

**ECONOMICS AND INDUSTRY  
STANDING COMMITTEE**

**INQUIRY INTO TECHNOLOGICAL AND SERVICE INNOVATION  
IN WESTERN AUSTRALIA**

**TRANSCRIPT OF EVIDENCE  
TAKEN AT PERTH  
FRIDAY, 12 FEBRUARY 2016**

**SESSION THREE**

**Members**

**Mr I.C. Blayney(Chair)  
Mr F.M. Logan (Deputy Chair)  
Mr P.C. Tinley  
Mr J. Norberger  
Mr T.K. Waldron**

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**Hearing commenced at 11.11 am****Mr DAVID HARRISON****Director, Government and Corporate Communications, University of Western Australia, examined:****Mr MARK STICKELLS****Director, Energy and Minerals Institute, University of Western Australia, examined:****Mr TIMOTHY MICHAEL SHANAHAN****Principal Adviser, University of Western Australia, examined:**

**The CHAIR:** On behalf of the Economics and Industry Standing Committee, I would like to thank you for your appearance before us here today. This hearing has been convened to enable the committee to gather evidence for its inquiry into technological and service innovation in Western Australia. You have been provided with a copy of the committee's terms of reference. At this stage I would like to introduce myself and the other members of the committee here today. I am the chair, Ian Blayney. With me is the deputy chair, Hon Fran Logan; committee member Hon Terry Waldron; and Peter Tinley. The Economics and Industry Standing Committee is a committee of the Legislative Assembly of the Parliament of Western Australia. This hearing is a formal procedure of the Parliament and therefore commands the same respect as is given to proceedings in the house itself. Even though the committee is not asking witnesses to provide evidence on oath or affirmation, it is important that you understand that any deliberate misleading of the committee may be regarded as a contempt of the Parliament. This is a public hearing and Hansard is making a transcript of the proceedings for the public record. If you refer to any documents during your evidence, it would assist Hansard if you would provide the full title for the record.

Before we proceed to the inquiry's specific questions that we have for you today, I need to ask you the following: have you completed the "Details of Witness" form?

**The Witnesses:** Yes.

**The CHAIR:** Do you understand the notes at the bottom of the form about giving evidence to a parliamentary committee?

**The Witnesses:** Yes.

**The CHAIR:** Did you receive and read the information for witnesses briefing sheet provided with the "Details of Witness" form?

**The Witnesses:** Yes.

**The CHAIR:** Do you have any questions in relation to being a witness at today's hearing?

**The Witnesses:** No.

**The CHAIR:** Before we ask you questions, do you have an opening statement?

**Mr Shanahan:** Thank you, Chair. On behalf of the university, can I say how pleased we are to appear before the committee to talk about this very important topic. We also feel it is rather auspicious to be meeting today with the committee in light of the announcement yesterday about the discovery of gravitational waves. Our colleagues at the university have contributed to that global effort of discovering and proving Einstein's theory is correct.

**The CHAIR:** Apparently, Peter was there yesterday at New Norcia when they discovered it!

**Mr P.C. TINLEY:** I have got that sort of pull! Pardon the pun!

**Mr F.M. LOGAN:** All those years and he just turns up for an hour and does it!

**Mr P.C. TINLEY:** I do not know what they are on about!

**Mr Shanahan:** We are perhaps being somewhat lighthearted about that, Chairman, but it does illustrate that Western Australia can contribute to global efforts with science and innovation, and that is something that is globally significant and something that we should celebrate. I suppose that is one of the issues that comes up when you talk about innovation, and science in particular—perhaps we do not celebrate and foster the heroes that contribute to our performance in that area in the same way that we might in sport, no matter how deserving sportspeople are of that recognition. I think that is, if you like, jumping to the end, one of the roles that the state government and, indeed, the federal government can play in terms of recognition of those contributions and elevating the profile and status within the broader community of those sorts of efforts. So, perhaps lighthearted, but I think a serious and very timely example of that.

<011> K/1 [11:15:27 AM](#)

Indeed, preparing for the committee this morning, it is really a bit of a moment in time where there is a lot of discussion about innovation. The federal government's emphasis on that, and the Prime Minister's emphasis on that, has got everyone in Australian society talking about it. I did hear—perhaps I better not say that; I do not want to cast any aspersions either on ourselves or on the committee—but certainly I think Noel Pearson used a very colourful phrase to describe that when he addressed the National Press Club the other day when he said that every parrot in the pet shop was talking about innovation. When you go around and talk in the circles that we move in, talking in the private sector, in the not-for-profit community sector, everything seems to have “innovation” as the word that now comes before every other word in the sentence because that is, if you like, the national conversation.

**The CHAIR:** The same parrot was talking about microeconomic reform when Paul Keating was Prime Minister!

**Mr Shanahan:** Yes. I suppose once again that is just really to underline that innovation is a very timely topic of discussion. It has now been elevated in the national discussion, not just within Western Australia. Happily, the University of Western Australia has now been working to elevate our performance in this space for the last several years and we feel that we have refreshed, renewed and strengthened the ways in which we can encourage the capability of the university to be applied to achieving a higher level of innovation, engagement with industry, and to promote more of a culture of entrepreneurship within the university, within our graduates, and with the parties and stakeholders that we work with. In our submission we have listed some of the initiatives that we have been undertaking under the broad banner of both UWA Innovation Quarter, or UWA IQ, and also within the work of the Energy and Minerals Institute which resulted in the “State of Mind” publication, which was launched, I think very importantly, in the region—it was launched in Singapore. It is really trying to place Western Australia, the University of Western Australia and our partners, not just in the context of our local market but in the context of the global marketplace, particularly in our region. We share the same time zone with 60 per cent of the world's population. This is all a recognition of the context within which we are operating.

There is a lot of activity also in Western Australia. I think the buzzword is “innovation ecosystem”—places like Spacecubed and innovation entrepreneurs. Our view is that this is very much a high tide of activity. There is a lot of different people working in similar ways and promoting this idea of innovation. The university is looking to work with all those people. Whilst there are so many people working in this space, it is important that we work in a collaborative way, not in a competitive way. We are reaching out to all of those groups to look at how we can work with them.

<012> A/3 [11:19:10 AM](#)

[11.20 am]

I know that one of your committee members, Peter Tinley, was at the university a week or so ago at our innovation base camp, and that was a real-life example of how we are reaching out to work with all those different groups.

We have a very good track record of invention and innovation, and high levels of industry engagement, particularly with the mining and oil and gas industries. That said, there is lot more that we can do, and a lot more that we should do, to increase our innovation, our entrepreneurship and our engagement with industry across a broader range of sectors, and that is something that we are particularly addressing.

When you look at all of that, what role can the state government play to encourage innovation? In our submission, we have listed five or six recommendations for the committee to consider. We see the role of the state government in providing leadership within the innovation system as the most important thing that the state government can do. To go back to my opening comments, how can we elevate the status of that issue? That is a signal that is sent from the top. If you look at what has happened with the federal government with the ascension of the new Prime Minister, his emphasis on that—with relatively modest resources, you would have to say—has changed the whole national conversation about that. That is, once again, a real-life illustration of what can happen. Indeed, other state governments have been very successful. The state of Queensland had a very successful regime when Peter Beattie was the Premier with Smart State and a lot of emphasis on biotechnology and some of their comparative advantages.

Another area that we have suggested for the committee to consider as recommendations would be to look at the integration of innovation into all our activities in research and education from the university's perspective and not just to view it as something that sits off as a separate thing. Innovation needs to imbue and saturate a whole range of existing activities in the university's business in the case of research and in the case of education. It is not just about creating another silo and calling it innovation. It is about how innovation integrates with all the other work that we are doing. I suppose from our perspective, looking at how we work with business and the not-for-profit sectors, it is how they view innovation, and, once again, how it is integrated in their business.

Support for infrastructure for innovation is another role that the committee might consider. So rather than, I suppose, picking winners, we need to look at what is the innovative infrastructure, particularly in research and education, that the state government might bolster its investment in. That is not picking particular winners, but creating the broad conditions for higher levels of innovation. Providing access to research, particularly for small and medium-size enterprises, is a challenging issue for everyone involved in innovation. At UWA, we have probably skewed more towards the larger companies when we have worked with them, particularly in the oil and gas and the mining space. Creating partnerships with industry that lead to innovation in research and in education have potentially high transaction costs. That is my own personal view about some of the challenges around SMEs. We have recently signed a memorandum of understanding with the Chamber of Commerce and Industry called "Mutual Opportunities 4 Us", which is referenced in our submission. Through that relationship with the Chamber of Commerce and Industry we are hoping to broaden our relationship with the chamber's members, which include a range of SMEs that the university previously has not had a relationship with. We know that that is a gap. We know that there are some barriers to engaging with SMEs in terms of how the business views and values innovation and the resources that they have for that, and what the university can do to address that. I see some of our colleagues in other universities. ECU has, I think, a very good handle on that, and to their credit they are looking to address how they deal with those things. So, there are different paths, but access to research for SMEs in that innovation context is something that we should address.

Another issue is industry training for innovation and getting our researchers to work more with industry. We believe that will give our students and academics a deeper insight into the business drivers of the corporate sector and how their research and the way they think about things will result in value creation within those businesses and, indeed, within the not-for-profit and the community sector.

Although I think this committee is interested primarily in science and innovation, it is worth emphasising that at the university we see innovation and social innovation as an equally important element of our mission. There is a range of different structures within the university that we are seeking to activate to increase our level of innovation in the not-for-profit sector. There is an existing Centre for Social Impact, which looks at social entrepreneurship models. It runs a very impressive Aboriginal business conference each year. We have recently announced that we are hosting the McCusker Centre for Citizenship and have appointed a director, Michelle Scott. So, through the work that we are doing with the innovation core, we are working very closely with those. We also have another memorandum with one of the not-for-profit sector major service delivery groups, which we will be looking to announce in the not too distant future. Although this committee is particularly focused on industry and innovation, I want to stress that we see this as a continuum. There is a lot of value that can be created for society through working with those groups. I must say that in all of the conversations that we have had with those groups, they are equally enthusiastic about participating with us.

Finally, could I say, chair, that having targets and setting performance expectations against this whole area is something that the state could helpfully do as well. That is a conversation that we are having within the university, which has traditionally measured performance and outcomes in a reasonably linear way around research publications. A very significant agenda is being developed internationally and within Australia about university research being more measured on impact, and industry engagement is part of that. The university is in the process of examining how it measures itself in terms of its research. I think those sorts of trends are global trends. They are certainly very well ventilated within Australia. We see that the Australian Research Council and the NHMRC block grants over the next several years will likely start to elevate the criteria of impact and industry engagement for researchers to be successful in those applications. The university itself will need to look at, and is in the process of a conversation about—it is not finished yet—how we should react to that in terms of how we measure the performance of our academics in that area.

Chair, I hope that is a reasonable summary of the university's position on innovation, and my colleagues and I would be delighted to answer any questions or comment on any of the points that the committee might like to raise with us.

**The CHAIR:** Thank you very much.

**Mr F.M. LOGAN:** I want to go to the last point that you made. I notice that none of the submissions that we received from the universities include reference to iPREP, who we received a submission from, and who came to the committee and made a very good contribution on the work that they do. As you know, iPREP is a collaboration with the five universities, where they basically join industry to the universities, with PhD students going on out a six-week basis. It is unfortunate that you did not refer to that, because that is a brilliant model of, firstly, collaboration between the five universities, which as you know is always very difficult, and, secondly, the very fact that they have feet on the ground and are doing things by getting PhD students working with industry, even if it is for only a six-week period, and some great successes are coming out of that.

<013> E/C [11:29:44 AM](#)

[11.30 am]

Going to the very point of what you are talking about—I put this to ECU earlier when they were in front of us—and that goes to the issue of tenure of academics, and how it is possible—and you did talk about UWA looking at that—how the issue of tenure and the measuring of academic success of

individual academics by papers published can actually be changed to ensure that there are other factors that are taken into consideration if they choose to actually move from academia into work, regardless of where that work is, in industry, and then back again. The tenure issue, as you know within UWA, is a very sore point and most academics are loath to leave their position because of the unlikely chance of actually moving back there, if they were to move into industry. Obviously, that conversation is underway. What are you actually saying in your conversation, and what would you be putting forward to the federal government to look at changing?

**Mr Stickells:** I acknowledge that iPREP is something that the university supported. The coordinator of iPREP is a former colleague of mine working in the CRC program. Natasha is an excellent lead through ECU and we have been supporting that, and it has got support through our research enterprise office, which is the lead contact point. It is a good initiative and it is supported by other programs where we have been placing masters students in industry through our engineering faculty for a decade or so, and I think extending that to other institutions is also something that we are looking at, so it is a positive model.

**Mr Harrison:** Moving on to the impact agenda, I will make some remarks, and I am sure my colleagues will add to those as well. It really comes back to the issue, and there is a broad range of issues that the university is dealing with, which comes to the changing world and the changing market. If you look at the impact agenda, the expectations that the community, the government, industry and others expect of their public institutions, their public universities, around the research translation, the research impact, and how that will help build community prosperity, help businesses grow, develop new emerging markets—translate that knowledge into everyday use—that is changing at a rapid rate, and it still is changing. There is not a clear view right now as to how that impact agenda will work. We know it is coming, we know it is inevitable, but this is a sector-wide issue that all universities around the country, including UWA, are beginning to think and work through, but it will be also responding to what governments and funding bodies are looking for as well. That is an ongoing discussion, but I do not think that we can underplay how significant the change is going to be in the way the university operates and functions. So it would really be looking at, essentially, the position descriptions of everyone in the university. At the moment there is a heavy weighting around performance and performance measurement for our researchers and academics around papers published. That is an important measure, and it always will be an important measure, but just as important is, for example, appearing before government and parliamentary inquiries, helping governments and decision-makers on public policy and inputting into that agenda. It might be doing community events, community engagement; it might be partnering with industry to help them solve some of their challenges. So it is looking at a broader suite of arrangements for how we recognise and reward our people, and also what the funding bodies expect as return on investment for their funding. Mark and Tim, do you have anything more to add on that?

**Mr Shanahan:** If I could add, the traditional block funding grants will change the behaviours of the researchers if they change their criteria. We think that is going to happen. We are very certain that that will happen.

**Mr F.M. LOGAN:** Following the UK model?

**Mr Shanahan:** Following along the lines of the UK model, and elsewhere in the world. I think, from a business perspective, you have got to prepare for that change. If you go too early, you will be out of the money, because you will be rewarding people on a different basis from the rest of the marketplace. If you go too late, you will not be competitive because you will still be working on the old structure. Government is sending some signals of certainty around what is going to happen with those block grants. There is a range of different ways that have been considered as to how you can reward impact. One would be that you are actually winning grants, so that in itself would be intrinsic, but you can look at things like the current Chief Scientist for Australia, Alan Finkel, has

published a range of opinions around using things like citation equivalents, so, as Mr Harrison said, if you present a paper to an industry conference or you work with an industry grant, which might not get the same weight in the current circumstances, it might get an equivalency of a publication in a high order journal. That is the sort of conversation that is going on. Mr Tinley was at our event last week and, I think, heard the vice-chancellor speak very passionately, in summing up the event, about the reality that the university faces. As the leader of the university, he left no-one in any doubt that this was something that the university was addressing very seriously. He also made the point that commercialisation and innovation, as one of the other panellists at that event said, is a team game and that the current way in which we reward academics is much more individual. You have got to look at this as something that also recognises that the researcher as an academic is working within a team, and how that team performs has got to be a factor in how you assess that. It is complicated, but the conversation is well underway. The conclusion is not known yet, other than that it will be something different than what it is today.

**Mr T.K. WALDRON:** I am sort of going back a bit, and jumping a bit if that is okay. One of the things that has come through with the submissions and the people we have spoken to is very much that connection between academia and industry, which we have been talking about to a certain extent. Your submission, I think, painted a picture of extensive collaboration with industry. Could you expand on how you actually directly interact with industry and how important it is to you? I notice in this little booklet that Dave handed out, you have got this UWA CEED program, where 140 students are placed with industry. Fran mentioned iPREP, which I was really impressed with as well. Is that a similar type program? Perhaps you could just expand on what you were doing there.

**Mr Shanahan:** Maybe I could take CEED, and Mark, as the director of the Energy and Minerals Institute, might like to talk about our broader corporate relationships and the value of those. CEED is a 20-year program that the university has been running, primarily in the engineering and science areas.

**Mr T.K. WALDRON:** Is that funded by yourself?

**Mr Shanahan:** It is funded by industry. Industry funds an undergraduate or honours student research project. They fund the student to work in there while they are doing the project. It is supervised by a professor, and the company pays for the overheads of the program as well as for the student and the professor.

**Mr Harrison:** It is very much fee for service.

**Mr Shanahan:** It has been going for 20 years, and you have got the numbers there. Over the last 12 months, that was one of the areas within the university's IQ program that we wanted to actually increase the number of CEED projects for industry-funded research for students, and we wanted to diversify it so that it was not just in engineering and science, but was across a broader range, including the social sciences as well. As we did that, we actually discovered that there were all of these different things that the university was doing from MBA student placements, so there was a huge variety of these sorts of arrangements, and some of them were fully funded like the CEED program is, and others were heavily subsidised by the university. What we are planning to do in the next 12 months is to have a bit of a huddle at the university and look at all of them and say, "How can we actually perform better?"

<014> I/3

[11.40 am]

The price point for the CEED program is also an issue if you want to apply it into the social sciences because the consulting, engineering, oil and gas and mining companies that have been largely the supporters of that program have got perhaps deeper pockets than not-for-profit or smaller or medium-sized businesses. I will perhaps take the opportunity to also mention that all

universities have a very large number of adjunct professors, which are usually people from industry that come and teach or do research at the university. At UWA, as part of the work that we have been doing over the last 12 months, we have identified that we have well over—I am under oath while I am at the committee—in the order of something like 1 400, of which most of them, about half of those, are in the medical space because of the relationship we have with the Health Department. But there are about 600 or 700 industry people working at the university, working with our students, working in resource —

**Mr T.K. WALDRON:** So, Tim, am I getting the wrong impression from submissions and other people talking? My impression is that we have a real problem linking between academia and industry, but this morning, talking to yourselves and other universities, do you think you do that pretty well? That is why I am asking you.

**Mr Shanahan:** I think we could do a lot better, and I think in the engineering space and in the oil and gas and mining space, that has really been—I am personally not necessarily objective about that—I think we have done a good job there, and I think that is a global —

**Mr T.K. WALDRON:** But there are other areas of opportunity in that?

**Mr Shanahan:** I am stealing Mark's thunder now, but I think globally you can benchmark that against the US or anywhere in terms of our relationships with those companies, and the work that we do with them is excellent. But there are opportunities to make that more broadly, and that is really now part of my role because I have changed from energy and minerals to this broader role. Mark?

**Mr Stickells:** Chair and committee, thank you. Just an additional point about the CEED projects: they are very meaningful industry projects. Of the work of three of the students in the last round of projects, we are negotiating with a major mining house about taking some of the IP they have identified in those projects and applying them to the company. I cannot disclose the company, but it is in the area of machine moving and automation, and that is real value coming out of that student project, working with industry, getting taken on board. The industry engagement and collaboration question is something I am very passionate about and I have spent probably the last 15 years working in Western Australian-led national joint ventures, industry alliances and more recently with the university directly through the Energy and Minerals Institute, and that has been in both agriculture and in energy and mining, so I feel very strongly about that. There are quite deep bones in Western Australia between universities and CSIRO in certain areas that I think is something we should be quite proud of nationally. UWA's efforts around industry engagement have really helped build a strong foundation in the areas Tim mentioned in engineering and resource sciences, and I think is helping change some of the ways our contemporary academics work.

With regard to Hon Fran Logan's question around academic tenure, a number of our academics are taking their sabbaticals in industry, so the Chevron professor who is noted in here spent half of his sabbatical at Imperial College in London and the other half at Richmond's laboratories, working with Chevron. His chair is also funded by Chevron and his research group is funded in that way, but he is also weeding in ARC competitive fundamental science work and has a great team of PhD students that are picked up by industry, so there are great examples of this positive reinforcement of industry engagement, great science, and working to build the sort of talent pipeline that is so important. I think it is a positive story. I do not think we celebrate it enough, and there is a great opportunity for government and the state narrative to change around our expertise and our role in economic and social development. I think that is one of the things we tried to capture in the State Mining Corporation.

**Mr Harrison:** If I could build on both Tim and Mark's comments, yes, I think we have a very good track record and we do very well in industry engagement, and yes, there is room for improvement. I think if you look at the universities—not just UWA but probably all universities—the engagement at the moment is probably more heavily geared towards big business and large industry, because



there is a cultural connection there. We are a large organisation with \$1 billion in turnover a year, 4 000 staff, a large campus and many divisions, departments and all of those things. We can have those conversations with big business because they are structured and set up and talk the same language, but if we look at where the growth opportunities and the potential into the future are, it will be those SMEs, and probably starting more at the medium ones and working your way down. They find it difficult to connect and engage at times with the university because they are not as big; they do not have the large departments, the bureaucracies, the arrangements, so where do they turn to and how do they engage with the university? That is a critical issue that the university is dealing with through IQ: how do we make ourselves more approachable? Peter, when you were at the base camp event last week or the other week, that is exactly what the vice-chancellor spoke about. We may believe that we are approachable, open for business and happy to do business and partner with whoever, but if the perception is that we are unapproachable or it is difficult to engage with us, then that is the perception; you cannot change that. So we need to work internally to think about how we make it easier, how we open our doors, and how we rake the path that leads small and medium businesses and others to the right part in the university, and that is one thing that IQ is heavily geared towards. I do not want to downplay the comments that particularly Mark has made about the success story, because there is a very good success story, but at the same time I do not want the committee to think that everything is rosy and there is not more work to do, because there is a lot of work to do, and we acknowledge that.

**The CHAIR:** Yesterday, someone—it might have been one of our guests at the back—spoke about Scandinavian universities coming up with a position they call a facilitator, and that is entirely what they do: to try to make linkages between industry and universities.

I have a follow-on question about oil and gas. When we were doing the work on FLNG, we kept hearing about the centre of excellence in FLNG, and we kept hearing that Perth, Houston and Aberdeen were the big three in the oil and gas industry, but it is obvious to us that, not unexpectedly, there have been pretty savage cutbacks in the oil and gas companies and one of the majors who makes a big thing about their research in Western Australia will not even give us a submission. We are sort of sitting here and it is a bit like our state economy, where so much of our money comes from the resources industry. When it is ticking over, we're doing all right, and then when it downturns, we sort of get this expanded impact because it really hits the state budget so savagely. Just from having sat here and listened to all this stuff, I have started wondering over the last year or two whether we were sold a bit of a pup and these global oil and gas companies actually are not all that interested in developing their research centre here in Perth; it was just a line to keep us quiet for a while, and now they are focusing more on their home bases.

**Mr F.M. LOGAN:** That is all yours, Tim!

**Mr Shanahan:** Well, there is a saying that money talks and —

**The CHAIR:** Bullshit walks.

**Mr Shanahan:** Yes, so I think there has been very significant and material investment at UWA from the oil, gas and mining companies over the last six or seven years, which has been globally significant. This specific example you are mentioning around floating systems, which the universities really sort of, as a strategic priority, have tried to work with the companies around, resulted in a couple of chairs in floating offshore engineering which Professor David White fills, which was funded by Shell and the gas process engineering chair, which was endowed by Chevron, so that is a perpetual endowment of that chair and that group, and gas process engineering. Both of those professors were successful—it is in our submission—in receiving ARC funding, collectively, of, I think, around another \$10 million.

<015> P/3 [11:49:37 AM](#)

It is a bit like an analogy that you have gone through the construction phase and you have invested in the productive capacity and in those two examples there is research productive capacity that the

companies have invested in that will go, in the case of Chevron, into perpetuity. Would we like more and do we think that in the next few years we are going to get less because of the oil price where it is? I think that is just realistic; we are going to get less and it is going to be tougher times. In those circumstances, you really then need to concentrate on the relationship and understanding what the business drivers for the companies are. I do not think the university has any feeling of a sense of entitlement to investment from those companies. We need to prove that we have globally significant researchers, we understand the drivers in their business and we can create value for them. That is a different view than a philanthropic view, or even a public policy view that the government says, “Of the gross collections that we make from you as a company, you will either direct them in this way or we will collect them from you and redirect them for you.” There are other jurisdictions around—you mentioned Norway—where the government collects from the company or creates a condition on the company’s operations that they would have a more locally embedded supply chain. I think in the areas that you have mentioned, chair, we do have a globally significant capability that can meet those companies’ needs. Would we like to see more? Well, of course we would. The role that the Energy and Minerals Institute has played in other areas of the university has been to play that facilitating role that you mentioned before.

[11.50 am]

**Mr F.M. LOGAN:** David, I come back to the sort of summary of the two points that you made earlier on the contributions from the other two that were made earlier on that goes to the collaboration with industry that you were just referring to. I think that the way you put it sums it up beautifully in terms of the way UWA has collaborated. If you look at the work that Tim and his team have done over the years in working with the oil and gas industry and the minerals industry which has been so successful, and it has been very successful, it has been at the top end of town with the big companies. I think that the way that you described why it has been like that is obvious and I think that is absolutely correct. But you just said it right then, Tim, that it does appear, looking from the outside in at UWA, that the work that has been done by the university with the oil and gas industry and the minerals industry has been creating value—that is, improving their processes. You can call that innovation or you can call that finding efficiencies, but is it the innovation that we are talking about today? Is it actually finding completely new ways of doing things and processes? I am not too sure. It will be up to you guys to answer that. I cannot answer it.

Moving on from that, on the relationship with the SMEs, I noticed in your submissions you talked about working through the Chamber of Commerce and Industry as part of that process. Have you also ever thought of working with the industry associations themselves, who are far closer to the SME sector? People like, for example, the Housing Industry Association; the Civil Contractors Federation; the Australian Furniture Association, which is actually a very fast-growing industry in Western Australia, I might add; and the Australian Steel Institute. All of which are much closer to their membership in terms of what is going on than the CCI, which is an overarching group.

**Mr Harrison:** Could I maybe pick up on the first point around innovation, deputy chair, and then I might refer to Mark and Tim to talk about industry associations and the work of IQ. I think your question poses a further interesting question for this committee to consider, and that is: what do we mean by innovation? Innovation is a very broad, widely used term but what, as a state, do we mean by innovation and what is innovation going to mean in Western Australia, because it can mean anything to anyone? I think this comes back to the role of the state that Tim talked about in his opening comments, and it is a question that I have posed repeatedly to myself and others: in this innovation ecosystem that we talk about, what is the role of government and the state government in particular to mobilise, encourage, incentivise and reward the types of innovative behaviour that we want for this state? But to answer that, you have to probably answer the more fundamental question: what is innovation going to mean in Western Australia? My personal view is that if we try to be everything to everyone and try to do everything, we will get the vegemite effect; we will just spread it so thin. Where is our value add, where is our comparative advantage and what are we actually

going to contribute as a state to a broader innovation agenda? I think that is an important consideration for this committee, which the university is really pleased to be able to, hopefully, help you in to guide what is the state's innovation agenda or strategy: What is the role of the state? How can the state bring the large number of players that are on the field doing very, very good work together to give us scale, to give us advantage and to give us impact? I think it does not answer your question—it probably poses another question to your question—but for us I think that is an important missing piece in this whole jigsaw. There are a lot of people doing a lot of very good work, but is there a single goal or vision that we are all putting our shoulder to to achieve that aim? I think that is a missing piece, but that is going off on a slight tangent. On the industry association question I might refer to Mark or Tim or both.

**Mr T.K. WALDRON:** Just with that, you talked about the base and it is about people at the end of the day, isn't it? A lot of people think about innovation as science and technology, but what about the arts and recreation and those areas? When you are talking about culture, does the university see that as important as well?

**Mr Shanahan:** Absolutely. Ted Snell, who is the director of our cultural precinct, is heavily involved with our IQ. We had not mentioned that specifically, given your terms of reference, but clearly the university hosts a very high range of creative disciplines. You know that the Perth International Arts Festival was launched yesterday. The university is very active in that space and that both inspires and underpins a whole range of things—bioimitation, for example. There is a whole range of things where it does need to be linked. Its role in healthcare and making people feel better—any and all of it.

**Mr T.K. WALDRON:** That is important for us to understand as a committee.

**Mr Shanahan:** We see it very centrally as part of what we are doing.

**Mr Harrison:** Did you want to add to that, Mark?

**Mr Stickells:** No. I think it is a great question and something I feel very strongly about. I would argue that the Perth International Arts Festival is probably one of the most successful spin-offs of the University of Western Australia if you want to use contemporary language. It was launched by the university in the 50s and it is an important part of our local economy and the arts.

**Mr T.K. WALDRON:** It was innovative at the time.

**Mr Stickells:** Absolutely.

**Mr Shanahan:** If we are getting close to time, chair, I wonder if I could make a couple of points before we finish.

**The CHAIR:** Yes, good idea.

**Mr Shanahan:** Firstly, I would like to specifically talk about the National Innovation and Science Agenda, which was launched by the Prime Minister a couple of months ago. The total package is worth \$1 billion. From a Western Australian perspective and consistent with what we have put in our submission and what we have talked about today, one of the roles of the state government should be to ensure that we get at least 10 or 11 per cent of the value of that package and that we work together to secure that. We should have a “team WA” approach to achieving our participation in that program. I suspect that at both a state and federal level the emphasis on innovation is going to grow. That this is something that if we can get right now and if the role of the state government in leading that and facilitating that is a good, if you like, piece of leverage to get everyone to come together, certainly, from a UWA perspective we view that is something we should be working together on; it is not something that we should be prosecuting and competing against each other on.

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[12 noon]

The role of the CSIRO, which has been particularly successful in Western Australia as opposed to other jurisdictions, should not be underestimated here in Western Australia. The CSIRO has an interesting view because it is a national organisation manifesting in a state presence, but it is a very powerful collaborator for our institutions here in Western Australia. I feel we have an excellent relationship with the CSIRO. That is something that we can leverage.

We have not talked about access to capital much today. In the innovation to commercialisation space, you have the valley of death where you need to have the human capital as well as the money to get across that gap. That has always been one of the key issues that commentators in this space have pointed out; that is, as opposed to Massachusetts or Silicon Valley, Western Australia has lower access to venture capital, unless perhaps you are a goldminer, which we are much more prepared to fund and take a risk on. The university, through the Group of Eight, is currently looking to raise a \$200 million venture capital fund. As part of the national science innovation agenda the federal government has charged the CSIRO with establishing a \$200 million fund. There are existing biomedical research funds, like the medical research commercialisation fund—the MRCF—so there is a growing interest in this. Some of that is money that is there, like the MRCF, but there is currently money that we are setting our cap for. The state government should contemplate how it can help to facilitate access to capital. My final point is that we see the state government in that role of leadership and facilitation to really help the state to perform at its optimum in this emerging area now.

**The CHAIR:** Thanks for that. That is a good way of summing it up.

Thank you for your evidence before the committee today. A transcript of this hearing will be forwarded to you for the correction of minor errors. Any such correction must be made and the transcript returned within 10 days from the date of the letter attached to the transcript. If the transcript is not returned within this period, it will be deemed to be correct. New material cannot be added by these corrections and the sense of your evidence cannot be altered. Should you wish to provide additional information, or elaborate on particular points, please include a supplementary submission for the committee's consideration when you return your corrected transcript of evidence. I expect that we will come back to you with more questions; are you happy with that?

**Mr Shanahan:** Absolutely.

**The CHAIR:** Thank you very much for your time today.

**Hearing concluded at 12.02 pm**

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