee of one of those industry approaches, the trade unions and the employers and the regulators in the private service station sector have got together and developed their own little website, and through cooperation of Standards Australia and various other agencies have now got a one stop spot where if you’ve got dangerous goods this is what you’re going to be audited on, this is actually how you should be looking at it, this is what your sign should look like. So it’s actually a nice little package so that particularly people from non-English speaking backgrounds and people that have not run a small business before can use that as an induction tool I suppose into that sector.

Renee Leon:

That makes it easy, and if it’s easy and low cost then why wouldn’t a business do it.

David Caple:

Yes. But it’s an opportunity there for the trade unions and the Government and the employers to work together.

We have another question, and then just in forewarning we’ll then come across to the audience if you would like to ask a question. So from James:

*Q: Is there any type of push to help alleviate stress in the workplace to working shorter work weeks to increase work life balance such as Scandinavian countries like Norway? This has proven to have great benefits for society while still being productive in the workplace.*

Did you look at Norway as part of your benchmarking?

Dr Stefan Hajkowicz:

We did, and they do very well. So one of the graphs we produced that I found fascinating was to put labour productivity on the Y axis, dollars of GDP per hour worked, and then hours worked on the X axis. We find this really strong linear correlation that those countries with not a large number of weekly hours worked had lower rates of labour productivity. Mexico is really bad. You can work very long hours there and not do much good for the economy. Norway was at the very other end of that graph where you could work fewer hours and each hour you work had greater economic benefit for the whole economy. That’s the space you want to be in. Australia was around the centre of it.

That though takes us towards this realisation that there’s no brute force solution to the digital economy of the future in terms of work. It’s not how much work you do, it’s how smart the work is and how well you’re plugged in. It’s working smarter not harder. Now in Sweden they did an experiment where they reduced the working day from eight hours to six and adjusted people’s pay upwards. So they still had to give them the same total net pay at the end of the year. They did it in an internet start-up, an old people’s home, a city council and two other companies – Toyota car servicing place – so different types of jobs. In each case when the managers of those companies were interviewed, they found no loss in productivity. One reported an increase but no loss. The aged care home reported also lower levels of stress.

Long working hours are associated with stress. They’re associated with decreased life spans and heart disease. A study of about 650,000 people in the United States has come in recently, it was published last year, that showed isometric heart disease had a—I think it was about a 30 percent increased probability if you worked more than 40/50 hours – 50 hours a week sorry it was. Sorry, 55 hours a week. That was it. Fifty five hours a week, 1.3 times higher chance of getting a heart attack, and stroke was also a risk category. So I think there is a loss for very long working hours, but increasingly as I tell my team, it’s not about how long you work, it’s about how smart you’re doing your job, because you cannot compensate via just sitting in front of a screen and working a whole lot. I think the presenteeism phenomena as well as absenteeism is there as well. Sticky taping someone in front of a computer and getting them to work long hours does not lead to great levels of productivity, and it leads to them being stressed out potentially.

So we want to try and I think challenge some of those ideas that lots of work is good work. It’s got to be smart work.

David Caple:

Renee, I know you’ve talked before about the greyness between work and home, and the challenge I suppose we have of deciding what’s work and what’s life balance because of technology, potentially interfacing 24/7.

Renee Leon:

Well I think these are about human decisions not about technology. So of course I’ve got a smartphone. Am I checking my work email 24/7? Do I expect my staff to do that? I don’t, because I think it’s important for there to be work life balance, because people are happier and people are more productive if as Stefan says they’re not working unreasonable hours. Does that mean I’m available 24/7 if something is needed to be done? Yes, of course it does. I think it’s about the culture of your workplace that drives your productivity as against presenteeism as much as what your formal hours are. More power to Stefan about putting out that research about six hour working days. Personally I’d be a huge fan of that.

But even within our much more traditional eight hour day, we’ve certainly got choices about how we increase our productivity as against just our time at the desk. I encourage people to actually take their lunch break, not think ‘It would be really good if I stay here and work through my lunch break and get this thing done’. Yes, there will be days when you have to do that, but you shouldn’t do it every day, because there’s a reason for a lunch break, there’s a reason for an evening, there’s a reason for a weekend. Often it’s the decisions of the people in the workplace that are driving that kind of presenteeism, not the so called formal hours.

Australia is one of the high working hours countries, and I don’t think that we get the kind of productivity pay off that people might think as a result of that. I would much rather in my own department that people were working smarter and working when they’re refreshed than slaving away for ten hour days and thinking that’s productivity.

David Caple:

Yes. It’s interesting there may be some generational expectations here. In the legal profession we’ve observed that a lot of the young graduates who are working extended hours are just saying ‘I don’t want to do this anymore,’ and are opting out of the profession, which is disappointment of their skills and talents.

Renee Leon:

Well they can come and work in the Department of Employment where they can still be a lawyer and nevertheless have a healthy work life balance.

Dr Stefan Hajkowicz:

I remember when I was working in Adelaide at CSIRO I was trying to solve a computer programming problem. We built a model to look at how land use would be redistributed within a catchment, and it had a randomisation function in it. This was early on in my career, and I’d spent probably about eight full days trying to solve this and had the computer running an algorithm that took, I don’t know, 78 hours to run each pass and it was totally unworkable, until someone from upstairs, a mathematician, a brilliant mathematician, came down, had a look, diagnosed the problem, went upstairs and said ‘I think I can help you with this’. Emailed me a snippet of code this long which I plugged in and it was doing it within seconds. That was a bit of a wakeup call that it didn’t matter how long I went on this, I had to either clear the hurdle or not clear the hurdle. I had to figure out how this thing worked, and that additional insight he was able to give me solved it straight away.

That’s my I guess learning about it doesn’t matter how many hours you put it in. It might have been better for me to take a whole day off and sit on the beach and think about it or go and read or stop being so busy and actually be more productive. But the only way we were going to get it to work was via this improved algorithm which required a deeper level of knowledge and sort of ability.

David Caple:

Let’s just take some questions from the audience. If you’ve got a question, if you could just put your hand up and wait until the microphone arrives, and then introduce yourself with your question. Do we have any questions from the audience? Yes, so we’ve got one down the front here. Thank you very much.

*Q: Thank you Justin. My question is to the Secretary both as a Cambridge educated lawyer but also as the head of the Department of Employment. The law historically doesn’t always keep up with socially progressive movements. We’re seeing a lot of disruption in the labour market as a result of the gig economy and new business models. I was wondering how are we going to protect workers in the future given we’re having so much disruption in the market?*

Renee Leon:

So I think it is incumbent on us as policy makers, whether in our legal teams or otherwise, to just be more agile about it. So there’s no shortage of policy thinking here about the challenges of the gig economy. They’re not manifesting broadly across the economy yet, so in that sense it’s not as though it’s already happened and the law is as they say in the rear and limping a little. So I think it’s incumbent upon us to be thinking ahead, so that—because it takes—even in your best scenario it tends to take about a year for legislation to be developed and implemented, and that’s assuming that you haven’t got the cross bench that we’ve got.

I think it’s incumbent upon policy makers to be thinking ahead and putting in place the foundations for flexibility so that the legislative models will work, and I think the Work Health and Safety Act is a good example of that. It was reformed in a way that made it very flexible about what – it doesn’t prescribe a whole lot of things about what you have to do, it instead leaves the detail to a regulatory model that can put out guidelines much more flexibly than the Parliament can pass laws. It makes a test of reasonably practicable so that that’s flexible for all sorts of work circumstances and types of work, and it also covers all kinds of people in the workplace, whether they’re employees or contractors or just other people who are there for some reason.

So providing a flexible model is one of the things that I think we need to do, as well as making sure that we don’t have our lawyers sitting in a kind of backward looking space but are thinking forward about what are the policy challenges of the future. That’s something the Department is doing by investing quite a bit of thought in the future of work, is making sure that we’re kind of ready with policy solutions for Government so that as things materialise we’ve already thought about it, we’ve already consulted on it, we’ve already looked overseas for what they’re doing, and we’re ready to do something rather than noticing the problem after it’s emerged and then spending two years in policy development before we can address it.

David Caple:

Thanks for the question. Any other questions? We’ve got just down the front here, second row. Put your hand up again please.

Just stand up and just introduce yourself.

*Q: Good morning. Peta Miller from Safe Work Australia. So I know Stefan previously you’ve talked about intergenerational changes as we work longer, and many of us will be working well into our 70s, me too I hope. But I’m interested in is it a myth that we have intergenerational differences in our communication styles, or is it real? And if it’s real, what should we be doing Secretary Leon about actually skilling up our various generations to communicate more effectively together?*

Dr Stefan Hajkowicz:

I think it is partly a myth. I think older people are just as innovative as young people, and are just as good communicators. I think that there isn’t any strong evidence to sort of separate them there. I think we are seeing people stay in the workforce longer later in life. I think it’s incumbent on employers to start thinking about tapered retirement models where we don’t just stop work at 60 or 65, we retain the right level of connection and engagement to the workforce. The diversity of having young and old together is a good thing in the workplace. It actually improves the productivity. The same rules of respect and the same cultures come to play. Male/female, old/young, whatever, it’s not important. It’s how you play the game and how you do your job.

So I think one of the key sort of policy interventions I think is around tapered retirement models. We actually know that people who have some level of connection and the right type of connection later in life get better health outcomes, mental and physical, because human beings want to work, it’s part of our DNA, and we want to keep that happening. But you can’t be a coal miner shovelling coal down the bottom of a big coal mine when you’re 75. That’s not good for your health. But you could be on the surface giving a—doing a safety role or you could be writing a thesis on how to do it better. There would be other roles and functions that you could fulfil.

CSIRO actually has in its manual a thing, on the human resources manual, about what we do with old people. We don’t get sent down to the laboratory anymore. They’ve stopped that. They have a section on tapered retirement, of scaling back and changing your duties. I think when push comes to shove it means we just don’t pay you. We have plenty of scientists who retire and then Monday they’re back at work again doing roughly what it looked like they were doing already, because they’re quite in love with their jobs. So I think some of those things can be looked at.

Renee Leon:

We cut and diced the staff survey – not the most recent one, but the one before that – looking for so called intergenerational differences in either attitudes to innovation or satisfaction with work or views about work life balance, and we honestly couldn’t find any significant difference that was age based. I think there is a bit of mythology about it. They do say there’s two kinds of people in the world, those who like to divide people into categories and those who don’t. So I think demographers often like to sort of make a thesis out of the idea that the different generations have got different kind of communication styles or expectations. I think people are much more diverse than that, and that’s in terms of our own Department’s data. That’s what that tells us.

But it is really important that we don’t segment our workforce into these are the older people and they should do that kind of work, and these young people, well we’ll put them in the innovation space, because that kind of stereotyping would get in the way of the thing that actually does grow innovation and effectiveness, which is mixing your teams up. All of the data tells us that having diverse teams is really important for being successful and innovative and effective.

So one of the things that the Department of Employment has recently instituted is our Young Leaders Network where young people – and I think it’s flexibly defined about young people. I did ask if I could be part of it, but I think I did fall over the cut off. But our younger people and people at lower levels in the Department getting together to share information and to network with more senior leaders so that they’re kind of reverse mentoring us as well as getting insights from us about how things currently work.

So either by mixing up your teams or by creating specific structures that will bring younger people and older people together, it’s a great way to make sure that whatever wisdom the older people have developed over years doing a particular thing is able to be shared with those who are newer to the role, and whatever ideas and innovation might come from those who are looking at it afresh is able to be shared with the broader team.

David Caple:

That’s a good question Peta. Thank you for that. I’d just make a comment about the data in relation to injuries and older workers. It doesn’t tell us that older people will get injured in a disproportionate manner. They’re smarter, they’re wiser, they use their talents and knowledge in a different way. They learn in different ways, and so perception of skill development and training might need to be modified. There’s also an opportunity to increase automation in the repetitive and heavy manual work where these people may have worked.

Dr Stefan Hajkowicz:

There’s also a lot of men over 55 in Australia who aren’t in a job and would like to be as well, and I think this is part of the other challenge, is that they feel – they report in surveys discrimination about getting into jobs. Men and women as well, but men is a demographic that is highlighted in the data that we found.

David Caple:

Okay. Another question if we have any more from the audience. Yes, down the front, Rose.

*Q: Rose Verspaandonk from Employment Department. Thank you. This has been a really enlightening, enjoyable discussion. I read recently that 50 percent of Australians have a chronic illness, and I thought that’s rubbish and went to AIHW, and they were the source so it’s real – some more serious than others of course. What challenges does that present for work health safety and how might we deal with that?*

David Caple:

If I just make a comment from my perspective. Yes, you’re quite right, and if you just look at probably one of the most common illnesses being musculoskeletal injuries, if we were to ask the people in our auditorium to put their hand up if they’re carrying some form of a chronic bad back, bad shoulder, knee, ankle, probably the majority would put their hand up, because many of us do have that as part of our journey in life.

What that means for employers is that you can’t therefore treat everybody the same and expect that the average person can do this job. We have to engage with the people on their own journeys and understand where they’re at and what their capacities are, and modify our jobs to cater for those individual differences. I think that’s one of the challenges for contingent workers, is to build up that rapport with their supervisor as you were saying Renee, to understand what are the strengths, the talents that they’re bringing to the job, but also what are their personal issues and limitations that will make that journey difficult.

It’s not just for their own illnesses that you’re talking about, because many people are carers, they have other responsibilities outside of work that influence their fatigue for example. I think one of the issues we’re finding in shift work environments is that people are working extended hours with chronic fatigue, and that has direct safety risks for their own safety and the people around them. So I think we have to be quite open in understanding who we’re working with, where their journey are and encouraging people. We’ve all got a responsibility under the legislation to take care for ourselves, to take care for the people around us, and that includes being aware of those chronic illnesses that you’re talking about and how they impact on health and safety in the workplace.

Would you like to comment on that?

Renee Leon:

So I’ve got a chronic illness, because I’ve got arthritis. So I’ve got a useful little bit of technology here – it’s very old fashioned technology – that actually manages that for me and enables me to work every day. So I think increasingly illnesses and injuries, as the cost of technology decreases and the efficiency of technology increases – we already know how much medical technology is extending our ability to do things that once it would have killed us, and now we can have a pacemaker. So I think there’s a huge opportunity, especially in wearable technology and responsive equipment, for us to have a pretty low cost, relatively personalised interventions that will enable what used to once be a kind of headache for a manager – this person needs a special chair or something. Well what about when all chairs are able to just tell what you need when you sit in them and modify their position so that they’re right for you and you won’t be injured.

The experience of technological change has been that something that starts off very complicated and expensive pretty rapidly gets cheaper and more widely available until it becomes cheaper to have it than to not have it. I think there’s a lot of opportunity in the workplace health and safety space for the technology that just is part of our workspace to be both monitoring our health and safety and also actively contributing to maximising it.

David Caple:

Just something else. In the emergency services industry, like firefighters, police, paramedics, I think a lot of employers realise that they have a duty of care towards these people and understand those illnesses and not place them into roles where they could potentially lose their life. What I’ve seen in more recent years is an emergence of employers developing medical standards and fitness appraisals for those groups so that they’re at least informed so they can match those to the roles before they deploy them and understand what those risks might be.

Renee Leon:

You know, there’s an economic argument for all of this, and without wanting to be brutal about what drives decision making, the economy and the economic cost benefit does drive a lot of decision making. So if you can get more productivity out of your workforce and less cost of injury, who wouldn’t do that?

David Caple:

Exactly. Any more questions before we wrap up our seminar?

One more. Thank you.

*Q: Hi. My name’s Fleur de Crespigny. I work for Safe Work Australia. You’ve talked today a lot about psychosocial hazards and the issues associated with sedentary work and musculoskeletal disorders, but I wondered if given the change in the cross-section of industry that we might expect, given all the changes we’ve talked about, whether there are any other work health and safety hazards or areas of concern that might emerge into the future that you haven’t discussed yet, and what we might need to do for the most at risk workers in those areas.*

Renee Leon:

Look, I think the way I’d answer that is much more about our need to be constantly outward focused so that we detect these things early, and for there to be much better engagement between policy makers and academics and stakeholders so that we’re able to respond as things emerge. I don’t think we are well placed within Government or even within regulators to be able to predict things that haven’t happened yet but that might happen. So a lot of what we talk about there’s a degree of speculation about it. Maybe workforce will casualise, maybe it won’t. Maybe much more work will be screen based. But in a decade screens could be such old technology. It might all just be Fitbit and voice activated.

So I think we need to be careful not to sort of predict too much what the form of the work is going to be, and rather put in place both systems and cultures that keep us agile, that keep us outwardly focused, and that keep policy makers and regulators very actively engaged and in a listening mode, and not only to their traditional stakeholders. Maybe you regularly talk to people in sort of six key industries and you haven’t noticed that actually there’s a whole new industry emerging over here that you hadn’t even realised until it happens. So it means reading broadly and engaging widely with both academics and with people in the broader community so that we’re ready to detect trends rather than to think we already know what they are.

David Caple:

Stefan, do you want to comment on that?

Dr Stefan Hajkowicz:

Look, I think so too. My team are working more on techniques around emerging risk and what we call weak signals, early signals of something changing which creates a risk. I don’t think we do tend to do that good a job on emerging risks that we don’t yet understand, that aren’t clear, that are on their way. The better we can get at it – and accepting that there are multiple plausible futures ahead of us in a lot of risky situations. It’s not just one or the other. But if strategies can be resilient under multiple plausible futures, they become better strategies, which means we have to try and construct what those are.

So I think we will be doing more to try and understand emerging risks and how the risk landscape changes, definitely. It could be cyber security starts to introduce new risks for safety in the workplace around privacy breaches, which don’t just affect the company but individuals in that company as well. Are we on top of that? Probably not. I would put that into the category of an emerging risk that we’re still getting our heads around.

So yeah, it’s a space that warrants more thinking and effort and frameworks and structures to handle emerging risks. The whole unknown unknowns thing can be put on the table, which I don’t really buy into. I think that we have signals, just weaker and harder to read signals about the risky event before it happens, and we need to get better at reading those signals and also not having naïve views that the future just holds this pathway. It doesn’t. It holds several different plausible pathways.

Renee Leon:

That is one of the reasons why Government departments should work with big thinkers like the CSIRO. It’s just exactly an example of the kind of collaboration and partnership that we can all only benefit from.

Dr Stefan Hajkowicz:

And I think also with our colleagues here from Singapore, Singapore is a country that does this incredibly well. I’m not just saying it because they’re here. We do learn a lot from these guys. They take a 20 year view on the future, and they have thinking and plans and analysis of trends. There’s a section of the Singapore Government that does this, but it’s embedded into the thinking what they call the long range or the long view, and it’s evident in how industry works, how the city is structured and how things come together that that long range perspective is being taken. So I think there are some things we can do there as well.

David Caple:

I’ll just make a comment that we’ve talked about some of these physical risks, but I go back to the issues of the emerging focus on cognitive risks and psychosocial risks. I think one of the challenges for industries and companies that are going through change like you’re describing is to be very open about it, because I think the actual change management process in itself is what a lot of people worry about. They just can’t see what the future looks like. Can I take that mortgage? Can I afford the children’s school? Therefore this focus on recognising psychosocial and psychological impacts of the fear of the future is something that we all have a responsibility to acknowledge.

We have to wrap up in a minute, but I just thought I’d go back and just ask you whether or not you’ve got any final comments on the future of work that we haven’t already covered, or whether you want to leave the audience with one or two key messages of what we have covered, of where we’re at and where you see us going in this space.

Renee Leon:

So one thing that I’ve really noticed in every conference or presentation I’ve been to about the future of work, is that what we should expect to see in all of these dimensions is sort of slow change for a while and then there’s a really exponential shift, and you can’t always predict when you’re about to hit the exponential moment. So I think it’s incumbent upon us to be constantly ready for when that exponential shift might occur, to be thinking about the future in a way that’s not complacent, and that’s always looking to see are we ready to respond to a big change. I’m optimistic about the changes. A lot of the talk about future of work is in the doom and gloom space, that 40 percent of our jobs are going to be taken over by robots.

I’m optimistic that the human mind and the human society is endlessly capable of adjusting to change, but that what’s important for us as policy makers is to remember there’s always a human dimension to it, and that we have to think about how we support people through transitions, whether that’s the people in our own workplaces or the people that Government as a whole has responsibility for, and that that piece of not only thinking about automation as if it was just a kind of cost benefit story, it’s critical that we support human society to do what it’s good at, which is adapt, look after each other, become better than ever at what we do.

David Caple:

Excellent. Stefan?

Dr Stefan Hajkowicz:

I think so too. Let’s at some point not just focus on technology, but people, and keep people at the centre of this digital disruption story. People are what really matters in digital strategy work that I do.

The other key point I’d want to make is let’s make this for everyone. We cannot leave parts of Australian society, big parts of the community behind in this transition in getting a safe workplace and getting jobs that are productive and good to be in. There is a massive amount of transition ahead of us. It will be fuelled by a changing industry landscape. Beyond 2020 new industries will exist that we don’t know today. The billions and billions of dollars going into FinTech for example has got to change the way we do banking and finance with implications for people’s jobs, and we can see that happening. Those countries that are smart enough to position themselves well and correctly – and what that correct is I’m not really sure. It could be counter trend movements as well in here that we want to take. But those positionings that we do early in the formative industries get really important as we go down this path.

So there is a requirement for improved anticipation of future conditions, and a stich in time saves nine. A stitch in time saves nine for the individual. Give them another job before they lose their job. It’s a lot easier to make that happen. But ensure Australia has another industry before the old one closes down, like mining. That’s at a national level we need to do that, because industries make jobs as well, so we need to be anticipating future industry conditions to give Australia pole position and first mover advantage.

So it’s a rapidly changing world. In Data61 we’re thinking through the innovation narrative and the knowledge economy narrative. Partly as we look at last week and we look at Brexit and we think well what’s going in the world, it’s changing quite markedly, and we want to rethink that innovation narrative to something that connects to everyone and makes sense to everyone. We don’t know what the answers look like yet, but that’s my thought. Better requirement for anticipation of future conditions, and this is a journey for everyone in Australia.

David Caple:

Great. Well thank you very much, and thank you to our audience for your questions, and for our viewers online, thank you for participating in this seminar.

I think one of the great things out of this has been the collaboration between your Department of Environment [sic] and the CSIRO and Safe Work Australia for their support in this space. So I think the future collaboration looks to be fascinating. I look forward to working with you.

So I’d like you to join with me to thank Secretary Renee Leon and Dr Stefan Hajkowicz for their presentations today. Thank you.

(Applause)

§ (Music Playing) §

[*Closing visual of slide text saying ‘Brought to you by Safe Work Australia’, ‘Virtual Seminar Series’, ‘seminars.swa.gov.au’, ‘#virtualWHS’*]

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