



COMMONWEALTH OF AUSTRALIA

Official Committee Hansard

**HOUSE OF
REPRESENTATIVES**

STANDING COMMITTEE ON SCIENCE AND INNOVATION

Reference: Pathways to technological innovation

WEDNESDAY, 18 MAY 2005

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HOUSE OF REPRESENTATIVES
STANDING COMMITTEE ON SCIENCE AND INNOVATION

Wednesday, 18 May 2005

Members: Mr Georgiou (*Chair*), Mr Quick (*Deputy Chair*), Mr Hayes, Mr Jenkins, Dr Jensen, Miss Jackie Kelly, Mr Price, Mr Tollner, Mrs Vale and Dr Washer

Members in attendance: Mr Georgiou, Dr Jensen, Mr Quick, Mrs Vale and Dr Washer

Terms of reference for the inquiry:

To inquire into and report on:

Australian technological innovation and pathways to commercialisation, with particular reference to examples of successful Australian technological innovations that demonstrate strategies to overcome potential impediments and factors determining success.

To assist in its inquiry, the Committee seeks to compile a series of case studies of successful technological innovations, and the pathways to commercialisation. Submissions are sought detailing successful examples of Australian technological innovations.

Submissions are also sought with particular reference to successful innovations, on issues such as:

- pathways to commercialisation;
- intellectual property and patents;
- skills and business knowledge;
- capital and risk investment;
- business and scientific regulatory issues;
- research and market linkages;
- factors determining success; and
- strategies in other countries that may be of instruction to Australia.

WITNESSES

BRADLEY, Dr Mark Philip, Chief Executive Officer, Australian Technology Park Innovations Pty Ltd.....	38
DUURSMA, Mr Martin, Vice President, Advanced Products, Citrix Systems Inc.	50
GERACE, Mr Michael, Director/Web Developer, Thehairstyler.com	65
GRIFFITHS, Mr Matthew, Business Adviser, COMET Program, AusIndustry	24
HAWTHORN, Mr Hamish, Director, Life Sciences and Technology, Australian Technology Park Innovations Pty Ltd	38
JOHANSSON, Mr Bruce Michael, Chairman, Gazelle Monitoring System Pty Ltd	65
KING, Mr Jonathan (Jon) Gerard Lovell, General Manager, Commercialisation, Commonwealth Scientific and Industrial Research Organisation.....	1
KOCIUBA, Dr Katherine, Senior Manager, Commercialisation, Corporate Business Development and Commercialisation Group, Commonwealth Scientific and Industrial Research Organisation	1
LINDOP, Mr Charles, Director, Business Programs, Australian Technology Park Innovations Pty Ltd.....	38
MORRIS, Mr Brett John, Chief Executive, Neo Technology Ventures Pty Ltd.....	24
NELSON, Mr David Andrew, Managing Director, Divergent Capital.....	24
ROSE, Dr Reuben Johnston, General Manager, Livestock Production Innovation, Meat and Livestock Australia	58
STEELE, Dr Jack, Chief of Staff, Corporate Business Development and Commercialisation Group, Commonwealth Scientific and Industrial Research Organisation	1
STRANGIS, Mr Pasqualino Visconti, Manager, Industry Policy Unit, Australian Trade Commission.....	65
TREGEA, Mr John Andrew, Technology Director, Debraneys Pty Ltd	65
WILLIAMS, Dr Keith, Founder Director, Proteome Systems	18
WOODWARD, Mr Marc Xavier, Executive Director, Neo Technology Ventures Pty Ltd	24

Committee met at 9.55 am

KING, Mr Jonathan (Jon) Gerard Lovell, General Manager, Commercialisation, Commonwealth Scientific and Industrial Research Organisation

KOCIUBA, Dr Katherine, Senior Manager, Commercialisation, Corporate Business Development and Commercialisation Group, Commonwealth Scientific and Industrial Research Organisation

STEELE, Dr Jack, Chief of Staff, Corporate Business Development and Commercialisation Group, Commonwealth Scientific and Industrial Research Organisation

CHAIR—Welcome. I now declare open this public hearing of the House of Representatives Standing Committee on Science and Innovation. The inquiry arises from a reference from the minister, and to date there have been 77 submissions. This is the first public hearing. Although the committee does not require evidence to be given under oath, these proceedings are to be treated as part of the proceedings of the House, and any false or misleading evidence is a serious matter and may be regarded as contempt of the parliament. Do you wish to make a brief statement before we start?

Dr Steele—Chairman, we are in your hands as to how you would like to handle it. We have a short presentation to make if you wish to hear that.

CHAIR—Go for it.

Dr Steele—Members of the committee should have a brochure that contains some slides that we will talk to as we go through. We thought it might be helpful to the committee for us to put in perspective CSIRO's commercial business operations in terms of our strategic plan and our aims when we conduct commercialisation activities. To give it a bit of pointedness we will talk through three examples which highlight different aspects of the sorts of activities that we conduct when we do business development and commercialisation. To give you a little bit of flavour, a couple of those examples were included in the appendix of the CSIRO submission. If we were to turn to the second page.

CHAIR—The general outline is fine—go for it—but our particular interest is in the dilemmas and the impediments that you identify in your submission.

Dr Steele—We will touch on those as we go through and highlight them.

A PowerPoint presentation was then given—

Dr Steele—To give you the perspective, CSIRO's strategic plan has a number of objectives in the commercialisation and business development space. They include fostering relationships with our key clients, which include the rural development corporations and state governments, and also the large commercial corporates, which are in a slightly different category. We also have the aim of accelerating the growth of technology based SMEs. In terms of CSIRO's management of its intellectual property and the patent and equity portfolios, intellectual property revenue

streams can then be reinvested in research and development activities; in particular, with an increasingly high level of governance in the way in which we conduct those activities.

The financial scenarios that are in the back of CSIRO's strategic plan do have financial outcomes expected from these activities, and they include over the period up to 2007 increasing the amount of co-investment and contract service revenue CSIRO receives by approximately \$71 million per annum in the year 2006-07. It is also to grow revenues that come from our intellectual property commercialisation activities, and this is an item that has been fairly well described in the press. We have some fairly good stretch targets that take us from an initial base down in the low 10s up to approximately \$72 million by 2006-07. As we talk to our clients, that commonly comes up, so I imagine that is probably something you have heard about quite a bit as well.

We can talk about some specific examples of previous CSIRO commercialisation, but they extend from Aeroguard, where fundamentally it was transferred to the marketplace and products came out of it—but guess what, CSIRO and therefore the taxpayers receive no revenues coming out of that which have been reinvested in R&D activity—through to our involvement in spin-off companies like GroPep Ltd, where we had an equity position and we have sold down that equity position and returned those funds into our R&D base. There are other examples like licensing activities where a large amount of the cotton that is actually sold in Australia is out of CSIRO research incorporating intellectual property from a number of places.

To give you an idea, this year CSIRO's return revenues coming back from licences to cotton will be approximately \$6 million per annum, so it is quite a significant commercial activity in itself. The slide which starts with, 'Evolution of technology transfer at CSIRO' tells you the pathway that we have been on. Fundamentally, we have changed from 1990, when CSIRO was developing intellectual property and sharing it and putting it out into the marketplace, essentially on a non-commercial basis. This was through a period of time when the organisation was driven to get external revenues, partly motivated to get good engagement with the commercial world and other players to the current emphasis on achieving impact as opposed to external revenues. So, at the moment, we are after value creation, and we are particularly after impact, be it in our public sector, public-good driven research, or our commercialisation activities. We are after value pricing in order to return an appropriate return to the taxpayer via CSIRO from those activities that we conduct. We are after impact, and secondarily, we are after financial return.

Mr QUICK—What do you mean by 'value creation' to the ordinary average man in the street?

Dr Steele—Let me give you an example. When we do a body of work with a client, we would like to price that on the basis of what is the value to the client of what arises as a result of the work, as compared to charging a price that is just a cost-recovery price. So, if we do a body of work with a company where there is going to be a \$50 million return, but the work might cost \$5 million, then, if we are co-investing in that scenario, we would want to get a return that reflects the risk that CSIRO is taking on behalf of the taxpayer by contributing to that work. In other words, we want to get a return out of the \$50 million rather than just a cost recovery. Now, there will be other circumstances where we will do work which is just a service provision, and a lot of our activities like contract testing would be that sort of case. But where we are co-investing for

something that involves a significant risk, we would be wanting the return to reflect the value of the output rather than just the cost of us proving that activity.

Dr JENSEN—How successful are you with that at the moment? I remember when I was with CSIRO in the late nineties it was a real problem getting the dollars that the research actually should have received. Companies were loathe to invest according to what the research was worth.

Dr Steele—It is a very good question. The answer to the question is that we are getting mixed responses to that at the moment, which is the evolution of the response that you referred to. So 10 years ago, just cost recovery was already a stretch too far. It depends on the nature of the client as to whether or not you can even do cost recovery, and that is partly referred to in the CSIRO submission. When you are doing business with sizeable corporates and you put on the table that you actually want to have a value-pricing type scenario, it actually precipitates a discussion about the nature of the relationship. As a minimum, if you have that conversation about the relationship, you are already making steady progress. There have been some circumstances where we have been able to get clients to recognise the value of CSIRO's contribution. It is a lot easier to achieve that where you have a co-investor who is not the ultimate commercialiser. So both parties are making a contribution during that phase and you are both standing on the 'we want value for what we have done' point at the negotiating time with the ultimate commercialiser. In doing so with ultimate commercialisers, they usually respect the logic that you are coming up with; however, it is foreign to their previous experience of working with CSIRO, particularly if you go back to that early phase of the share scenario. It is chalk and cheese compared to what the position was 15 years ago.

Mrs VALE—How you actually assess the value that you would like in return depends on each scenario as there are so many variables that you actually have to consider.

Dr Steele—That is absolutely right, and it requires you to have at least lead examples of what the likely implementation of the R&D outputs are going to be, either as a product or a service. You then require a business plan, even if rudimentary, around what that is going to be like in the marketplace and what is truly the value to the provider or seller of that service. You then need to dissect and appreciate what the costs of the manufacture and marketing associated with it are, discount those factors back and then determine the opportunity cost before you make those capital injections. Let us attribute value at that point. As we are saying, it is chalk and cheese to the scenario of just costing a piece of service provision.

Mrs VALE—Yes, because it all really depends on the relationship of all the main actors who are involved, doesn't it?

Dr Steele—It is absolutely dependent upon everybody talking the same language for that conversation to be a constructive one.

Mrs VALE—Yes, interesting.

Dr Steele—So often you have to actually go back and start that conversation. On occasions you can have a false start, and then you go back and start the conversation about the relationships and why we are all here, and the things which are common to our objectives and

the things which are unique to each of our positions and how we reconcile those. So the principles which underlie our business development and commercialisation activity are fundamentally that, as a publicly funded sector research provider, we are usually best positioned in relation to the R&D, albeit a lot of our clients are indeed quite sophisticated. But, on the other hand, the private sector is best positioned to make capital and investment allocation decisions.

We recognise that there will be a moment in the process when we need to transfer the technology to them and specifically design that process and ensure the timing is correct. We do want to have market price negotiations over the value of that intellectual property, as we have just been talking about, and that it is a value-splitting exercise to the extent that we can achieve that outcome. So, Chair, depending on your timing and your feeling about that, we have three examples to go through which exemplify three different aspects of business development and commercialisation activity. In each of these three occasions, they are mostly directed towards intellectual property which has been developed by CSIRO as opposed to early-stage business-development activities.

CHAIR—What I would like to suggest is that we go to your analysis of the impediments, and so far as you can, you weave the examples with the impediments. Can I just say, in order to be of assistance, that the briefing as headline stuff is great but I found it a bit difficult to grasp, so if you can speak, at least for my benefit, slowly and loudly, I would be grateful. I think the committee is particularly interested in ‘more deeply and strategically’, and the structural gaps. I could not quite grasp ‘more deeply and strategically’, but I learned English as a second language, so I look forward to illumination.

Dr Steele—I am just thinking about the neatest way of doing this. We can proceed to the second example, which is the strategic gaps, and take a particular look at that from the perspective of company formation. After we have done company formations, I would like to make some comments about engagement with SMEs. We will then go to a licensing example.

CHAIR—We are going to come back to the concept of ‘strategically and deeply’?

Dr Steele—Yes, we are.

CHAIR—Because that is your lead argument, and I would like to understand what precisely that means.

Dr Steele—Yes, indeed, and I think that will come out quite well in the licensing example. In the company formation circumstance, one of the issues which is a gap in the marketplace at the moment revolves around how to form new companies which have the depth to be able to survive the first three- to five-year period of time. Our take-away in relation to that is that it is perfectly fine for us to put research and development output into the marketplace; the effectiveness with which companies can actually proceed forward to truly become a successful company is often determined by the extent to which they can use that to get capital. There are interventions in the marketplace at the moment to try to get very early-stage companies going, but there is a gap that goes beyond that very early stage that is supported by the pre-seed funds at the up to \$1 million type space to the next phase. I will now ask my colleague, Dr Kociuba, to talk about the PolyNovo example, because it is an example where we have had to fill precisely that gap, and one where we would say there is not a general mechanism or solution available to us.

Dr Kociuba—I will focus more on the dilemmas and impediments as it relates to the establishment of a company called PolyNovo which was spun out about a year ago now. It was born out of a body of work which was developed over a three-year period where it was determined that about \$5 million was required to fund its development through to what we will call just a key commercial milestone. We went to a number of medical device companies and big pharmaceutical companies to try to attract funding to develop this work, but it was clear that they were not interested in such a high-risk project. Our other option was to go to financial investors and the venture capital community. In order to attract financial investors, about six months of work was done by this group to develop a business plan, to try to find a chief executive officer, speak to individual scientists to work out whether or not—

CHAIR—Sorry, who is ‘we’?

Dr Kociuba—The commercialisation group within the corporate BD&C—Business Development—

Dr Steele—So, CSIRO.

CHAIR—Yes, the acronyms are coming.

Dr Kociuba—I will keep them to a minimum from now on.

CHAIR—So, CSIRO, through one of its divisions, decided that an as yet unspecified or unclear project was going to take \$5 million to develop.

Dr Kociuba—Correct.

CHAIR—Then you went to the industries with no luck and then you went to whom and worked out what?

Dr Kociuba—After failing in attracting funding from big pharmaceutical companies, we decided we needed to go to venture capital investors. Before we went down that path, we had to do all the groundwork to make sure that there was actually a business case, so there was about a six-month body of work to do that. In that process, we also had to determine how much money was in fact going to be sufficient to allow the company to hit this key commercial milestone.

CHAIR—This is CSIRO working by itself?

Dr Kociuba—Correct. That is really what we do from day to day.

Mrs VALE—It is your commercialisation group within the CSIRO doing this?

Dr Kociuba—That is right, yes. We did all the cash flow forecasts and went out and looked for management and that kind of thing—a whole range of things. Once we felt we had a very solid business case, we spoke to the traditional sources of venture capital in the biotech space. They typically invest \$1 to \$3 million—that was well short of the \$5 million that we needed—and they usually take 50 per cent of the company for that amount of funding, on average, in the biotech space. Unfortunately they indicated a preference for much later-stage opportunities.

They said come back and talk to me when you have some clinical data, so we had a problem there.

The next stage was obviously to go to the pre-seed funds, because they do like these higher risk opportunities; it falls right in their mandate to invest, but the problem there is that their maximum amount is \$1 million, which gets us nowhere near the key technical milestone. So we had a problem. As it happened with this particular transaction, we received an expression of interest from a group called Churchill Capital, who were a boutique investment bank who had a very extensive client base of sophisticated high net worth investors who were used to investing in biotechnology, IT and also resources. They happened to be majority owners of a publicly listed vehicle called Xceed Biotechnology looking for biotech assets to invest in, and they were able to source that \$5 million very quickly.

To cut a long story short, after CSIRO completed due diligence on the group to make sure they were legitimate and had the right sorts of contacts, and after they had completed due diligence on this business case, we did a deal whereby they invested just over \$5 million and we were able to retain 50 per cent of the company. The terms to CSIRO were extremely favourable. Once that deal was concluded, what was achieved was obviously technology transfer, which is a primary goal of the commercialisation team within CSIRO.

Because the project was now sufficiently capitalised, that project was able to be accelerated, which is important, because there is always a short window of opportunity for technology. You cannot drip-feed these things, you have to give it a good kick, which we were able to do. We were able to attract a very high-calibre CEO who had experience in this particular technology space and in starting up and in establishing new businesses, and he is doing really well. As the PolyNovo team was co-located at the labs at CSIRO, we were able to foster an entrepreneurial culture due to mixing of scientists at the cafeteria or what have you. That is going to be extremely useful for the division going down the track.

Mr QUICK—From start to finish, what was the timeframe?

Dr Kociuba—It was about nine or 10 months.

Mr QUICK—That long?

Dr Kociuba—But that is actually quite quick. Normally it takes a lot longer.

Mr QUICK—The next time another group comes up with a PolyNovo type thing, is it going to be six months next time or four months—

Dr Kociuba—I would say 12 months on average.

Mr QUICK—Even though you have the company hooked in because they have the \$5 million, and you have a tick from them to say: ‘These people at the CSIRO are fair dinkum. They have the idea. We are interested.’ Will the process gradually become shorter or is it still the same timeframe, the same window of opportunity, or does that timeframe get less? Are you gradually decreasing the time, the frustration of the people with the idea implementing that, when finding the bankers?

Dr Kociuba—If you are talking about this same company with the same idea going out and finding further—

Mr QUICK—No, another company, another PolyNovo. Do they have to jump through the same hoops? Is it another 12 months to go casting your net out?

Dr Kociuba—It is a different business case, different technology, different scientists, different risk profile, different exit strategy, different valuation—you have to start it all over again.

Dr Steele—Can I provide a bit of background that will put that in perspective? It just happens that the biomaterials group of that division had already completed a spin-out. They were actually fairly familiar with the issues around formation of a spin-out, and that was Elastomedic. It was done around 1999. Nine months is actually quite quick for this sort of activity, and it is almost impossible to do this sort of activity without there being various points of friction and frustration along the process. This one went like grease lightning, frankly. Spin-outs of this variety would normally, as Kathy is saying, average around 12 months. Some of them can take something like 18 months to two years, depending on receptivity of the capital market, complexities around the intellectual property, and fundamentally getting everybody aligned with what needs to be done.

If we were then to ask the question, ‘What are the impediments and how can we ease those impediments?’ then funnily enough—and without blowing our trumpet—the most crucial impediment relief is to ensure that you have an effective technology transfer team which has the background to do this sort of thing: a team that can come in and is familiar with doing it and can put the various building blocks in line. That is the first issue and there are not many organisations in Australia that have that capability. You would expect CSIRO, as a national researcher, to have that capability, and it does. There are not too many teams across Australia that have that capability.

Mr QUICK—Is that the largest impediment, or is the money the largest impediment?

Dr Steele—No, you do not get to test whether or not money is the impediment until you actually have that part, because you do not last much in the conversation about money. Secondly, sizeable lumps of money are an impediment, and that is one of the take-homes from this. So, if you are after something like capital up to \$1 million, particularly if you are in the half-a-million-dollar space, then there are four pre-seed funds and a number of angels playing in that space. When you are asking for \$5 million, there is a very limited number of places you can go, and that is a serious impediment in the system at the moment.

Mr QUICK—How many players are there in the Australian scene that are \$5 million plus?

Mr King—It depends on the specialisation.

Mr QUICK—A handful?

Dr Steele—Yes, about half-a-dozen, roughly speaking, and they would be in special areas.

Mr QUICK—Once you get over that mark, do you have to go overseas?

Dr Steele—Once you are over that sort of mark, the follow-on funds, it probably gets a little bit easier but there is still a fair gap.

Mr King—There is also a relationship between the stage of development of your technology and the capital available to you, so a later stage, fully developed, fully productised technology has a much greater access to funding at all levels than an early stage technology, if you consider that there is a continuum of technology development. It is much easier to find significant moneys for a technology that is ready for market or is producing revenues because the capital markets segment themselves by their own interests and specialties. It is absolutely true that in, say, the biotech area, there may only be a dozen people who can make a \$5 million plus investment, and they do tend to co-invest, but they will only make that into a reasonably advanced technology; it is hard to convince them in early stage technology. So you have those two metrics going at the same time.

Dr Steele—Your other source of capital as an early stage technology SME is obviously the support from government schemes. This is actually a good example of the ‘strategic and deeper’ relationship issue. Those schemes are very good in the context of specific projects with specific time-limited, milestone-driven objectives, and that is obviously entirely appropriate. Getting a longer term strategic flow that supports the longer term growth of the company is a lot more problematical. So, to take an example, in the PolyNovo circumstance they are demonstrating that that technology works in particular product applications. You can confidently expect that if PolyNovo keeps their nose to the grindstone, they would continue that focus for a five- to seven-year time period.

Let us just imagine a company like PolyNovo successfully gets through those circumstances and is into effective commercialisation with an end client, a medical device manufacturer or whatever. The next question that arises is: do they have further follow-through technology or are they a one-product circumstance? You do not get to be more than a one-product company by letting go that strategic R&D underlying base. You have to actually continue that activity from a fairly early stage of the company’s development.

In relation to biomaterials technology, that is the sort of activity that CSIRO and the university do as their normal activity. It is usually not fully directed towards products, but it is an underlying strategic activity. So the proposal that is included in CSIRO’s document talks about how we can better foster those strategic relationships between SMEs and the publicly funded research providers for the longer haul. The existing government schemes are not directed towards doing that so well because they have understandable rules like the fifty-fifty funding rule, et cetera. It is thinking about ways in which you can creatively solve that sort of problem.

Dr JENSEN—When you have a spin-off company, you are going to get basically those good researchers who have had these ideas to become effectively staff of the spin-off company. There are two questions. The first is: what is the career future for these people, because going into one of these spin-off companies is risky? The other is: what about the corporate knowledge that you are effectively losing because you are getting rid of basically the cream of your researchers?

Dr Steele—I will deliberately avoid going to specific examples because I might get into some staff confidentiality issues. But talking generically, there is a number of ways in which CSIRO could do that. First of all, in a number of these spin-off circumstances, our staff go into the

company on a secondment arrangement or a leave-without-pay arrangement for a defined time period. Various people have different views about how well that works. One interpretation is that we would like them to fully go across the line so that they are 110 per cent thinking about the company; they are no longer thinking about CSIRO. By the way, capital providers usually want that as well. The other view is that until as a scientist you know it is going to be a viable proposition, that is probably not the best way of doing it. You might want to still give 110 per cent effort while you are in the company, but you actually need to maintain your activity for a period of time in the company and develop other expertise within the company to replace you or to do that follow-on work and then come back into CSIRO and continue what may be an altered career pathway or develop the next one.

So CSIRO presently, but for defined time periods, allows that sort of secondment to occur. And, by the way, we are usually talking one to two years rather than anything longer than that. That is one scenario, but there are other scenarios where the staff actually want to fully leave CSIRO and go out, and this is their baby and they have reached a point in their career or their personal circumstances where this is exactly what they want to do. We obviously facilitate that process. When people do that and leave CSIRO, CSIRO is amenable to their arrangement with the company being that they have a shareholding benefit from the company. In our usual spin-off circumstance, we do not provide to our staff a shareholding in the company whilst they retain a connection to CSIRO. Often you will find staff making a decision around that sort of issue as well.

Mr King—This is a completely non-trivial issue for us. In every single spin-off transaction we do, this is one of the major issues. In a couple of years in the CSIRO group, we have not had an arrangement or spin-out occur where this has not been one of our main focuses. It is always resolved, but often over sort of a six-month period, running in parallel of course; but it is something we do have to pay a lot of attention to.

Dr Kociuba—We are also conscious of replenishing the talent, so that whilst they are seconded or contracted for a period, they are also mentoring new scientists coming up the line; so there is this constant program.

CHAIR—What is CSIRO's interest in PolyNovo now?

Dr Kociuba—We have a 50 per cent interest in the company and a nominee director on the board.

CHAIR—Do you categorise PolyNovo as an SME?

Dr Kociuba—We call it a start-up company.

CHAIR—Is it one of the SMEs that you want deeper and closer relationships with?

Dr Steele—Would it be an SME that we would call a star SME and that we would imagine would be an appropriate candidate for an Australian growth-partnership type arrangement? It is heading in that direction. We would expect that if it is a successful start-up over a period of three to five years and getting to the point where you are looking at products going out there, then we

would be thinking of it as falling into that so-called 'star' category. It is an early stage example of that.

CHAIR—You say in your submission that CSIRO cannot fund this. Why?

Dr Steele—CSIRO has funded the activities up until the start of the company. The size of the body of an SME-type proposition—the proposal that is in there—is something like \$20 million or more per annum as the sort of scheme that we are talking about. First point: we have not operated as a funder of funds to date, which is what this proposal is around. Indeed, a few years ago there was a prospect that CSIRO would make serious investments into the pre-seed funds and uni-seed, and in fact CSIRO drew back from doing that at that time. We have usually taken the view that the funds that CSIRO is provided with in the appropriation vote are not there for us to play the game of being a funder of venture funds. We do use our funds for the purposes of developing technology that then goes into companies, but at that stage of the proceedings we treat the relationship with CSIRO as being an arms-length relationship. In the PolyNovo case, for example, we have a shareholding relationship with the company and we have a separate service provision relationship with the company, and the service provision relationship is on an arms-length basis.

CHAIR—Yes, I understand that.

Dr Steele—It is untouched by our shareholding relationship.

CHAIR—Forget the service provision. Do you mind if I pursue this? You half own it.

Dr Steele—Correct.

CHAIR—Do you not have an interest in investing more money so you can make more money?

Dr Steele—We have not run the role of being a venture capital provider in that sense.

CHAIR—Yes, but when I asked you flicked me onto arms-length service provision—and I do not have an axe to grind; I am just trying to understand. If you own 50 per cent of PolyNovo, which seems to be a goer, wouldn't a further investment work? Why would you be looking—

Dr Steele—Our position at the moment is that we have run our relationships with our companies where we are a shareholder on an arms-length basis.

CHAIR—Do the shareholders usually put in money afterwards?

Dr Steele—My personal view: if I were a company in which CSIRO was not a shareholder, I would want to know that, when I went to CSIRO, the relationship with CSIRO was on the same basis—and was not different as a consequence of the fact that CSIRO is not a shareholder—as that which would be provided by CSIRO to a company where CSIRO is a shareholder.

CHAIR—A worst-case illustration of that potential?

Dr Steele—If I were to get a phone call from a company that said, ‘I would like the following relationship with CSIRO, please, because I am a shareholder,’ the calculation I would be doing is: what would happen if the next phone call was from their competitor, in which CSIRO was not a shareholder? They should logically be asking for the same preferential arrangements from a publicly funded entity like CSIRO—a tax-paying entity as well et cetera. That is the logic I have used when those sorts of issues come up. The matter is resolved if you think about the service provider relationship as being in one category and the shareholding relationship being in the other category.

Our role in holding shares is to facilitate the formation of companies and get the technology out there, but we are not a long-term holder of shares. So our shareholding policy is that we sell-down our shareholding position when we can be compatible with not destroying the value of the company—so we obviously do not flood the marketplace—but when essentially we are in a position where our relationship with the company is moving away from that very early stage: the company is moving to an independent position, they are no longer dependent upon the CSIRO, it should be at arms length et cetera. That is what our policy is. We are not a long-term holder and we do not play the market with our shareholding.

Dr WASHER—Dr Steele, you went through very precisely about the funding problems, and certainly Katherine did, but can you tell me about the management problems: how do you attract high-calibre management, which is critical to the company? Mr Quick asked about the availability of finances. What is probably even more important is the management side and the availability in Australia of good, quality management. There is also something that I do not quite understand: Xceed Biotechnology is publicly listed, so it has had share registration, it has been commercialised and listed with a share market price, but I do not know what that means. Could you tell me about those couple of things? If it is not publicly listed, why isn’t it?

Dr Kociuba—It is a little bit confusing. Xceed Biotechnology itself is publicly listed; it is on the Australian Stock Exchange, so PolyNovo is half owned by a publicly listed vehicle. PolyNovo itself is still private, and we want to keep it private until we hit a really key milestone, and then we will probably list PolyNovo itself—maybe in three, four or five years time. That was the idea behind that.

Mr King—So the stated business of Xceed is the investment into biotechnology companies, and PolyNovo is merely an investment on their part.

Dr WASHER—I fully comprehend that. Can you now describe to me the availability of quality management and what that milestone, in your opinion, as you are a 50 per cent shareholder, would be to make it publicly listed? Obviously you have criteria. Can you explain that to us, because it is not just getting the money, it is making sure these things do not fall in a hole, because no-one is going to invest in Biotech if we have a few go pear shaped. I am really worried about it: we have gotten to this stage, but can you explain the rest of it?

Dr Kociuba—CSIRO’s view in this case, and it does depend on the transaction and the company and the business, is that a listing would be appropriate when the product starts to generate human clinical data. So, when the product moves into human clinical trials, that generally has been when biotech companies are normally successful as a public organisation.

Dr Steele—Crucially not before then?

Dr Kociuba—Yes.

Dr WASHER—Absolutely. If I could flesh that out just for the benefit of everyone: you are saying that the animal trials are completed and we are now to launch into human trials? So we have done all our animal model studies—

Dr Kociuba—Correct.

Dr WASHER—and now we are moving forward, and this is when you would choose to launch publicly?

Dr Kociuba—Yes, around that time, when we have data and it has gone through a human clinical trial.

Dr Steele—Although it has to be said that that is a company decision. Clearly it will be the view of the combined shareholders as to when the market conditions are appropriate. What we are saying is that we would not see it as being really good public listing material for a biotech in the human therapeutic-type space until you have at least that level of comfort about the performance of the technology. In the Australian experience, there are a number of biotech companies which have gone to market earlier than that and it has been an interesting ride for the investors. An important thing to keep in mind here is the level of sophistication of the Australian market in their understanding of the risk factors around stages of biotechnology.

An item that CSIRO is always acutely aware of when doing company formations and dealing with partners or potential partners, who are going to seek capital as part of the process at this early stage, is what sorts of representations about the state of the technology are likely to be involved in that transaction. Also, we are keen to ensure that the sources of capital, for non-publicly listed companies, are sophisticated investors who understand the ups and downs of biotechnology, ICT et cetera.

Dr WASHER—Say you have 50 per cent of this company and you are responsible for seeking a top CEO, top management; you have a 50 per cent situation on the board—that is automatic—what is the availability and what criteria are you looking for? In that CEO, are you looking for people with the capability of putting it into a public launch? Tell me about the criteria. This is the software that is so important to make this company launch and be sophisticated. Are you going to step back because you only have 50 per cent influence over it?

Dr Steele—I am going to avoid deliberately reflecting on that specific example because obviously—

Dr WASHER—Sorry, a hypothetical—

CHAIR—CSIRO has already told us why they got precisely the right CEO and what his attributes were, so do not feel too bad.

Dr Kociuba—We are very proud of that.

Dr Steele—I am going to run the generic example, if I may. The thing to know is that when we are building up the proposition that something goes out, the ability to identify appropriate management with the right skills—commercial, in addition to the technical, which we are usually confident we can find in one place or another—is one of the very early questions that occurs within the business development and commercialisation group. Essentially, no proposition will get off the blocks unless we are confident that we know how that is going to be identified. Usually it is a circumstance where we have identified the individuals and had the conversation about them and achieved their engagement and involvement. That is a process which can be quite time consuming and involves networks and looking around quite vigorously to get people. We have had success so far for the number of candidates we have been able to get out there, but we are talking five to six companies per year from our perspective. If you extrapolate that across Australia as to what the demand is, obviously you need a serious pool of people, and they are hard to find in an Australian context.

Dr WASHER—I know I am being difficult, but this is part of innovation. If things go pear shaped, then it is very hard to get other companies launched, so it is interesting to know. Now we will take it to the next scenario, company X. At the stage of human testing you decide to do a public launch. At this stage CSIRO owns 50 per cent of the company. We have a successful public launch, hypothetically, with shares of 20c each and X number of million that is going to run us through to the human testing stage. What does CSIRO do then, because if you cash up and back out, you collapse the marketplace because you are a major player? You are in for the long haul. Tell me what you would do next, as a major player, not to collapse this company, hypothetically.

Dr Steele—The first comment is that it is absolutely true that we do not attempt to sell down in a fashion that will destroy value for the company. The second comment is a qualifier on that—that is, if we find a mechanism to be able to sell down without destroying value then for a listed company we would be quite amenable to that. If there are institutional investors who would be happy to take a parcel, that is absolutely something we would be happy to talk about. We do that by liaising with the company in order to ensure that the company knows our plans and we are able to tease those issues out with the company in order to properly manage the value from a company perspective.

Now, an extreme version of the example you have put forward is a situation where it is not possible to do that and you are truly trapped in for the long haul in a sense. With the increasing sophistication of the Australian marketplace, we actually think that the probability of that goes down. But do CSIRO become proactively involved in running listed companies? No, we do not. Although we have a nominee director relationship in some circumstances, our usual approach to that, where it is a listed company, is that it would not be a CSIRO officer who was appointed. Instead we would be attempting to ensure—once you get to a listed company circumstance you have different rules on your directors positions anyway—as a motivated shareholder, that there are directors with good experience running that company, and we expect them to run that independently of us.

Mrs VALE—Before you even get to that scenario, where you actually have to seek your great managerial talent, when you have come up with the concept and idea and are at a certain stage of development of your product, how do you create awareness amongst your potential investors that you have a product that is worthy of getting to that next stage?

Dr Steele—We are taking PolyNovo as an example?

Mrs VALE—Yes.

Dr Steele—If I have understood correctly, your question is: how do we make sure that the end user of the technology has an appreciation of the technology opportunities we have? We do not actually play that role. We would expect that would be a role that the company would play. That having been said, if you look on the CSIRO web site you will find lots of statements about the PolyNovo technology; this morning's *Age* has an article about the PolyNovo technology. It is fairly well disseminated out there as to the sorts of breakthroughs that we are producing.

Mrs VALE—Would your management talent have done that for you?

Dr Steele—I think that this morning's statement probably was put out by the company, although it quotes a CSIRO scientist who is on secondment to the company. At the time of formation of the company, the announcement about the PolyNovo technology was a CSIRO announcement. When we have taken technology to that point, it is fairly well-described in the public marketplace. Does it get into medical trade journals et cetera? Probably not so much at that point in time, but I would expect that at a later phase of the process when particular products are identified by the company and the company is putting out that information.

Mr King—As to the company itself, there is a process that comes at the end where we do take the company to market, and there is usually a process of road showing. There is a well-worn paradigm to raise knowledge about the company and create interest in it amongst the investment community. Having had experience in our previous careers, we are aware of that. We have networks with those individuals, so there is a quite well tried and accepted paradigm for that, road showing and presenting to various potential investors.

Mr QUICK—Can I go off on another tangent? As to your role in obtaining offensive and defensive patents, and your building up of intellectual property, can you explain how that works and the cost involved, and how large your intellectual property portfolio is in the light of all these spin-off companies?

Dr Steele—Yes, I would be delighted to talk about that. In fact, the third example we wanted to discuss is probably relevant to this because it touches on a few of those issues. The broad answer to your question is that CSIRO has a patent portfolio that has approximately 3,500 patent applications or patents in different jurisdictions around the world. They fall into 700 families of patents, so about 700 inventions. A large number of those patents are in CSIRO's name and have arisen as a result of previous collaborative R&D arrangements and agreements with companies. A fair portion of that technology is already in a commercial arrangement and is licensed to somebody and being commercialised already. Each year we look at that patent portfolio and see whether or not there are some cases to drop off, and each year we add approximately 70 patent applications to that portfolio. That is the broad picture, and that is a portfolio that is increasingly being managed at a corporate level and with good engagement with divisions around its purpose.

Mr QUICK—What would its value be? Some submissions mention the development of a maintenance line of credit through IP, and if you have that large portfolio it must have some value.

Dr Steele—I have no doubt whatsoever that the portfolio has some value and, more precisely to the point, the value varies within the portfolio. It is quite a normal licensing scenario with an entity like CSIRO for the majority of licences to be low-value licences in the \$0 to \$25,000 per annum-type scenario. It is quite normal in a portfolio like that for there to be just a few licences which are of serious value, and I have already given you the example of the cotton technology, which is the subject of plant breeder rights, and a technology worth serious value at this point in time. I do not believe that we have a well-formed view of what the dollar value of the patent portfolio is. That is partly because the dollar value to CSIRO would be different to the dollar value to our licensees, keeping in mind that a fair portion of that portfolio is already licensed. There are a few items in that portfolio which we believe have very significant value. An example of that is the gene silencing technology, and we believe that that has a strong technological prospect and strong commercial value across a number of different fields. We would be expecting to measure the value of that patent portfolio as greater than \$10 million, just around that patent portfolio; it may be measurable in three digits, for example. I know that is an inadequate answer to your question, but it is an accurate answer. The first part of the question, though, was about our patent assertion and defence activities—

Mr QUICK—In relation to perhaps the EU and the United States and the amount of money needed to defend?

Dr Steele—If you go to the handout that I have provided, you will find that the last case is about a patent assertion activity that CSIRO was involved in with the co-owners of the patent, and it was around the extended wear contact lens technology that produced the Focus Night and Day product, and it came out of the CRC for Eye Research and Technology. It was an example of technology being developed in collaboration with the client on a jointly funded basis—it was a serious project by the way, worth \$100 million in total—and then a competing product came onto the marketplace from a competitor, and there was a patent assertion activity entered into.

CSIRO's involvement in that particular case was as a co-plaintiff in Australia and, as I remember it, a relatively silent co-plaintiff in the USA. We were also involved as a co-plaintiff in a European case. In that particular circumstance, it went through a full court process in Australia, a full court process in the USA, although it was settled on the day of judgment, and there was a commercial settlement. I do not know exactly what it cost our co-owner, who was footing the bill for that, but, as a general rule, something like \$10 million is the sort of lump that you are biting off when you are going to assert a patent. Clearly it is something you do when there is some important technology.

Because CSIRO are not a product manufacturer we are in a different situation compared with most of the patent assertions that go on. CIBA Vision are asserting the patent because their competitor in the marketplace is getting into their field of exclusivity. When you come to settling an arrangement like that, which is a settlement between two product manufacturers, it is a different sort of discussion than occurs in the context of a research provider versus somebody who is infringing their patent, because they are not quite in a competitive situation. But I think your question was: what are the sorts of amounts we are talking about? That is an indicative figure.

CHAIR—Could I just bring you back to your proposal about the Australian growth partnerships? How does this apply to PolyNovo? PolyNovo is selected as the star; how would

that apply? Secondly, what does the issue of mandate mean? I could not understand that, especially in light of your comments that CSIRO does not want to get involved in the longer term development of these things.

Dr Steele—Can I take your latter question first. Recommendation No. 3 is saying that the government is to make a specific statement about its expectations in terms of CSIRO and other publicly funded research agencies entering the process of putting a particular focus on collaborations with SMEs, saying, ‘These are the sorts of things we expect you to do.’ The second recommendation is that that is done in the context of the government providing resources to facilitate that process, and obviously one provides a context for the other. That is the recommendation that is being made here. It is something which has a particular focus and resourcing. We are doing something that is new and a logical extension of the sorts of things that we are doing already, in the sense that the government is already funding public entities who are putting the opportunities out there.

The underlying logic is that companies that are established have gone through the issue of getting the management team and have all of that company formation and running activities organised. They have a prospect. There is huge efficiency and effectiveness there in using those entities as the vehicles and driving growth through those, rather than a policy of solely continuing to seed the waters with larger numbers of new companies which, by their nature, are very fragile.

CHAIR—You have \$20 million for development. What happens; who gets it?

Dr Steele—Mechanistically, how would it happen?

CHAIR—First, who gets the money?

Dr Steele—We are less prescriptive in our submission about exactly how that would work and we are assuming that there is a policy issue here and then one starts to work out the detail.

CHAIR—It is very innovative thinking, yes.

Dr Steele—Stepping slightly more over the line than that, I imagine that CSIRO would be open to facilitating the mechanics of it, but I do not know that we have a specific proposal on the table about the mechanics.

CHAIR—So you do not know who gets the money?

Mr King—I think there are some obvious indicators. We would be starting from the premise, as technology developed—

CHAIR—If we think this is interesting, can you provide—

Dr Steele—Yes, I am sure CSIRO would be very happy to. I am sure we would be open to fleshing that out.

CHAIR—I think that is important, because it is big issue. Thank you very much for appearing today. It has been very useful. I think there will be a number of follow-up questions and requests for specificity, because this looks like a think piece that for you is a work in progress.

[10.56 am]

WILLIAMS, Dr Keith, Founder Director, Proteome Systems

CHAIR—Welcome. The committee does not require you to take an oath, but please treat the proceedings with the same respect as the proceedings of the House. Misleading or false testimony could be treated as a contempt of the parliament. Would you like to make an opening statement? And can you tell us what Proteome, the name of your company, means?

Dr Williams—Proteomics is about industrialising protein science. If you take away the water, you are half protein, and virtually all of the products in the biotech industry focus around protein. It is a big area and it is an area that Australia stands pretty tall in. Australian scientists have been highly involved with developing protein science. A good example of that is the biggest biotech company in the world, Amgen, which has commercialised technology developed in Melbourne. It is not just at the scientific level. It has also been taken through in the USA, admittedly, to form the largest biotech company in the world. It is a very significant space, and Australia stands very tall in this space.

In my submission I wrote a short commentary which I will elaborate on a little. It seems to me that in a number of cases—and this may come from the inexperience of the community at large as to where biotech goes—a whole lot of the structures that have been put in place by government are highly efficient in some areas but then operate on an assumption that, when it comes to business and commercialisation, as you start to see a product, business needs to pick that up. That certainly is not the way the rest of the world views a lot of emerging industries. Our experience has been that, when it came to the expensive bit, the commercialisation, we were left high and dry, and that has been very challenging for us as a business.

It seems to me there is some recognition now about this, but the challenge is for you to work out what to do about it. I do not think anywhere else in the world where industries have been developed has there been a process put in place where there is a superb nurturing of the beginning and then a complete indifference to what happens after that. The consequence is that the technology goes elsewhere, and that is a serious issue for the country.

For emerging businesses in the global community, it seems to me that you cannot expect to get established by taking things through completely in your own right. You have to partner to get yourself built up, and if we go back to Amgen, the defining deal that got Amgen going was a partnership with the Japanese company Kuon. They did a great deal in relation to a Japanese marketing opportunity that set up the business. The issue is not about needing to partner; it is when you partner. Again, I think there is a very critical issue about value as to when you do that partnering step. Obviously the later the better, because if you partner early, you give away the good times.

CHAIR—You make the observation:

Our Japanese partner sits patiently waiting to acquire the products when Proteome Systems runs out of cash to complete the commercialisation.

Do you want to elaborate on that, or would you just rather let it sit?

Dr Williams—The reason I am sensitive about this being in a public forum is that we have invested a huge amount in the relationship, and we are at the critical seven years with our Japanese partners where you become family, and we are seeing that. But we do certainly in Japan see a time frame perspective that is very different. What I am saying now is not public, but sometimes I wonder whether even our Japanese partners—

CHAIR—We are in public hearings, and it is going to be very difficult to go in camera. We can, but I think organisationally it would be difficult. So if we could go in camera or speak to you confidentially at some later stage—

Dr Williams—The challenge is that I do not want to see this in a newspaper.

CHAIR—That is always very difficult to guarantee at a public hearing. If you do not wish to see it, do not say it.

Dr WASHER—Mr Chair, there would be a possibility of putting in a confidential submission to us—if you agree.

CHAIR—There certainly would.

Dr Williams—What I put in my open submission gives a sense of the fact that when you have a party that has a very long term perspective and you are in a technology area where it is likely to take a long time before the good times roll, you can ask the question whether your partner has come in and understood that you are going to get tired long before them, and they are going to have the good times. That is the context that an Australian company works in when you work in Asia, in particular. I think the USA is much more short-term focused, and you do not see those sorts of issues. There is a partnering issue there and you need to have big friends, and we have worked very carefully to do that.

We would have liked to have been a bit further down the commercialisation path. In relation to our program with our technology products, had we had access to a commercialisation loan, it would have been a very different story. We were totally blocked from that opportunity. Even though there was the opportunity to do that, the view was: this is your problem, not the government's, and we should not be giving you loans at this stage. That just did not make any sense to me at all. It is a clear defect in the way the R&D Start scheme has operated in the past. What is being put in place may partially resolve that.

The next point I would make is about intellectual property, because it is fairly critical. Again I think as a community we may not understand the game here. At a PMSEC discussion a little while ago in relation to the commercialisation of SME stuff, I heard people in the room saying, 'We just can't afford to do that, so why bother?' The reality is that this is building value, and you need to find the money to do that. It is quite a complex area, and it is not one dimensional at all. There is a whole range of issues. First, there are the issues around cornerstone IP, which is where the critical value resides, but then building protective fences around that so you do not get sideswiped. There is that whole strategic issue of not only having a good idea that is able to be commercialised but making sure you put that in a protectable place. That does mean you have to

spend money on ancillary patents, many of which are really only there to create diversions and put rocks in the way of other people. So there is that whole strategic issue.

There is then the issue of what markets you go into, and we are confronted by this very clearly at the moment. My view of the world is that the big opportunities are the emerging markets in India and China, because they are such massive population centres, and it is a no-brainer to me that this is where you have to go. Only recently has it started to be the case that China is respecting IP. Now whenever we take a patent out—and remember, every country that you add costs money—it seems to me we must be protecting China, but it adds another pile of expense. We do a lot of strategic stuff within the business. With really critical patents, you go very broadly, but with a lot of your other stuff you are much more strategic, and the question is: do you only do the USA, Japan and maybe Germany, England and China? We are confronted all the time by dollars and cents issues about this. These are big issues. I do not think they are discussed; I do not think they are even well understood. In a lot of biotech companies, people just say, ‘It’s too hard, I won’t bother.’ In terms of protecting stuff, if you get into a fight, you have to have a partner. I do not believe you can indulge in a major patent fight with a product that is worth a few billion dollars. As a young company, you need a friend. I am not talking about that issue of protection; I am talking about building the real estate, and in some respects it helps you build your partnership, because if you have a strong position your partners will respect that, and that is why they will partner with you.

The last point is the issue of local purchasing. This is a 30- or 40-year-old problem that still has not been addressed. There are a couple of issues about this. The process of commercialisation is not simple. You do not finish a product and then sell it. The finished product has to go through a process of testing and review with test customers and has to be pre-marketed. There are all kinds of issues that need to be confronted. When you initially get stuff out it breaks down a lot. Being able to do that at home is an enormously easier process than doing what we had to do, which is market establishment in the USA and Japan. It costs money to fly people, you do not have the easy accessibility and you are not rubbing shoulders with them on a daily basis. Enabling the commercialisation process to be able to get into our local markets would be helpful. We live in a culture where actual users and scientists are very positive about new Australian technology and products, but when you get to the purchasing department they are only interested in dollars and cents.

CHAIR—They would disagree and say it is a matter of value for money rather than just dollars and cents, regardless of whether that is true.

Dr Williams—The point I am making is that if you have a product that is dangerous and new, your big brother competitors will do everything they can to create some rocks in the way. The Australian market is not of great consequence to a GE, but if they can keep us out of the Australian market then they curtail our ability to penetrate the USA and particularly the Asian markets. This is a big issue we have confronted a number of times where our big competitors have deliberately cut price until we are out of the game. All is fair in love and war. It is a tough game.

There are ancillary issues that are not cash based. We have a number of groups in Australia who are now acknowledging that Sydney is closer than Stockholm. When we say we can support things and you can talk to the inventors, you do not do that with a great big company out of the

USA or Stockholm. We are arguing that purchasing groups should be allowed to take those sorts of issues into account because they are clear value adds. Again, it is not simple and straightforward. I have had a reasonably close look at the free trade agreement, and it seems to me there is the possibility with SMEs to provide support in terms of government purchasing. There is the 10 per cent rule. When you look at the 10 per cent rule at the moment it is mostly toilet paper and computers sold by Harvey Norman. The support of the local technology industry does not get translated in that process, and that is an issue that needs to be looked at pretty carefully.

Dr WASHER—Dr Williams, if you could flesh out the 10 per cent rule.

Dr Williams—In terms of government purchasing there is a requirement that 10 per cent of purchasing goes to local SMEs. The reality is that local SME support is seen as paperclips and internal travel and computers from Harvey Norman. The intention of that rule does not get back to companies like ours. It is quite complex in our case because most of the purchasing that relates to technology products is not direct government purchasing but through a university or CSIRO. It is harder to articulate how to make the rule work. There has been an intention there to provide some support. My argument is that if you are providing some support for groups like ours—this problem goes back to Memtec, is more than 30 years old and never really gets addressed—it leverages our ability to develop products more effectively, position ourselves in Asia and provide a lot of local employment in terms of supporting other businesses. Mechanistically it does not work and that is beginning to be acknowledged now. I do not have answers as to how you resolve it.

Dr JENSEN—You have brought up a few interesting points. First of all, you mentioned that we are good at innovation support but relatively lousy at commercialisation support compared to a lot of other advanced nations. What track do you perceive that we should be taking in that regard?

Dr Williams—I think the loans idea is a good one. When you have a product and you are heading into commercialisation, you do not need handouts, you just need some help. At the stage of most young biotech companies your access to banks relates to your ability to mortgage your house and you are pretty much ignored by everyone. In the USA there is the SBIR program that sits very directly in that space of supporting and moving it beyond that initial mad scheme stage. There has been in place a mechanism to do this. It has not been used because of an attitude that, when it gets to this commercialisation stage, it becomes the problem of business. The dollars are different between the early stage stuff and the later commercialisation.

If we just consider becoming commercial and talk about Japan, the USA, Europe—which is really four or five markets—Korea, China, Taiwan and India, in every one of those places you need to be partnering with groups who are going to provide distribution. In our case we have done it as a partnering model so, rather than building our own sales and marketing network, we have tended to have managers who can manage relationships. We have been out building relationships with groups that can help give us leverage into those places, but it is really expensive and it is done at a time when you are not making any money.

Mr QUICK—How expensive is it? Can you give it to us in dollar terms? If you went to the bank and said, 'I need the money,' what are we talking?

Dr Williams—If we had had \$5 million as a commercialisation loan it would have made a monstrous difference to our ability to get our products into the market.

Mr QUICK—There is no understanding from the banks?

Dr Williams—No.

Mr QUICK—None at all?

Dr Williams—No.

Mr QUICK—You mention in the last sentence, ‘Many small companies stay alive with assistance from US government grants.’ Are they of such value?

Dr Williams—Yes, this is the SBIR program. Very often it comes as a pilot of a couple of hundred thousand dollars and then there is about \$750,000 to a million dollars behind it. We partner with some high tech US companies who have lived for 15 years on SBIR grants. In some respects they are on a gravy train and have not pushed themselves further. The great thing about the Aussie system is that you live or die. We are out there trying to sell stuff, but it would be helpful to have a little support.

Mrs VALE—You said in your submission that you found a reluctance by Australian organisations to purchase Australian product. Do you have any idea how that could be overcome?

Dr Williams—Let us look at the metrics of what the reluctance relates to. A lot of it relates to being a young company and whether you will still be around. You may have big competitors who are threatened by your products. We have had feedback from some of our partners—IBM for example was a big partner for us—that through Asia our big competitors were walking around saying, ‘Don’t worry about these guys because they’re not going to be in business for much longer.’ That is an issue and it comes back to value for money. An example is the bursar at the University of Sydney who is confronted with a substantial purchase from a small Aussie tech company when he has some very big players saying, ‘Don’t touch them, they’re not going to be around and it’s too risky.’ These are the issues we face.

Mrs VALE—So it is not just your initial product; it is really a guarantee of back-up servicing and back-up evolution of your product?

Dr Williams—The interesting comment for me is that when I look at my big competitors, GE owns one of them at the moment. It was owned by Amersham before that and it was owned by Pharmacia before that. The lifetime of most of these big competitors is always less than five years, so what are we talking about here? They are not going to be in business much longer, but what you can be clear about is there is a continuity of ownership. We have attempted to do some of this by hiding behind our 125-year-old Japanese partner.

CHAIR—Are you saying the same thing about them as they are saying about you?

Dr Williams—It is true, and it is an interesting comment. I still do not think a lot of people feel able to purchase Australian technology. It could be as simple as saying, ‘We actually encourage you to purchase Aussie technology, and we acknowledge that with young companies there is always a risk.’ I am absolutely in no doubt that even if we did get out of this game our products would survive because they are the best and we are dealing with all kinds of people that are always interested in the priority ones to sell. So, in a sense, there is not a huge risk. Once you get a product through that dreadful CE marking and all that stuff, it has a life and you can move it along.

Dr JENSEN—You were talking about the issue of big company competition, and you have just expanded on that. What would you propose that the government do? Are you proposing something like anti-competitive legislation in addition to what we already have?

Dr Williams—No, I do not think that works. It is a tough world and all is fair in love and war and that is not helpful. My major thing is to allow people to purchase. We have some really interesting new technologies. There could be an early access program from the government where researchers around the country could get early access to our technology. What is happening at the moment is that we are in front of the game. We are driving that technology into the US and Japan and poor old Australia, where it was invented, is going to get it last because of this conservatism. There could be a program whereby, once the technology is finished, it would seed that in 10 of the top research institutes and have a bunch of people who are interested in our technology. They have a 12- to 18- to 24-month lag now where they try and work out getting grants. That is a long time ahead. It does not help to try and be prescriptive with big corporations because you just get tangled up.

CHAIR—Can you come back to us with some more thoughts on that last proposal, about seeding? Also, if you want to come back to us with a confidential submission on the issues that were raised regarding partnerships, we will treat it as a confidential submission. Thank you for appearing before us.

Proceedings suspended from 11.18 am to 11.34 am

GRIFFITHS, Mr Matthew, Business Adviser, COMET Program, AusIndustry

NELSON, Mr David Andrew, Managing Director, Divergent Capital

MORRIS, Mr Brett John, Chief Executive, Neo Technology Ventures Pty Ltd

WOODWARD, Mr Marc Xavier, Executive Director, Neo Technology Ventures Pty Ltd

CHAIR—Do you wish to make a brief introductory statement with respect to your submissions?

Mr Morris—Ours was not so much a formal submission but rather raised a few issues we felt were worth raising, given the context of your terms of reference. The following are the major issues as we see them. We essentially now have approximately \$75 million of early stage venture capital money under management. We focus specifically on Australian science and technology, and looking at how to commercialise that technology. In particular, we look for globally relevant science and technology that we can take into the USA, Europe and Asia. We have a number of investees under management right now, and we are actively looking for new investment opportunities.

In terms of commercialising science and technology in the Australian community, we see five issues as being relevant. These issues obviously interlink and play off one another. First is the innovation and investment climate in the Australian community. Second is the lack of an entrepreneurial base. The third issue is incentive tax and compliance regimes. Fourth are government programs. The fifth issue is what we call performance data. I will briefly expand upon each of these five issues in point form. In relation to the innovation and investment climate, there is a very strong culture of innovation in science and technology in the Australian community. We have a very strong culture in terms of creating and iterating good science and good innovative technologies. In fact, Australia is rated No. 2 in the OECD in information technology. What we have a poor record in doing is taking that technology, commercialising it and taking it to the rest of the world. One of the many reasons for that is that we have a very thin capital base in being able to commercialise science and technology.

Commercialisation of early stage science and technology is unfortunately an unproven asset class. If we look at it as an alternative asset subclass, it has some successes but unfortunately, they are rather fragmented. We need to look at how we can continue to prove up the asset class as a way of attracting funds. In our opinion, government underwriting of the sector, as a long-term process rather than a series of events, is vital. There are a number of very good government programs helping to underwrite the commercialisation of science and technology, and it needs a continued long-run focus as a process over, we would suggest, at least the next 10 to 15 years. There needs to be a focus on lessening the friction in terms of commercialising good science and technology. We would suggest that the model of doing that right now is flawed, and that we need to look at finding different diverse models to do that—looking very closely at not just at the successes and some of the best case studies but also the failures and learning from them. We can learn as much from failures as we can from successes.

We believe that Australia's lack of entrepreneurial base warrants specific targeting. There are not enough entrepreneurs either by number and/or by experience. We need more managers who can understand the process of commercialising science and technology, and we need those same managers to understand the process not just from a commercial point of view but what is the investment process. How do you attract and take investment dollars? How do you find capital, and how do you apply that capital in smart ways to globalise your product and commercialise good science and technology? What that means is that we need risk takers as entrepreneurs, and we need more of them who can turn science and technology into businesses. This is not a task for technologists. One of the key reasons for failure in terms of commercialising science and technology is leaving that role in the hands of technologists. Technologists have an entirely different skill set and are not equipped to become involved in the commercialisation process. We are involved in a venture with NICTA and other venture capitalists called EIR, Entrepreneurs in Residence. The EIR program is looking to try to attract entrepreneurs, both locally and from the USA specifically, as part of a program to take specific technologies out of NICTA and endeavour to put a commercial wrap around them.

Incentive tax and compliance regimes are currently onerous and complex in terms of commercialisation. They increase the difficulty of trying to structure very early stage start-ups and commercialisation businesses for high performance to attract talent, and to reward success. Current option schemes are very collection centric, they involve a lot of work to implement, and are really designed for larger businesses. Entrepreneurs are happy to pay when success happens but paying tax on a success that might happen three to five years out is extremely punitive, and it is a real disincentive in terms of trying to align good structures for performance. In government programs, we think there is an excellent range of assistant programs for commercialisation across the community. Feedback from investees suggests that the programs tend to be vertical and lead to what we call vertical fatigue. We think there is an opportunity to have better overarching coordination across departments and agencies in relation to those programs. This would lessen the friction experienced by potential commercialisation entities and allow for better replication of their processes. Potential investees that we are looking at almost have to reinvent themselves every time they go to a different agency seeking assistance, which is expensive, time consuming and complex. We think that coordination could be much more start-up and commercialisation centric, rather than program centric.

The final issue is performance data. We believe that as a key national aim for the long term, it is imperative we attract more investment dollars to the commercialisation of science and technology—more private capital. To attract more investment capital we need better commercialisation performance data. Currently that data is highly fragmented. There is no one point anyone can go to and research and gather information on the history of commercialisation of science technology in Australia over the last 30 years. We think an easily accessible central repository of data focused on what has happened in start-up and commercialisation of science and technology would be of assistance. In the USA, Venture Source is a comparable source data you can access. But in the Australian community, getting it from the venture community is insufficient. A Queensland company called Xtremelok announced that they were selling themselves to a USA company called Symantec a few weeks ago for \$23 million. With no way of gathering and storing that data, in two or three years time that success story will disappear and be lost.

CHAIR—Mr Griffiths?

Mr Griffiths—I am part of the COMET program. COMET stands for Commercialising Emerging Technologies, and is an AusIndustry run program outsourced to the private sector. I am one of now 16 business advisers across Australia. The COMET program has helped over 1,000 companies since its inception in 1999. An extra \$100 million from Backing Australia's Ability has resulted in an extension of the program to 2011.

Those companies have raised around \$400 million and it is focused on the early stage companies. The companies have to be less than five years old and have less than \$5 million of revenue. Most have significantly less than that. They also have to have defensible intellectual property, for example, patents and the like. We do not support fish and chip shops for instance. Personally, I have a portfolio of around 70 companies. Those companies have raised around \$40 million from about 40 transactions. Given that one of those transactions was an IPO for \$15 million, that indicates that most of my transactions are way below where the other submitters here today are—they are in the hundreds of thousands of dollars. The small seed transactions. The thing we look at is trying to commercialise across industries. We have a very broad base. We see across our network around two to three thousand companies a year and we support around 150 to 200. We are probably the only network with a footprint of that size in Australia. We essentially see everyone in the sector—anyone that has been on one of the Telstra awards, all the New Inventors programs—a lot of them are either our companies or have been rejected. The people that the other submitters here today invest in or look at are a subsection of what we see.

We focus on the early stage space. One of the key issues in the early stage space is that we have hundreds of chronically under capitalised companies. Getting them from a period of either no revenue or a tiny bit of revenue, to a sustainable base of perhaps one or two million dollars where they can start paying taxes, start employing people and have a reasonable lifestyle, is a very painful business. We do what we can to help them. We put them in front of investors, where there are investors. We team them up with multinationals where we can. We introduce them to everything from strategic partners to other interested parties. I liken what I do to sort of a battlefield surgeon being parachuted into a war zone armed with a towel. If they have a broken arm or are bleeding then may be we can help them, otherwise I can only tell them what they should be doing if they had the money. The key issue for us in our space is that we have a base of companies that we need to inject with money. My perspective is slightly different to Brett's, being broader than just the ICT area, but I completely agree with many of the things that Brett has spoken about.

CHAIR—Mr Nelson?

Mr Nelson—Our company Divergent Capital is one of the member companies of the ICT incubators program previously known as the BITS program. We are part of existing government policy to try to address these problems. We have invested about \$5 million over the past 4½ years into 11 companies to date, and we have a further \$4 million to continue that mandate. I think the summation that Brett gave was very thorough and covered a lot of the issues that I would also raise and support, so I will not repeat them but just highlight particular points. I think that the thrust of good innovation and good commercialisation requires the combination of intellectual, financial and human capital, and so we should be seeking programs that support good businesses as opposed to just good ideas. The repository of information that Brett referred to is important, not just for its own sake but to prove that our sector, albeit it has a high risk return profile, is an attractive one because at the moment there is perception that the risk

outweighs the reward. We need to prove or disprove that in order to have an efficient allocation of capital.

In terms of the orders of magnitude of the different problems faced by the industry in finding good managers or finding good science, I would seek to find good managers for the simple reason that a good piece of technology very well executed and carried out by good management is much more likely to succeed than an excellent piece of technology poorly carried out by average management. I think the culture of entrepreneurship and management that we need to foster is probably the best and most critical influence that we can put in place. At Divergent we are in the pre venture capital space and invest sub \$1 million dollar amounts, whereas someone like Brett perhaps has the scope to invest larger amounts.

A key benefit we can try to achieve is to be a money magnet to bring more money from people like Business Angels into this space. One of the reasons why there is not more of that, is that there is not a legacy of entrepreneurship or a generation of previously successful entrepreneurs in our country and in our industry, that have the aptitude and the savvy to be able to make good business and good financial decisions. I believe our organisation can be an effective money magnet because we have an alignment of interest with them, and are investing capital and are well suited to the Australian climate. Someone who is merely acting as an adviser or a matching network, does not have the same alignment of interests and will not do a lot of the heavy lifting to bring along Business Angels is perhaps not as successful. That type of matching network is more inclined to work in the States where there are many savvy entrepreneurs.

CHAIR—Could I just ask a question about—I think it was your second last point—the proliferation of programs? Some of us are having difficulty just keeping up with the number of programs—and we do not have to apply for them! Could you develop that a bit. I got the impression that there was general agreement on that as an issue. Can you tell us a bit more about that?

Mr Morris—Yes. My comments were not intended to criticise the programs per se, in fact, I think there is an excellent range of programs. The point I wanted to make was the benefit of actually getting a better overarching coordination of those programs, such that one and one equals three rather than one and one equals 1½. If we can get a better synergistic effect out of the different programs that are in place and the different expenditures that are being made through those programs, we can get a better bang for our buck. The feedback we get from potential investee companies that we talk to—and whilst Matthew would see 2,000 to 3,000 a year, we may see 400 or 500 a year—is that just trying to understand and access each of those programs individually is tough. It produces a lot of friction, takes a lot of time and is costly. We need to find a way to try to reduce the friction by a better over arching coordination.

CHAIR—What does that mean?

Mr Morris—Whether it requires a specific change in policy or the establishment of an overarching mechanism or body, I do not know that we need to bureaucratise it any more. Perhaps find a more efficient and frictionless way of allowing start-ups, people with science and technology that have a valid proposition for commercialisation, access and knowledge about that. I can identify the problem and touch on the solution, but in terms of the specifics of what that solution looks like.

CHAIR—I think it was you who made the point about they have to reinvent themselves every time they go to a different program.

Mr Nelson—You start the education process from scratch every time you go to COMET or Commercial Ready or wherever. If you had an account manager at AusIndustry who knew your business and knew where you were on the commercialisation pathway, and that you are now eligible for COMET, he could feed the existing information on file for you into that program and see whether it was successful or not. Then you could move forward to the next step, and the next step. It would be more seamless and less of a drain on AusIndustry resources in terms of time as well on the investee company.

Mr Griffiths—It is probably worth me commenting because I have one foot in each camp. There is no doubt that a lot of it is that there has been a lot of focus on the R&D side. We see all the money going into the biotech industries and things like that. You saw the R&D Start program. I think the Commercial Ready program that has recently been rolled out is an attempt to move into our space, helping to commercialise. For me, it is never really about the technology. The technology is there and works to some degree. It is always about how to get it to market, who to sell it to, getting teams in and things like that.

Commercial Ready is unproven at the moment, but the intent is that there is going to be a sort of dip in, dip out—a lot more cradle to grave following of the companies. However in COMET we are a facilitation program, so any company that comes into COMET, particularly in New South Wales, we put into the Technology Showcase, we make sure they get their R&D tax rebate, we tie up with the incubators and the VCs where appropriate and help them with Commercial Ready. From our side we try to do that, but it is for a particular subset but then you go into Austrade and they have their expert market development things. There is a plethora of programs around, and it is tricky to know what to do. I think the government has made a good attempt with the Commercial Ready program. They have brought in the BIF program—for biotech innovation—and made it more generically available to our sorts of companies paying for proof of concepts and things like that. The jury is still out and we will see how it develops. We will only know the first results in the next two or three years.

Mr Morris—I think David's point was a very strong one. Looking for where an answer might lie may involve moving from thinking in terms of being program centric, to being account management centric. That means focusing more on each of the commercialisation entities and thinking about how to manage them through a life cycle from gestation and birth. That might be a five- or seven-year management program. However, if you call them customers, it is very customer centric rather than program centric.

Mr Griffiths—I would just like to add that with COMET that is exactly what we do. I work with a company for a two-year period. I think the results that have come out of COMET show that that does work. We have been successful with fundraising and more importantly, strategic alliances. We have thousands of strategic alliances. Of the 70 companies I have in my portfolio, I think only two have failed to date, over a three- to four-year period in an area where it is very tough.

Dr JENSEN—Mr Morris, you were mentioning the issue of getting more good entrepreneurs in Australia. You mentioned some ideas of facilitating that. Could you please expand on that a bit more?

Mr Griffiths—Yes, but can I redirect that question to my colleague Marc Woodward?

Dr JENSEN—Sure.

Mr Griffiths—Marc is a partner in the firm who has been working on exactly this issue including in the United States,. I will let him speak to that issue as well as the entrepreneurial issue.

Mr Woodward—By way of background on myself, I have been in Australia for about three years working with two different VC firms, and a number of individual start-ups. Prior to that, I spent about eight years in Silicon Valley in investment banking and venture capital. That experience has given me a decent view of the differences between the two markets. Silicon Valley has been successful in venture capital and the commercialisation of technology, for perhaps 40 or 50 years longer than Australia. Here the market is much younger, less sophisticated and has perhaps not adopted all the best practices of Silicon Valley. The outcome of that is that there are fewer entrepreneurs in Australia—I don't think anyone can argue with that. We lack the history of successful start-ups here that create numerous generations of successful entrepreneurs. One of the outcomes or beliefs within the venture capital community in Australia is that, if we are able to bring down a few seasoned entrepreneurs from the US or other markets to work with Australian companies here and help in trying to commercialise technologies coming out of certain R&D organisations, that is a good first step in helping to educate Australian entrepreneurs that would work alongside the Entrepreneurs in Residence, EIR. The program we have developed over the past six to 12 months alongside two other venture capital funds, is to try to recruit a handful of entrepreneurs from the United States to come down here and work for a period of time. The three firms involved are Neo Technology Ventures, Technology Venture Partners and Starfish Ventures. These three firms have partnered with NICTA, which has agreed to sponsor this program. NICTA will hire two individuals for a period of six to 12 months to come into NICTA, evaluate all the various technologies, and then hopefully select one and spin a start-up company out of that, which the VCs have sort of pre-agreed to fund. Granted it relies on successful outcomes and spinouts, but we are certainly supportive of that program. That is just one small way that we are trying a new avenue to increase entrepreneurship.

Dr JENSEN—Effectively you are really talking about a mentoring program?

Mr Woodward—Absolutely.

Mr Morris—Actually it is much deeper than that. It is really the concept of the entrepreneur that NICTA is recruiting. They are actually going to be taking it over, really owning it and running it. They become the chief executive of the spinout company, and have a financial commitment and financial ownership of it. They become the CEO, the leader, the manager.

Dr JENSEN—I guess you are talking about a single company with a single entrepreneur. The thing I am interested in here, is how can we spread this wider.

Mr Morris—Yes, how do we systematise that process and grow our own.

Dr JENSEN—Exactly.

Mr Woodward—If I can just make two points on that. With NICTA as an example so far, in the process, we have selected two of the entrepreneurs, and I think they will receive offers this week. They have already spent a week at NICTA and met with a dozen or two dozen research groups, which has created a sort of competitive environment because a lot of these groups want to be selected as the technology that is going to spin-out. So right there we are seeing a direct impact on an R&D organisation that, hopefully, is going to be a little bit more commercially oriented. The other point I would make is that, yes this EIR is going to be the CEO of the company, but everybody around him will learn. Hopefully he will build a team around him out of NICTA, or from other entrepreneurs here in Australia, so that if that company is successful all the people around that CEO could then go off either back to NICTA and spin out another company, or start their own start-up. I think there will be many seeds that will come out of this program. It will not just be two companies.

Mr QUICK—Are you also involved in changing the mindset in our superannuation funds and our large banks? You mentioned the thin capital base. I mean, if you used perhaps 10 per cent of what is in our superannuation funds, you would have enough venture capital to stimulate and support every venture initiative in Australia. What do we need to do to change that mindset in our huge banks and our superannuation funds?

Mr Morris—What we should not do is mandate that a certain percentage of those funds be bigger. What we need to do is prove that this alternative asset subclass is worthy of investment. We need to put the different pieces of the puzzle together that can demonstrate to the guardians of that superannuation money that this deserves their attention, that the data or performance is worth putting 10 per cent, to use your example, into this area. We need to be coordinating all these different things and that is why our ultimately our aim should be about attracting capital into this area.

Mr QUICK—With our burgeoning overseas debt there is the potential here for us to change the direction of that. How do we convince the ordinary average punter, who has their superannuation invested, or Westpac or the Commonwealth Bank and the like, or the executives on numerous boards earning zillions of dollars that somehow with that money, their children and their children's children are going to benefit from all this wonderful technology that is springing out all over the place. We have a plethora of programs the poor bastards don't understand, they have to fill out countless 30-page forms from AusIndustry, COMET or whatever the program is and they are totally frustrated.

Mr Griffiths—Something you need to be conscious of is that Brett's area is actually a very specialised area in the commercialisation continuum. He accounts for one to two per cent of the companies that are trying to commercialise, and will put bigger money into them and try to make them bigger successes doing IPOs and things like that. The Entrepreneurs in Residence is a classic thing for that particular segment of the market. We are very supportive of it and have worked with NICTA. We actually have one of their prototypes, their first spin-out, is now one of my COMET companies. It is great to see the quality of management teams.

On your first point about entrepreneurs, I would like to see a lot of the sea change guys and 50-something guys who have been executives in organisations, who may not fit with some of the more high growth start-ups, get into some of the smaller companies. They could provide their experience and contacts, and may be some of their superannuation money, to build a wealth of smaller successful companies that get up to say \$10 million worth of revenue. It is about creating that platform. One of the things you said there, which is a prerequisite, is they have to have the money to reduce the risk for these guys to enter that environment.

The other thing about superannuation and banks is that there is no doubt that there is a significant tranche of money sitting above our marketplace. I imagine that every day Brett says ‘Oh gee, bring it down to us’—and from our space as well. We see a lot of money available for management buy-outs in the private equity class at the next level, the Macquarie Bank-type areas and the like. It is very hard for that money to come further down. In fact, Brett’s area, which is early stage venture capital, is an extremely hard area globally in which to make any money at all because he is investing proportionately a very small amount and trying to then leverage or change the business model of the companies, bring them to market and get a liquidity event that makes money.

We have a market where banks will give out credit cards to individuals, with limits of \$20,000 or \$30,000, just like that. Yet we cannot get the banks to put any money in at all, whether unsecured or secured against the IP, in any way other than secured against private assets, for instance the entrepreneur’s house. We cannot get them to put in the money. In the US, there have been things like the SBIC program, which has had some problems, but some of the fundamentals of that program where they back or underwrite some of these things, is potentially a way to get a lot of this superannuation money down into our space. It may not be venture capital money but a more generic banking product that allows some of these older guys to come in. Get some grey hair and experience into this market to solve some of the entrepreneurial problems. There are the high growth, silver bullet type that these guys are looking for and then there is the market generally. There is probably a broad range of things that it would be good to see solved. The one thing that I would say is that no other country on earth seems to have solved these problems either, so it is not easy.

CHAIR—You have made our day, David!

Mr Nelson—On the question of how do you attract superannuation capital, I think the answer is simple but how to achieve it is hard. Until you can say that over the long term, this asset class will generate 15 per cent returns on average and Australian shares will return 10 per cent on average—it is more risky but at least you can see what you are getting with the information repository. Until you have that information I do not think you can expect superannuation funds to make uncommercial decisions or decisions without that degree of certainty.

Mr QUICK—Yet some of the entrepreneurs, or the ordinary punter, will say ‘well look at HIH’. It collapses without warning with billions of dollars worth of debts yet insurance companies are bleeding dry and putting a whole series of impediments in place for small innovative companies, dragging them through pages and pages of having to comply with all these requirements in order to get public liability and all that sort of stuff. They can go belly-up and society says well who gives a toss. As a House of Representatives committee, we need to come up with some recommendations that really put a spoke in the wheel to change the

direction. Something needs to be done when you look at our burgeoning overseas debt. We have the ideas. For Christ's sake, we have heaps of money stuck away in superannuation and the banks. How do we change the system around? What would you do?

Mr Griffiths—The one issue here, which I alluded to previously, is that it is great funding these companies but the superannuation funds at some point want the money back. If I invest in a private company then I get a share in a private company that I cannot sell on the market. Chances are the company will not have much in the way of dividends, if any, therefore the only way I can get my money back is if the company is sold or it goes public. The chance of that happening is limited if you look at equity transactions. I firmly believe this is where the banks, or somebody else, needs to come into play. You have to look at loans because the liquidity event against a loan is a lot easier; it is revenue. If you bring in revenue, you can pay your debts. You can pay back a loan. You do not have to sell your business in order for your shareholders or stakeholders to get their money back. That is the issue. If you want to fund many companies, you need to look at how the money is going to come out again, as well as how it is going to go in. To my mind the only way that is sustainable beyond an expanded VC industry, which we need anyway, is through loans.

Mr QUICK—I mentioned 10 per cent as an arbitrary figure, but even if we got it down to five per cent of what is in the superannuation funds, you would have more money than you had ever dreamt about.

Mr Griffiths—Well if you had that you could probably fund most of the world's early stage capital needs.

Mr Nelson—That can only be a market driven event as opposed to us mandating it. One small piece of anecdotal evidence might be the industry super funds backing Pacific Hydro. It is not in our asset class but it is an alternative asset class, and it demonstrates that some are prepared to take a longer-term view with their superannuation funds. If the industry can demonstrate a longer-term track record then money will gravitate towards it. Unfortunately, I do not think there is a quick solution to that.

I also wanted to come back to the point about attracting and creating more entrepreneurs. As Brett said it is a skill set, but it is also a mindset—people who understand and are prepared to take on risk. It is about making a young executive who can go and work at Macquarie Bank or run his own company, actually view that trade off and that decision in a positive light towards the early stage industry. Various things like taxation of options, even setting aside training schemes and so on, are important and meaningful determinants of the decisions people will make about their employment, whether to take an entrepreneurial career path as opposed to a standard career path.

Mr QUICK—Do we face a problem here that we have six states and two territories all doing their own thing and muddying the waters, whereas in some countries you have a national approach to issues. I am talking about planning laws. You have the silo mentality in each of the states about planning and development research, science and technology. They all have their own little silos. Then you have the Commonwealth government silos, the universities and medical centres, and then the venture capitalists and the poor bastard out there with a bright idea.

Mr Nelson—I think what you are saying is it is a manifestation of the problem that Brett was alluding to about different agencies and different sources of information. All are useful in their own right, but how can they be consolidated so they are uniform or seamless? I think that is a problem, but is not the major problem. Consolidation would be an efficiency gain, but it is not the major problem.

Mr Griffiths—I would agree with that. I see my compatriots who look after Queensland offer a different range of things for their companies than perhaps I do here in New South Wales, just because of the different ways that state governments support it. However if I looked at one thing that would make a massive difference in our space, it would be lowering the tax rate for angels to invest in start-ups, making it far more financially attractive for them because there is so much more risk attached to it. We do not really get that many high net worth angels reinvesting in the marketplace. Right now, even the guys who have made money in software companies are not investing in start-up software companies.

Mr Nelson—There is a corollary. There is a CGT exemption for sale of a business that you put into superannuation. Perhaps something similar could be enacted for investees in the early stage sector, however that is defined. There probably is a precedent.

Mr Griffiths—That may also help in getting more of the entrepreneurs in. Quite often it is not having professional investors betting on one person or on someone else. Quite often it is guys who want a job. They are at home, bored, and they want to do something that is useful and interesting in their space, put some money into it and also work in it two or three days a week. I know that causes other issues.

Mr Nelson—Can I make a different point about the construction of programs in relation to the VCLP in terms of where the government seeks to quarantine the benefits in Australia, insofar as your company has to have X amount of your employees or your IP, or whatever it may be, residing in Australia. I think it is undeniably the case that where the business stays in Australia, Australia gets all of the benefits. However, I still believe that a company with its shareholders in Australia, that has since successfully migrated to the States and is exporting all around the world, if that company sends \$50 million back to its Australian shareholders, that is a better outcome than not having had that company at all. That furthers the legacy of entrepreneurship and early-stage innovation. Therefore, I guess, I would be against rules that prescribe certain amounts of the company having to stay domiciled in Australia.

Dr WASHER—Marc, if I could ask you this question. Taking the concept that the US has, to encourage our entrepreneurs to invest in the type of new high tech businesses we are envisioning, I would imagine many of the US investors would come out of high tech industries themselves, whereas I would imagine here the bulk of large wealth comes out of mining or property type wealth. That is an older style wealth. How can you convert that? We are a generation behind, as you alluded to, that type of person to run a high tech type company. Is this what you imagine you are going to try to achieve, and if so, how would you do that?

Mr Woodward—It might be difficult to take someone from the mining industry, for example.

Dr WASHER—I am just using that as an example, but it is a quantum leap difference.

Mr Woodward—I think that would be very challenging. You would have to find executives who were already in IT or have degrees in computer science or electrical engineering so that they understand the technology. You could not take an IT executive and put them in the mining industry, they would not know what to do. To a certain extent you have to encourage people that are already in that industry, or in very close industries, to start taking risks and get into start-ups, or supporting start-ups either through investment or as an executive.

Dr WASHER—Sure. The second question that David brought up is that it would be good to get the banks to invest in these and have some sense of property ownership on the company, without taking a real estate value to raise revenue. If that is the case, has it been done in America, and if so, if you default, and you have intellectual property or whatever the technology as the bank perceives the value, have they got people there that can perceive the values for banks to loan on that and can you trade that? If I am a banker and I do my dough, given I do not have your property to take away, can I take the intellectual property. Can I trade it? Is that type of thing happening in the US?

Mr Woodward—It sort of goes in cycles. When times are great there are certain banks within Silicon Valley, for example Silicon Valley Bank, which has a specialist group that will loan capital to start-ups and will secure it through IP. Typically, they will ask for a certain amount of equity either through options or warrants or what have you. It is not very prevalent but there are specialist firms within Silicon Valley, and in Boston and Texas, that will do that sort of thing. Silicon Valley Bank has really been the most famous one.

Mr Nelson—Can I make a suggestion? In terms of the discussion about should banks be encouraged or required to lend into these kinds of areas, they choose not to largely today on commercial grounds, it is not their business. I would not be seeking to make them. In terms of a different and probably better path to liquidity, like the example we have from the UK of the alternative investment market. Create, if we can, an exchange that is dedicated towards that rather than pushing banks into an area in which they are clearly uncomfortable and do not wish to participate. If we could create a secondary type exchange, which has been tried before, that to me would be a more effective means of creating liquidity and incentive in this sector.

Mr Griffiths—My perspective on that is I agree with the aim. I think it is interesting and I know that Newcastle Stock Exchange has talked about that sort of stuff. The issue with the banks on securing IP is that clearly there is no market—trying to get a market for it is essentially an unsecured loan. That is where something like, I understand, the SBIC program in the States will actually underwrite a certain percentage of the loan, so it actually reduces the risk attached to it. That may be a very interesting thing to do. Right now, Brett and the VC guys will invest in say 10 or 20 companies, but at the end of the day what we actually want are the banks investing in a thousand companies. At that point, it is about portfolio risk, just as it is with credit cards. It is running the actuaries, working out what the numbers are and working out what the interest rate has to be, because you will have a certain amount of failures, but you need the scale in order to do that and that again fits in with some of the superannuation things but they are not interested. Brett has \$75 million under management, that barely touches the sides of one superannuation fund putting a bet on something.

Mr Nelson—If you change the risk profile and underwrite risk so people can make a loss and effectively not suffer the pain of it, I think you encourage behaviour that perhaps may not be

optimal. This alternative market, if you create liquidity at the end, you are creating additional incentive for business angels to invest up-front because you have changed the risk profile, and it is more likely you will see a return. Again, there is no clear answer.

Dr WASHER—David if I could make a quick comment. We would probably take more grief from our shareholders, the taxpayer, than the bank would from theirs. So we would be a bit nervous.

Dr JENSEN—Do we have a problem with these big financial institutions where fundamentally they do not understand this business? You guys all have a good understanding of the technological business—they do not so they keep investing in what they know and they understand. Do we need to have an education process for the big financiers?

Mr Nelson—I think it is clear the banks will not put their capital to lend towards these kinds of companies. Whether it is because there are better investment opportunities elsewhere or they just do not have the skill to invest in the sector, that is something we have not touched on too much. Because it is highly specialised and requires skill, you could embark on an education program, or you could find those current or potential people who are specialists and focus on them. My view would be to go down that path rather than forcing people like banks to become specialists in the field.

Mr Griffiths—I think if you talked to the old guys at the banks, they would say 20 years ago when they were account managers, that they went out and they walked the shop floor and they actually knew the companies and the companies would come to them. There was an element of expertise, and you had it with the rural guys with farms and things like that. Obviously as banks had to become more efficient and play the numbers they backed away from that sort of personal service, particularly for smaller companies, because it was uneconomic. As David said, it is very hard to mandate that, yes, they should do that. They are very aware that there is a whole SME market out there, probably 50,000-odd companies for each bank, that they could potentially service in some form. They are economic institutions, so if they could, they probably would. It is about getting over that hurdle for them. As I said, it is not just an Australian thing. This is something that happens worldwide. Banks do not support young companies.

Mr QUICK—But then they make decisions and buy banks, and suddenly do \$260 million in the Scottish Bank, or whatever the bank was that one of the large banks bought, and they just write it off, and when they have the annual general meeting the numbers are done and ticked off. Yet if you said to them, let us put \$260 million into venture capital, they would put their hands up and say they cannot do it because of all these rules and regulations. These are numerous instances where banks make decisions, buy other banks, it goes into a hole and they just write it off. They say one thing and do the other. I think it is about time they put their money where their mouth is.

Mr Nelson—Love them or hate them, you only have to look at bank share prices 20 years ago and what they are today, and the banks can say, with justification, they have created shareholder wealth doing what they do.

Mr Griffiths—I guess it is outside our expertise.

Mr Morris—I would be highly sceptical about anything that targeted the banks. I do not think this core focus of commercialisation of science and technology, the business that we are in and the area that you are interested in, is a target for the banks. We need to make this area attractive as an investment target. The more attractive we make it, the more capital we attract. There is no short-term fix to doing that, but we need to attract capital and it would be good if we could attract three to five per cent of the superannuation funds. We know that right now 30 per cent goes into offshore investments. So how do we keep three to five per cent locally? How do we make this commercialisation area, in all its different manifestations, attractive—and attract the capital? That is what we need to do. That is why I propose that we need a coordinated 10- to 15-year view of how to attract that capital, improve the risk return model for investment in this area, and be able to demonstrate quantifiably the performance to date. There are a lot of companies that are cooking right now, invested in by ourselves and many others. They are yet to be proven but they are cooking.

CHAIR—Can I ask you about the repository. Would the result be positive? We have tried to find successful innovations and commercialisations but have had some difficulty in finding lots.

Mr Nelson—If you simply clear up uncertainty would be a good outcome because then you will not have misallocation of capital. If it turns out that this is a bad sector to be in, we want to know that as much as the next person. Simply knowing what the results have been is important.

CHAIR—So you would be comfortable if the results said it was a very bad area; do not put your money in?

Mr Morris—Let us look reality in the eye and understand it.

Mr Griffiths—I think these guys invest money in this space. I try to facilitate that. It is clear that we have a very thin coverage base for the early stage. If I want to invest \$300,000 in an IT company, it is Mr Nelson's company. In New South Wales there are two companies doing that, and they may do five or 10 transactions a year. If I want slightly more, there are four companies.

Mr Morris—Straight away.

Mr Griffiths—As I say, I have hundreds or thousands of companies. That is the immediate issue we have. We have thin coverage in this gap. Once you go above that, you bring in a lot more. Even the banks and such like, where you want \$5 million or more and you have the business case to do it, the numbers start to go up again, but right down here you can count on the fingers of your hand how many companies we have who are actively and regularly investing in our space.

Mr Morris—Part of capturing that historical performance data, is not just the successes, it is the failures as well. It is about learning what happened, where it went when it went offshore. There is this constant story about how difficult it is to take companies into the US market. That is a key focus. Our particular focus in Neo is actually how we take them in, it is our primary focus. We have a couple specifically that we have backed to do that, and have done that successfully in the last couple of years. There is a lot of data out there that is disparate and fragmented. It is all over the place. There are success stories and there are failures. We need to

capture that, we need to understand it and learn from it to tell us about how we continue to iterate a better model for how to commercialise.

Mr Griffiths—How many companies are not maximising their potential because they do not have access to that certain amount of money that can put them over into the next league? They are just happy going along at that happy medium because it is all too hard. They have been working for 10 years to get up to there and they are sick and tired. They are just happy to be in that little niche.

Mr Morris—The potential to succeed is there, and we should not shy away from failure. Failure is part of the process and we need to understand that failure is a counterpart of success. It is an important part. Frankly, sometimes I think the media will give more attention to a dead cat on Parramatta Road than they will for a lot of entrepreneurial success. We are often too quick to criticise where things have failed, but those failures tell us about what we could be doing differently next time.

Mr Nelson—The other thing is that in our space, companies do not necessarily plod along waiting for money to be available. They have a very short half-life. Someone will say, okay I will quit my job and try to commercialise this technology. They will give it 12 or 24 months. They will go and see Brett, and because he has 100 people to see and can only invest in one, he says no even though the technology may have merit. That person does not stay in the sector; they go back and get another job. That window of opportunity dissipates and is gone.

Mr Griffiths—There is no doubt we have a broad mass of innovation in this country. We have great technical expertise, we have great IP coming out into the market. There is no doubt about that. I have been constantly surprised over the last four years about the quantity and quality of companies that I am seeing. How many of them are chronically under capitalised? Almost every single one. The odd lucky one will get to the table with me.

Mr Morris—The other reason it is important is that each of the entities Matthew talks about goes through a life cycle. It might be five, seven, eight, or 10 years and there are different requirements through that, but they have a capital requirement through the entire life cycle. Whilst there are only four or five people in our comparable peer group actively investing in the early stage venture capital area we need more because it actually helps each of the venture capitalists. We need to co-invest alongside other investors because it ‘de-risks’ that entire investment life cycle. It is also important for that reason.

CHAIR—Can I thank you very sincerely on behalf of the committee. We have only scratched the surface because we are just politicians, but it has opened a lot of avenues and we might come back with further issues after we have had some time to absorb this.

Mr Morris—Happy to help.

Proceedings suspended from 12.32 pm to 12.38 pm

BRADLEY, Dr Mark Philip, Chief Executive Officer, Australian Technology Park Innovations Pty Ltd

HAWTHORN, Mr Hamish, Director, Life Sciences and Technology, Australian Technology Park Innovations Pty Ltd

LINDOP, Mr Charles, Director, Business Programs, Australian Technology Park Innovations Pty Ltd

CHAIR—We are not taking evidence under oath but this is a proceeding of the parliament so you should be aware that false, misleading and otherwise tendentious statements could be treated as a contempt of the parliament. Would you like to make an introductory statement before we proceed?

Dr Bradley—I have timed it, and it takes five minutes. Thank you for the opportunity to appear before the standing committee today. I thought it would be useful to begin by outlining in more detail the role that ATP Innovations plays in assisting commercialisation of emerging technologies in Australia. was Established in its current form in 2001, ATP Innovations is owned by four universities, as you may be aware: the University of New South Wales, University of Sydney, the University of Technology, Sydney, and the Australian National University in Canberra. The organisation as it is today was formed as part of a wider ATP restructure in 2000 and 2001, and I can explain this further during the tour later on.

Despite our name, we are not responsible for the whole of park management. This responsibility falls under the auspices of the Redfern Waterloo Authority which was recently formed by the New South Wales State Government to reinvigorate this whole region adjacent to the CBD. Our key role is to act as a commercialisation facilitator, similar to but broader than an incubator. We have made a conscious decision not to call ourselves an incubator which we believe to be an outdated terminology and certainly not fully descriptive of the broad range of functions that we undertake.

We operate primarily out of the National Innovation Centre, or the NIC as we refer to it, over which we have a long-term peppercorn lease. In addition, we have some facilities in an adjacent building, the biomedical building on the park. In partnership with the New South Wales Department of State and Regional Development, we have developed additional space to create the first biotech precinct. We have part of it here in the NIC, and part of it down in the biomedical building. This has all been done under the New South Wales State Government's initiative called the New South Wales BioFirst Biotech Strategy. Our facilities enable us to physically locate our clients on the park and we have used this to our advantage in creating a cohesive community of entrepreneurial companies. Indeed, one of our criteria for selecting companies to come in here is that they must be prepared to be part of an interactive community and not sit in little islands of isolation. We also have virtual clients who reside outside of the park in addition to several anchor tenants which are research groups. Our clients come from both the public sector, which is primarily universities and our shareholder universities in particular, and private sector sources.

Our activities can be summarised as follows: we work with industry, primarily through working with peak industry bodies, in many of which we have a level of professional involvement. For example, Hamish is the chair of New South Wales AusBiotech—a biotech peak body; Charles is on the New South Wales committee and chair of a subcommittee of AIIA, and I am on the advisory council of AEEMA, the Australian Electronic and Electrical Manufacturers Association. We have built strong relationships with relevant Federal Government Departments, AusIndustry, Invest Australia and DCITA to name a few. We always seek the opportunity to provide input into policy developments and work where appropriate to assist with various programs and initiatives. In New South Wales we have excellent working relationships with the Department of State and Regional Development and the Ministry for Science and Medical Research.

We have established a series of structured business programs to serve our clients' needs. These are called bizStart, bizConnect and BizNetClub. We support early stage investment through our subsidiary company, bizCapital, and this is aimed at very early stage high-risk ventures and to date we have concluded two investments. We promote professional development and create significant network and sectoral engagement opportunities through BizNetClub. Through this we run two-monthly sessions which are now very well regarded with very high attendance rates. Our members include our clients and individuals from the private sector. We are an in-kind supporter and a regular contributor to the New South Wales Enterprise Workshop. We are in the process of developing an international program which we call the World Innovation Network which will facilitate our clients entering new markets globally. We regard this as an internal skunk works program that we are working on at the moment. We focus on convergence of technology, bringing together companies working in the biotech, ICT, electronics and increasingly the advanced material sectors. It is our contention that having such diverse sectors represented in close proximity encourages innovation to occur across sectoral boundaries.

There are five points we would like to focus on. The first revolves around university commercialisation and the balance between licensing activity by these institutions versus new company formation or spin-out activity. The current arrangements around access to commercialisation programs, both within universities and by supporting organisations and also access to the Commercial Ready programs. The other two points are early stage investment and possibly the role of angels and what we are trying to do with bizCapital, and why we think it fulfils an important place in the market. Finally, the developing of international linkages for market access and commercial opportunity.

CHAIR—Can you give us a sense of how the place works?

Dr Bradley—We have two types of clients. About 70 per cent of our clients come from the private sector, and about 30 per cent come from the public sector and primarily those are the universities. We have different modes of engagement around those two groups. With the private sector, referrals are our primary source of new companies seeking to come here and become involved in our programs. We have worked very hard over the last four years to build the profile of the organisation. It is well known in Sydney and parts of New South Wales. That referral process has been the best avenue for new deal flow. With our universities, we tend to work on a project-by-project basis, working more intimately with the commercialisation offices in trying to help spin-outs which emerge from the universities. We may invest in them during that process,

and then ultimately they may either decide to come here as a client in situ or we continue to work with them virtually. So, that is the process.

Mr Lindop—I think it may just be worth clarifying how the organisation sustains itself. It is essentially a fee-for-service model with our clients, but we recognise that many of our clients, as emerging technology businesses, are cash constrained.

CHAIR—A nice term!

Mr Lindop—The missing element that made it very hard for organisations such as ourselves to survive has been filled by the development of the park by the universities. We have this building on a peppercorn rent and it allows us to make a profit on the property side on tenancies that then allows us to cross-subsidise and provide very effective fee-for-services to the emerging technology clients. If you look elsewhere, in the US and Europe, for organisations such as ourselves to survive there almost needs to be that extra pot of money from somewhere to allow somebody to provide a subsidised fee-for-service to help emerging technology companies. In our case, it is essentially through an endowment of a real estate asset. In Europe it is often through funding from the EEC, and in the States it is often from funding from state governments.

Dr Bradley—I should just point out that we get no annual subsidies from our shareholders. We have to operate on a break-even basis. We certainly get no government subsidies. It is very unusual in almost any organisation like ours globally to be able to operate in a sustainable way. We are quite proud that, if we have a couple of years where we might make a small loss, that we have sufficient reserves to allow us to cope with that.

CHAIR—Why would a company come here; for cheap rent?

Dr Bradley—No, we do not charge cheap rent. They come here because we provide—

CHAIR—Why would I come, if I had a company of some sort?

Mr Lindop—To try to take advantage of the lessons that other people have learned. Most people starting a technology business a starting a business for the first time. There are many opportunities to take the wrong fork in the road. By coming here, in essence, they avoid the wrong fork in the road and they do that by taking advantage of advice from ourselves and very importantly from a much broader network, the community that revolves around here. There is a very strong peer level network amongst the CEOs and there is very strong support from the advisory community which sits around New South Wales at large, whether that is private sector or government.

Mr QUICK—Once you are here, how long do you stay for, as long as you like, or at some stage do you guys say, look, you have been for 10 years, it is time you moved on, you are big and ugly enough to look after yourself?

Dr Bradley—There is a natural point for what we call migration. Many incubators will have a graduation policy that says you can stay 12 months, 18 months, 2 years or 3 years; we removed that policy because we realised early on that companies do not form and grow according to a formula. Companies that are going to fail early, we help them fail early. We have a program

called bizStart which is more or less designed to do that. It is about testing the business model. It becomes obvious early on if that business is not going to succeed. With other companies, as they grow there are a number of things that happen: first, they need less and less of our services, they become more and more independent, they become quite large in many cases and they are obviously profitable. There is a whole range of factors that lead us to determining when a company should migrate to either somewhere else in the park or into their own facility.

Mr QUICK—Is there somewhere else in the park that they can migrate to?

Dr Bradley—Yes, the rest of the park is run by the Redfern Waterloo Authority, and there is lots of space for more mature companies who do not need the business building hand-holding to relocate to if they desire.

Mr QUICK—Is this the only place like this in Australia?

Dr Bradley—No, there are similar places but they tend to call themselves incubators. The difference is that we are located within a wider park. There are not many facilities that I am aware of around Australia where you have a company like ours that does all the coalface business development, and then allows those companies to move into different facilities in an autonomous or semi-autonomous way. There just have not been the facilities built to allow that to happen.

Mr QUICK—It has been asserted that, if you wanted to set up a private place similar to this, the zoning laws prohibit multiple tenancy. Would that be right?

Dr Bradley—I could not comment on that. I know nothing about zoning laws and tenancy requirements.

CHAIR—Can you tell us some more about the services and how they are delivered?

Mr Lindop—We have created a number of programs which are understandable to our clients. One is a program called bizStart which is about validation as to whether a technology idea will be a realistic business. There is a significant difference between a technology and a product, and also between a product and a profitable business. So, bizStart is all about market validation. If other people think it is a good idea, if the market says it will buy it, then you know you have the chance of a profitable business. So, bizStart is all about helping technologists understand how to validate a market opportunity. Typically technologists are not very good at communication and they have very weak networks within their chosen market sector. BizStart is about bridging that gap, predominantly through non-executive advisory services and through our relationships with the industry associations across New South Wales and globally, providing access to markets to help people do that validation.

CHAIR—What are the non-executive advisory services?

Mr Lindop—You can see we have a coffee shop opposite in the atrium. It is a little bit quiet today because the afternoon is cold on such a blistery day.

CHAIR—Does that mean they sit here and they mix and have coffee together, which sounds good enough?

Mr Lindop—Yes. Technology commercialisation occurs on two legs, so bizStart is very much about creating those networks. That is simply meeting with people, opening up the Rolodex and providing a warm contact rather than a cold call. There follows a level of mentoring on a one-on-one basis, either directly by ourselves or on a peer level because we have 40 client companies. The support tries to break down those barriers and understand how to validate whether a technology can make a business.

Dr Bradley—There are some even more fundamental things with which we are involved. When we invest in a company, we are in there as part of almost the management team and become involved in issues around product development, raising capital, where the next funding is going to come from and the day-to-day business stuff.

CHAIR—Is it more than informal advice? It sounds like a drop-in centre.

Dr Bradley—It is not a drop-in centre.

CHAIR—I understand some bits of what you are saying, and I think they are very valuable, but I cannot actually understand the hard bits.

Mr Hawthorn—It can take the form of reviewing the business plan.

CHAIR—By whom? Tell me about the business plan.

Mr Hawthorn—A company may be looking at launching a new product, for instance, from our collective wisdom we are able to provide input into the development of that business plan, draw on our networks to validate some of the markets that they are looking at—

CHAIR—What do they do? Do they knock on your door and say, I need some help, and you say sit down?

Mr Lindop—If they do not knock on our door, we will knock on their door.

CHAIR—You say, do you need any help?

Mr Lindop—Yes.

Dr Bradley—We formally sit down and review their business at least twice a year, and that happens, but the reality is that for 12 hours a day, five days a week, there is a huge amount of knocking on the door, ‘can I speak to you for 10 minutes’, which they would never get anywhere else.

CHAIR—That gives me a sense of what is going on.

Mr Hawthorn—And it is much broader than just the business plan. It is also facilitating access to government programs, using our collective experience, whether it is personal or

through other clients that we have helped. It may be a similar process with the venture capital community where we say, 'This is the way that you might present your business', because we have a strong relationship with the venture capitalist and we know what they are looking for. That is invaluable compared to a company knocking on the door off the street and handing over a business plan.

Dr WASHER—On a slightly different tangent, you offered to talk about commercialisation in universities. I would love you to do that because I come from Western Australia and UWA have had me down a number of times to say that because of the federal government, they have some limitations in commercialisation in universities. As we are a federal government committee, if you could tell us about that I would be most grateful.

Dr Bradley—In our experience, we have found one particular issue to be a barrier. I know the person you are referring to at UWA, and he is also chair of KCA, and I actually have their submission which highlighted this point. I will ask Hamish to make some further comment on this. It is quite a complex process trying to spin a company out of a university, in those very early days. In the majority of cases, universities are the effective owner at that time as either the entire shareholder or the majority shareholder. There are many things going on during that early phase. The hardest thing to get hold of at that point, apart from sort of good business advice—and that is where we try to fill the gap—is money. Under the old programs that were run by AusIndustry, with the BIF grants, for example, that was more accessible. Under the new Commercial Ready programs, when effective ownership of these spin-out companies is held by the universities, they are ineligible to apply for any form of Commercial Ready funding. That severely limits the opportunities to inject capital into those companies at that most critical point.

The irony is that sometimes you can line up other investors who may be prepared to match funds, but if they are ineligible for Commercial Ready, then that is really just a moot point. We have fortunately been involved recently in investing in this spin-out, we have matched the money in the BIF grants—before the old programs finished—but we now really need the equivalent of an early stage, of the old R&D Start grant type. We are pretty sure we could get matching funds for this, so it means that we are having to look at alternative ways to bootstrap this company over the next 18 months. It is the point where it is most vulnerable because it needs management brought in and it needs to complete that process of migration from the university into a more commercial setting. So, that is the issue. How it is addressed, I suppose, is up to this committee and your colleagues. Hamish has also had some experience with this.

Mr Hawthorn—I might just add another aspect to that issue of accessing Commercial Ready. It is a key issue for being able to leverage investment. If you have two similar deals on the table and a venture capitalist is looking at both, if they are able to leverage dollar-for-dollar their investment in company A versus no opportunity of leveraging company B, you are at a substantial disadvantage. The other issue, beyond Commercial Ready, is in the R&D tax offset. Again, the wholly owned subsidiaries of universities are limited by grouping rules and exempt-person ownership, and this prevents them accessing the tax offset. Organisations that are able to be eligible for that funding can access up to \$370,000 a year in tax offsets. That is funding that an investor is not seeing on the books as potential cash flow over the life of the project. It is a significant disadvantage. I am not sure what the solution is there, because you also have the issue of the tax office and Treasury coming into play as well. It is important to stress the intent there,

that university spin-out companies are perhaps being disadvantaged somewhat against private sector spin-out companies or start-up companies.

Mr QUICK—What about CSIRO, are they eligible for Commercial Ready when they have their spin-offs?

Dr Bradley—I am unsure about that, it is probably more complicated. I understand that the basis for this is that universities are tax exempt. I do not know whether CSIRO is tax exempt or not.

Mr Hawthorn—It also comes to grouping rules. Commercial Ready has a \$50 million group turnover cut off for funding to prevent a wholly owned subsidiary of BHP applying for funding. But a wholly owned subsidiary of the University of Sydney is not in the same situation as a well-funded research division of BHP. Likewise with the CSIRO, if it falls under those rules, then they would also be exempt. Now, there are some ways around this, but it is not just simply being treated on par with a private sector company or start-up. That is a barrier to the commercialisation of university research at the moment.

Dr Bradley—The corollary is it is very costly and very resource intensive to create spinouts. Universities do not create lots of spinouts. Globally they do not create lots of spinouts despite the rhetoric we have heard over the years that universities should be creating more. The reality is that for universities it is expensive, it is time intensive, it requires huge amounts of resources, and it is high risk. So the corollary is that you tend to get licensing of intellectual property occurring as the easier pathway to capturing some value from your intellectual property. I will not argue whether that is good or bad, because they both can be beneficial. If you want to create new businesses, and particularly high-tech and knowledge based businesses, then it is difficult if you have these strictures around you.

Mr QUICK—You mentioned one company. Are you going to be asking for a regular amount of money each year? If you receive it for this one, do you then have a track record to say, there are two or three others that will come along and base themselves here. You have mentored them through the process, got the Commercial Ready money, and they have moved on to the next stage and have left as a big success story, and it is runs on the board. Would you see it working that way?

Dr Bradley—Yes, that would be the normal way. This was the way that it has happened in the past under the R&D Start program. Companies will leverage up two or three Start grants at various levels. Sometimes they used to go for the concessional loans. There was a good range of programs there, but as long as they have effective ownership by a university, they cannot have them. At some point in time, you are going to bring in private investors. Some private investors are happy to leverage their money against government funds for a period of time, and others have some problems with that. There is a whole range of ways you can get this money, but it is very, very hard, despite the fact that we have pre-seed funds out there.

Mr QUICK—Is there any state government funding in this area?

Dr Bradley—Not in terms of investment into businesses directly. There is no early stage company start-up fund. I will let Hamish talk to that, because he used to work for the Department of State and Regional Development.

Mr Hawthorn—There is a small amount of support for emerging companies in New South Wales, but the primary source of funding is in the biotechnology sector, through the BioFirst Strategy. We are very fortunate in New South Wales to have a supportive state government that provides funding for those non-R&D type activities; business development; the formation of robust financial systems for a technology company; the market analysis and market development that is so essential to building a strong and sustainable business model. They also have some small amounts of funding for international marketing activities. For instance, there is a very strong delegation this year going to BIO, the world's largest biotechnology conference held annually in the US. We are very lucky to have that support from the New South Wales government however, there is not a source of funding for the R&D phase. Traditionally the state governments have looked towards the commonwealth to provide that funding.

Dr Bradley—The amounts that the state government put forward are very modest. You can get some support to help protect your intellectual property in the early stages, but I think it is up to a total of \$70,000—

Mr Hawthorn—Up to \$75,000.

Dr Bradley—Obviously you would not turn that down, because it can be pretty important, but it is fairly modest.

Mr Lindop—You should mention the Australian Technology Showcase.

Dr Bradley—It is a national program now, called the Australian Technology Showcase, but it started prior to the Olympics. It has over 400 companies that are showcased nationally. I do not know what the sums are—

Mr Hawthorn—They provide \$20,000 on a matching basis.

Dr Bradley—It is about a business that already has some product. It is about getting out there, marketing and getting international exposure. It is a good program; we are very supportive of it. We try to get all our companies on it if we can.

Mr QUICK—Regarding the four universities here, what is happening down in Victoria? Are they working collaboratively? I come from Tasmania. UTAS is a mickey mouse player compared to the rest of the universities. What is happening at the University of Queensland and in WA? Do we have little rail gauge mentalities where everyone is doing their own little bit? How do we get a national approach to compete against the other countries? We have the technology and we have the entrepreneurs, but we just seem to have a blockage somewhere to maximise what we are capable of doing.

Dr Bradley—The critical mass is important. We also have to realise that there are regional and state differences. In New South Wales, particularly since the new Ministry for Science and Medical Research was formed, they are working very hard to pull together in a more cohesive

way different research institutes. New South Wales was typified by all these people working in silos. They have worked very hard, and I think they will pull that off over the next few years. In Victoria, particularly in Melbourne, there is a company called BioCom which has about 24 members. They are university and research institutes that have signed up on a subscription basis. That company helps those institutes commercialise their technology. They are not a physical incubator or a physical facility, but they do the business commercialisation stuff, as well as raise funds and get investment capital and so forth. That is a really interesting model.

I used to live in Western Australia, and I know that it can be quite frustrating that you are so far away from the rest of the Australia. Often the things that go on there tend to reflect regional initiatives and regional differences. There is a lot of work going into the mining sector and engineering sector over there. In Queensland, we all know that a huge amount of money has been poured into particularly the life sciences and the smart state initiative. We sit here in Sydney and think of Queensland as being this powerhouse that never stops in terms of science and technology commercialisation. Some of that is more perception than reality, but I take my hat off to the amazing amount of work they have done to try to pull this together. They have learnt lessons from other people about what they should do and what they should not do. I am impressed by what is occurring in Queensland.

In terms of trying to bring this together, there was a frustration expressed two BIO conferences ago in the US when most of the state premiers, and certainly the director-generals of the relevant departments, were in attendance. Every state was getting up and saying, 'We're going to be the leader in biotech in Australia or the region or the South Pacific or Oceania or whatever.' But so was every state in the US, and so was every state in Europe. Several people came back here and said, 'Enough is enough; we've got to do something under one banner.' As a result of that, all of the states in Australia have now signed up at last year's BIO, including New Zealand, to form something called the Biotech Alliance, in which they are ideally meant to go forward with one face internationally. Whether that works or not remains to be seen, but that is an attempt to try and allow individual states to do their own thing whilst maintaining a global face that says they are united.

CHAIR—If I am a business and I come here, I get space, I get proximity to peers, I get advice. What else do I get?

Dr Bradley—You get education. Through BizNetClub we run this ongoing professional development program. You get the opportunity to leverage off other people's knowledge. You said 'peers'. It is more important than that because one of the things we notice is that many of our companies will buy and sell products and services from each other, or they will say: 'I need to make X and you are an expert in widget X manufacture. I do not want to know how to make it, but I need it for my product.' So you get a lot of that happening, which would be much harder when you are sitting in a more isolated industrial centre.

CHAIR—That is essentially about proximity. Do you do market research for them, or is it essentially the communication of wisdom?

Mr Lindop—It is the wisdom more than anything else. It is the wisdom of somebody who has travelled down a certain path being able to impart advice to somebody who is embarking on that path. If you go through the history of education in Australia from primary to secondary to

tertiary, there is very little education about running a business. Technology businesses are even worse as they are invariably created by somebody who has come up with a better mousetrap or a brand new widget, who by definition are of a technology bent. That issue around the understanding of business is even more acute than it may be for a traditional business. I personally think it will always be that way unless we address some fundamental deficiencies within primary, secondary and tertiary education. When people are considering their professional careers, we need to highlight the benefits of the entrepreneurial approach as opposed to stepping on the bottom rung of a corporate career.

CHAIR—How do you measure your success?

Dr Bradley—By many different parameters. We have an annual process to measure success. We measure our success in terms of our financial performance. We also measure client satisfaction through an annual client survey. We have tracked that for almost four years and have good patterns of how we have shifted the organisation. We measure the impact it has on a company. We ask companies to tell us how many people they employ; how much investment they have successfully obtained over the years; how many new clients they have, if that is appropriate; and we track intellectual property. Our success is really reflected by our clients' success. In terms of our engagement with the universities, it is around the ability for us to work on specific projects where we have imparted some useful commercialisation advice that has allowed the project to succeed or a decision to be made around the future of that project. We have three pages of measures of success—some of them quite micro as well, right down to prosaic things like occupancy rates and stuff like that.

CHAIR—That's not prosaic!

Dr JENSEN—How about the rate of success versus failure for businesses in the park versus other areas where there are businesses involved in the technology industry but without the synergies?

Dr Bradley—It is interesting. People have tried to measure this globally, and we were at a conference in Oxford just before Christmas where there was big debate about this. Even the US cannot measure this. Only the Germans have some complex algorithm which actually measures success in these terms.

Dr JENSEN—Surprise, surprise!

Dr Bradley—Our frustration is there is no international benchmark. There are some guidelines, so we can only comment on those. Overall, the success rate of companies that leave our organisation—I cannot talk for the rest of the park—has been around 80 per cent. If we try to contact companies a year after leaving, they are either still in business or they have successfully sold their business to somebody else who is using the technology or it is transmogrified into a joint venture or something. In other words, it is still a successful outcome. That is because we try to weed out the early failures, so we are biased at a very early part in the process. Where we try to fail people early, we do not say that is a failure; we actually regard that as a success because you are not destroying people's lives—

Dr JENSEN—Yes, you are getting them out before that.

Dr WASHER—Do people from the park use local universities for various research purposes? They have a product, obviously, but when it needs more research or work, do they utilise the universities? Is the park used—because I can see the massive benefits of this concept—as an educational tool for schools? I understand it may need some money from the education system to encourage that, and if it is, that is great, and if not, why not, and what do we need to do to correct it?

Dr Bradley—I cannot speak for the wider park management. I can only speak for us. I have been involved in some of these things at an earlier time, so I can address them. The first is company interaction with universities, and maybe going back with contracts and doing joint venture work and research and development. I have a mental blank at the moment on the name of the program—

Mr Hawthorn—The ARC Linkage grants.

Dr Bradley—That is right. ARC Linkage grants are set up to try to bridge that gap, where a university researcher and/or a private sector company agree to put in money and in-kind resources for the development of a particular service, product, process or whatever. That has been a pretty successful program in terms of engagement, although I have never actually seen anyone produce the results of the economic returns that it has generated to the economy or back to various state economies or whatever. I would really like to see that. It may be published. I keep an eye on most reports and I have never seen those figures, but that could be my own ignorance.

As to some of the issues around that, a lot of commercial entities will complain that the university is very slow to prosecute these contracts, and at certain times that can jeopardise the completion of a commercial deal or investment. On the other side of the coin, I know that the universities often find these quite difficult contracts to prosecute because there are intellectual property issues that have to be properly addressed, and these take time, particularly if there are students and staff members involved, and so forth. There is a bit of a divide there between the two sectors in terms of understanding the complexity. They are not something that you can necessarily tick off overnight.

Mr Hawthorn—Having said that, though, a number of our clients are happily progressing their ARC Linkage grant projects with their respective university partners. They see it as a way of maintaining the links between their emerging technology company and their university colleagues. It is really fostering those linkages between a company and the enormous depth of research that is available within the universities, and that is a strong outcome.

Dr Bradley—I first came here four years ago, and the park at that stage was under the management of a different authority, the Sydney Harbour Foreshore Authority. At that time, I was asked to join a committee to try to bring Questacon to the ATP. There is a big hall that you will see on the tour, and they were going to take a third of that and create a big interactive place, including a theatre and all sorts of things. For reasons that were never really very clear to me, that failed, after a huge amount of work. It had reached the concept design stage and they were starting to get major sponsors on board but did not succeed. Others will know the reason for that, but I am not entirely sure. I was just told they were going to wind it up. So there was an attempt

to do that, and to some extent that is done all the time at the Powerhouse Museum but less so here.

There is a problem with this in that this is a place of work. People want tours, but this place has people working in offices at computers. There are not whizzing and banging machines very often. So what do you do when you take kids there? It is not a visually exciting place for them to be. If you have people who are prepared to give their time and create the right environment, and bring an organisation like Questacon here that is run almost autonomously, then there is some merit in that. There are other ways to do it, like training programs for kids being placed in businesses, but it is very hard for an early stage business to offer work experience. There are real issues around that.

CHAIR—Thank you very much; this has been very useful. We are sorry if we were tedious, but it was important that you gave us a sense of the workings of the place.

Proceedings suspended from 1.24 pm to 2.54 pm

DUURSMA, Mr Martin, Vice President, Advanced Products, Citrix Systems Inc.

CHAIR—Welcome. Although the committee does not require evidence to be given under oath, these proceedings are to be treated as part of the proceedings of the House, and any false or misleading evidence is a serious matter and may be regarded as a contempt of the parliament. Do you wish to make a brief statement before we start?

Mr Duursma—Citrix Systems have some solutions around what we call ‘access infrastructure’, which essentially allows customers to deploy applications in data centres centrally and then make those applications accessible to anyone across any transport, across any device et cetera. It is like the mainframe model and it allows people to drive great cost savings and create better total cost of ownership for their applications. My background is that I have been running the advanced research for Citrix since 1997 when Citrix acquired the company I had here in Australia. I have been doing this on a global basis for Citrix and I have offices that work for me in Sydney, Redmond in the USA and Cambridge in the UK. As this particular enquiry was started, I thought it would be useful to put a submission in and give a perspective on how research and development is viewed by a multinational occurring here in Australia.

CHAIR—Give us a brief perspective.

Mr Duursma—What I would like to talk about today is really around starting up an ecosystem here in Australia. Over the last three, four or five years, I have been watching with dismay what has been occurring with the research and development climate in Australia, primarily where we have seen a lot of multinational operations close shop. You are probably aware of a number of companies that have stopped doing R&D in Australia for a variety of reasons. We are getting to the point where we do not have the appropriate critical mass ecosystem that can help drive the whole ICT community here in Australia.

I think there are a number of things that need to occur, including sponsorship of core research and development in higher educational institutions—and some great programs are starting to happen there. At the same time, we need commercialisation of those efforts—and there are some efforts starting to occur there as well. However, one of the challenges we have in Australia is that we are a long way from world markets. The domestic market is often typically too small to take a company that is in start-up phase and drive enough revenue from the Australian marketplace, so it needs to be globally focused. A way to do that is to have more investment in Australia from multinationals that are doing core research and development in Australia. By doing that—

CHAIR—Is that cyclical?

Mr Duursma—Exactly, it is a cycle. What happens then is that you get a skill base starting to appear in Australia—

CHAIR—The cycle is running the other way. They are leaving; they are not coming here.

Mr Duursma—Exactly and that is the problem. What we need to do is to try and reverse that cycle to encourage more investment in Australia from multinationals that are training Australians

on developing software and technology on a world stage, understanding how to bring products to the world stage and then, at the same time, there is this start-up mentality that we have in Australia where we are a nation of entrepreneurs, there are a lot of good ideas coming out of the country, but people do not have an easy way to access capital and funds to start some of those new initiatives.

One of the things that I think we are particularly behind in in Australia is what we call 'angel investors', where there are funds locked up today that are often in real estate or other areas that could be applied towards technology ventures. By having an ecosystem where there are angel investors that can help start-up organisations flowing into the VC community, that takes it to the next stage. Then there are multinationals that can act as a conduit for taking some of these products onto the world stage. I think there is a sort of ecosystem that we need to think about in Australia. I could go into some more detail if you want about particular things around the ecosystem.

CHAIR—My dilemma is that we were better off, in terms of multinationals, without doing very much than we are now when we are doing more. Is that due to us or due to autonomous decision-making processes by multinationals that find it easier to relocate their R&D and their commercialisation back into their main markets?

Mr Duursma—That is a really good point. There are a number of factors that multinationals consider about why to invest in Australia. Some of the things obviously are cost based. Over the last four or five years we have seen some dramatic changes in cost base here with the US dollar to Australian dollar exchange rate, which in 2001 was very favourable but then, as the Australian dollar appreciated, became less favourable. R&D costs in Australia now are closely on a par to US costs. There is not that much difference. I can maybe squeeze 10 per cent but it is marginal; it is line ball. The other thing is the availability of strong leaders and entrepreneurs.

One of the reasons I attribute to many of the other organisations having closed in Australia, is a lack of connectiveness between that local organisation and headquarters. Whenever there is a belt-tightening exercise, where maybe the economy or the industry as a whole has not been performing as well, the far-flung outreaches tend to be the ones that are closed down first. It is a matter of having very good connections into headquarters and being seen as a core part. That is to do with leadership and the people that are heading up some of these organisations.

CHAIR—Not to put to fine a point on it, why is Citrix still here and has not gone back?

Mr Duursma—I think partly through leadership and partly through the role that the group here in Australia has been leading in advanced research and development for Citrix on a worldwide basis. That has benefited in many core innovations that are in the Citrix product line having come from the Sydney group. Citrix recognises that. It is a good point to say that we have not increased the size of the group here substantially; the group has been pretty static over the last two or three years. We have been looking at growing our facilities in other locations that may be more cost effective or the same cost as Australia. The tendency is to say, 'If there is no big cost advantage in Australia, well we might as well grow in the US or in one of the other major centres as well.'

CHAIR—That is interesting. But you are still here. Have your other R&D centres grown or you are just considering more effective ways of putting it in a fourth and fifth location?

Mr Duursma—The other centres have grown. We have been expanding over the last three or four years.

CHAIR—And then eventually the centre of gravity will shift.

Mr Duursma—It could do, but I think it is still measured on what the results are. People look at what is the output from the Australian research and development centre versus some of the other locations. I think there are advantages that people see. When you have R&D that is occurring outside the main HQ facility, often it is more nimble, it is often more closely related to what customer needs are. When you are in a large HQ situation, you get a little bit of a stilted view of what the world is—you just get this HQ mentality. By having outlying R&D facilities, you get new innovations occurring. Citrix have eight R&D facilities around the world, so we are quite a distributed model versus other companies that have a centralised model, so we are used to that model today.

Mr QUICK—How do we reverse the trend that is happening, for example, with call centres which are being placed in India? Multinationals, and even Australian companies, are saying, ‘Let’s whack it over there because the bottom line is the return to our shareholders.’ We are trying to encourage entrepreneurs and young people to go through education and then suddenly it is all tens of thousands of kilometres away. How do we reverse that? If we have got the technology here and the capacity, and we talk about the Australian dollar—

Mr Duursma—I think one of the things we need to focus on is more high-value type activities. I think call centres are a very low-value type thing. I think of a call centre more as being like a factory—like factory fodder. These are very low-paid workers. They are shift workers effectively. We tend to sometimes get excited about call centres but they are not really where the core IP is being generated. I think we need to focus on higher value activities that Australians can leverage that would have more of an on-flowing benefit for the Australian economy as a whole. I would not be too concerned about call centres. When I think about ICT, I think about the research and development that is occurring in our universities and institutions, and commercialisation and development of new products around the ICT industry and how we can get those more centred or developing in Australia for the world stage.

Mr QUICK—But there seems to be a perception out there by the average punter that with all this increased technology there is a lack of service. You go into the banks and they say, ‘Why aren’t you putting your plastic card into the ATM?’ And 1300 and 1800 numbers are proliferating and there is this perception: who really cares about all this increase in technology—mobile phones and 3G and all that sort of stuff—and what is the real benefit to the ordinary, average person of all this R&D? It seems to be a loss of jobs, a loss of human face. How do we change that mind-set to free up some of the money for venture capital? How do we change that mind-set?

Mr Duursma—You are asking: what are the benefits of technology in general? And then the second question is: what can we do with venture capital? Is that correct?

Mr QUICK—This morning I was raising the fact that we do not have any venture capital. We have to go overseas and sell our soul and the big multiconglomerates swallow us up because we have only got 20 million people. And yet we have got hundreds of billions of dollars in our superannuation funds and our banks, and they can wipe off a couple of hundred million dollars easy loss. It is that whole complex issue—

Mr Duursma—It is complex because—

Mr QUICK—But how do we resolve it when other countries with a smaller population can do it? Look at Taiwan: it is half the size of Tasmania and it has no resources, and yet it is the fifth biggest trading country in the world. What are they doing and on what taxation regimes? You go there and IT is the be-all and end-all of a little adjunct of China.

Mr Duursma—Taiwan is an interesting example because it is really the ICT wholesale manufacturer for the world. Virtually every computer component you buy today comes from Taiwan. They have got a stranglehold on that part of the marketplace. Coming back to Australia, I would say it is an ecosystem that we require. Last week I was in California, in San Jose, and there was a technology conference there which was linking together angel investors, VCs and start-up companies. That conference had 2,000 people attending. Basically, this is where start-up companies were pitching their ideas and their products to VCs and angel investors. That just shows you how an ecosystem, when you have one, can really foster innovation and new technologies. That is something that we do not have here in Australia.

Mrs VALE—It is almost like a star is born for new innovations, is it not? That is what you are talking about.

Mr Duursma—Yes, it was a bit like that. Correct.

Mrs VALE—With people with the money to actually take them on board.

Mr Duursma—Exactly. I think here in Australia we have people with the money but people are putting money in the wrong places. They are investing in, for example, real estate and those sorts of areas which have known returns or a different type of return. For example, starting up a high-technology venture is a highly risky operation. VC funds talk about one in 10—

CHAIR—That is why we buy houses.

Mrs VALE—Bricks and mortar.

Mr Duursma—That is right but I think there are things we can do. For example, I mentioned tax incentives in my submission. If I am a wealthy individual and I am thinking about investing in a new venture, if there was a tax break that said to me, ‘Well, if I’m going to put a couple of hundred thousand dollars or half a million dollars into this little start-up company, if there is a tax break I might as well do it.’

Mrs VALE—These are the kinds of incentives you would like to see that we, as a government, could actually do to attract this kind of investment?

Mr Duursma—Yes. Not the government having to actually provide funds—

Mrs VALE—No, but other structures—encouraging structures.

Mr Duursma—Exactly. Structures which can maybe leverage some of the private equity that is available in the Australian economy today. There are lots of funds, I believe, that can be unlocked through this type of thing.

Mrs VALE—Would that be a kind of incentive too that we could attract more multinationals back into Australia with?

Mr Duursma—I think there are two things. The angel investors and encouragement for people to put funds into brand new start-ups is one. I think the second thing is looking specifically at programs to try and encourage multinationals to come back into Australia. I will give you an example. In the Citrix situation there are actually no government incentives or programs that we can leverage. You might find that a bit strange. For example, we have the R&D tax concession program, but a multinational like Citrix falls outside of that program. The reason is that that particular program stipulates that, for example, the intellectual property must remain in Australia and there must be certain profits generated in Australia. When we do multinational research for the global stage, what is developed in Australia becomes part of a worldwide product and those products are shipped all around the world, so the IP belongs to the parent company. The profits are not generated in Australia necessarily—they are generated on a worldwide basis. There are a number of structural things like that. Even if the current programs could be improved that would help multinationals.

Mr QUICK—In the Singaporean market or the Malaysian market would things be different with a company like yours?

Mr Duursma—In the Singapore market there are different tax regimes. I believe that the corporate tax rate is quite a bit lower in the Singapore environment and the personal tax rates are different than those in Australia, so there may be some incentives there.

Mrs VALE—Martin, what is it that we are doing here in Australia that is attracting Citrix to remain here? Like Petro said, why are you still here? What are we doing right then so that you are still here?

Mr Duursma—To be honest and frank, I do not think there is anything in particular that we are doing right now in Australia that is keeping Citrix here, beyond maybe the individuals and the results that have been achieved.

Mrs VALE—People that you have got on the ground here and their performance so far?

Mr Duursma—Correct. Performance related activities is what it is today. But I think what we can do is to try and look at other incentives and programs to encourage multinationals so that not just Citrix is here. If you look at what is happening in Sydney at the North Ryde area near Delhi Road, there is a technology hub that has been really up and coming where we have a confluence of ICT organisations all within a 500-metre radius. We have Citrix, Microsoft, Oracle, HP, Fujitsu all in this one technology park. Most of that is around the sales and marketing functions,

selling overseas products into Australia. Think about if there were incentives that would encourage some of those multinationals to bring some of their R&D function from some of their other locations to Australia. Those incentives might be around one-off start-up encouragement funds, whereby, if a multinational were to bring a research and development organisation of a couple of hundred people to Australia, there would be a one off type of incentive or something like that. Then we could aggressively target some of these companies and say: 'We would like you to bring research and development to Australia. Here is what the government would do from a sponsorship perspective.' Then we could see what could be done that way.

Dr JENSEN—From the perspective of multinationals, particularly high-tech multinationals like Citrix—and I know that you do not actually make product per se; you have software and so on—are you seeing Australia mainly being on the research side of things and not so much the actual production of the items and that that gets hived off onto some other nation where that aspect is cheaper? How do you see our role?

Mr Duursma—I think it depends. For example, software production can happen anywhere in the world because there is no real manufacturing cost—the cost is the labour. Today, most software products are delivered electronically. For example, for an organisation in Australia to develop a software product, it could be completely finished in Australia and then it is available for download, for example, from any of that multinational's download sites. There is another interesting question: where is software manufactured? When you think about it, it could be made in Australia, packaged in Australia and then maybe put on a download server in the US. So, you could say, where is it actually fulfilled? Certainly, on the software side, there are no barriers, I believe, in Australia for us to actually produce the finished product. It is a different story if you are thinking about manufacturing per se, as a manufacturing industry, and then there are different sorts of things to consider.

Dr JENSEN—Specifically from your type of industry—the ICT industry—what do you see Australia's role as being in the overall ambit of a multinational?

Mr Duursma—Are you talking about how Australia is viewed within the multinational?

Dr JENSEN—How Australia is viewed, but also what role—

CHAIR—Given what we have got, where could we fit?

Dr JENSEN—Exactly!

Mr Duursma—I think it comes back down to some of the things I started with. In Australia we do have a can-do culture. It has been interesting with Citrix that often things that have been deemed to be too hard to do or not feasible, have actually been taken up by the Australian arm and have been done. I think that is a unique characteristic that we do have within Australia. I would say that within the multinational, Australia could be viewed as an area where people can get things done, can take on the hard things through the attitudes and the work ethics that we do have in Australia. Frankly, we do have some very good, highly skilled people available in Australia that we can leverage.

Mr QUICK—You also say in your submission that Australian universities are now reporting considerable shortfalls in the number of students enrolling for computer engineering and technology related courses.

Mr Duursma—Correct. This is a trend that has happened in the last couple of years since we had the tech wreck et cetera. ICT in Australia has not been seen as an attractive career path and people are looking at other areas. I suspect that over the next three to four years we may start to see some shortages because of the fall-off in enrolment in some of the core computer science courses et cetera that they are offering.

Dr JENSEN—That is just following what has already happened with science and mathematics, for instance.

Mr Duursma—Yes, exactly. Some of those courses are not seen as attractive and it may be because people are not seeing that there are the career prospects and maybe they are not seeing that there is the supporting industry or organisations in Australia where they can find jobs—that may be part of it.

Mr QUICK—If companies like you disappear, the chances for PhD students diminish, and they will look to go overseas and the problem will be exacerbated.

Mr Duursma—Correct. We have a program where we sponsor PhD research in Australia. We are working with the University of Technology in Sydney to sponsor PhD research because we need to do this, it is a fundamental thing. Also, sponsoring PhD research for a multinational is a great way to find new recruits that ultimately you can bring into the organisation—highly skilled people.

CHAIR—I cannot quite, on the face of it, relate economies of scale and the size of markets to your industry. It is not like with meat and livestock. What does the size of the market have to do with it? So long as you have a good product you can sell it anywhere. Our location does not put us at a disadvantage as such. Obviously there is something else that I do not—

Mr Duursma—I think our location does put us at a disadvantage once a company gets to a certain size. It is in the start-up mode, where often companies are focusing on the domestic marketplace, that our domestic marketplace is small—it is only 20-odd million people. If I am a start-up in the US domestic marketplace, I have nearly 300 million people that I can address within my geographic border, and it is always easier to work with your home country. I think with Australian start-ups, the amount of effort that you need to do to get a product ready is much the same whether you are doing it in Australia or in the US. If it takes, for example, 100 people to get a product to market, those 100 people can potentially draw a return more quickly in the US domestic marketplace because there are 300 million people that they can address there. In Australia we are talking to 20 million people so the initial traction is a challenge. Once you get beyond your initial customers, and you start to get some sort of market acceptance of whatever the thing is that you have developed, then often you can take it more easily to the world stage.

Mrs VALE—Or perhaps a worldwide reputation for difficult problems where we can produce solutions—as you were saying, it is performance based and that is the connection.

Mr Duursma—That is one thing. I think the other thing in Australia is that frankly we are not known as a technology country. I think over the last number of years we have been very successful in promoting Australia as a tourist destination. I think that has worked against us to some extent because, when Americans or other people from overseas think about Australia, they do not immediately associate Australia with technology, they associate Australia with other types of activities. People do not naturally think about us in that light.

CHAIR—I think about the US as a tourist destination, actually.

Dr JENSEN—Disneyland!

Mr QUICK—How well do our fragmented state and territory health systems understand the available technology in Australia compared to going and buying it off the shelf from the US or Europe? Where is that linkage between state health systems purchasing a product that is perhaps available or being developed here, compared to their purchasing a product available on the shelf through the big pharmaceutical companies that control most of the world at the moment?

Mr Duursma—I cannot comment too much about health and what the health industry is doing. I would comment that I think in Australia we do suffer a little from what we call the cultural cringe, whereby if a product is developed in Australia it is viewed with suspicion versus a product that comes from overseas. We have this cultural attitude that the overseas thing is bright and shiny and must be better, which is the exact opposite to the mentality of say the US. In the US the attitude is that if it is made in the US it must be good; if it comes from overseas it must be viewed with suspicion—that it may not be as good as the homemade product. Sometimes I think that works against us here in Australia—it is an attitudinal thing.

Mr QUICK—Is it the responsibility of perhaps the universities and the R&D in a place like this to be out there in the face of people enlightening the ordinary, average person—to be on *Today Tonight* and the *7.30 Report* and *Four Corners*? Most people in Sydney probably would not know what happens here. We are coming here blind for the first day and are suddenly realising the potential here and hearing all the good stories that have been hidden.

Mr Duursma—I agree. I think that a program to raise the awareness of the general populace as to what is happening with technology development in Australia would be a good thing.

CHAIR—Throw a computer on the barby!

Mr Duursma—Maybe!

CHAIR—Thank you very much, that was illuminating. Thanks for your input, particularly from that perspective.

Mrs VALE—Thank you, Martin—whatever you are doing, you are doing it very well.

Proceedings suspended from 3.20 pm to 3.34 pm

ROSE, Dr Reuben Johnston, General Manager, Livestock Production Innovation, Meat and Livestock Australia

CHAIR—Dr Rose, thank you for coming. Do you have anything to add to the capacity in which you are appearing?

Dr Rose—I am the General Manager for Livestock Production Innovation—which are three words strung together not to mean very much, but it actually refers to on-farm R&D.

CHAIR—There is no swearing in for this testimony but it is a committee of the House of Representatives and it has all the privileges attached to it, including the privilege of having straight and unvarnished comments from you. Would you like to make a brief statement to begin with?

Dr Rose—I am here on behalf of Meat and Livestock Australia and our managing director, Mark Spurr, who is in Korea. What I would like to do is present some brief comments. Meat and Livestock Australia is a producer owned company that services the entire red meat sector, from processors and producers through to retailers. Research and development is a major focus of the company and a little less than 60 per cent of our budget is spent on R&D. These funds are a combination of industry levies, commercial enterprise contributions and federal government matching funds.

Our focus is on the development of a competitive advantage for the red meat industry across the supply chain, and growing demand and supporting continued domestic and international market access of red meat products. We have noted this committee's interest is really into commercialisation pathways and to find examples of innovation that demonstrate strategies to overcome potential blockages and some critical success factors.

In our submission we have provided an overview that presents a view of our framework that we use in approaching R&D, assessing market readiness or need in early stages, establishing formal innovation adoption strategies and then, following completion of R&D, examining the industry impact of the outcomes to ensure that we have taken the products to market in the most appropriate form. Commercialisation is certainly one important tool that MLA uses, and we have attached some of the commercialisation guidelines. We have also presented in our submission a number of cases of our so-called industry good model, where we are trying to produce an outcome that will raise the awareness and adoption of innovation by industry—in this case primary producers. That is an enormous challenge.

CHAIR—I underscore that.

Dr Rose—We have included three detailed case studies which present some areas of examples of successful technical innovation. In the submission, basically we have said that there is no single correct way to deliver outcomes to industry, but rather that the framework provides at least one way of thinking about this. Of course, the key factor here is the fact that there is some incentive for industry to provide funds that will be matched by government to promote innovation. We see that as a really important incentive in this difficult area, particularly in a

sector that is very traditional. Those are my introductory comments. I am very happy to attempt to answer any questions.

CHAIR—How much do you spend overall on R&D?

Dr Rose—This current year, it will be around \$80 million, which represents equal matching of Commonwealth and industry levies.

CHAIR—How do you allocate? What broad areas does that go to?

Dr Rose—Broadly, it goes to areas that would support commercialisation and, through the meat processing sector to the other end of the supply chain, areas that would support developments that would support producer's innovations. It would be things ranging from the development of new pasture species, to issues around how to manage land more productively and sustainably, to genetics R&D that would support how to select animals that were going to be more effective in their growth rate and more profitable in their outcomes, through to things like new drenches and commercial vaccines.

CHAIR—It is quite a substantial investment.

Dr Rose—Yes.

Mr QUICK—How much is spent at home and how much abroad?

Dr Rose—Most of the money is spent in Australia; a little bit is invested internationally. I would think probably around 90 per cent of the investment would be spent within Australia supporting developments. There are some co-investments with New Zealand. There is an organisation similar to us called Meat and Wool New Zealand Ltd and we have got some projects there. We have also got some collaborative research with the US and also with the UK.

CHAIR—Have you done any evaluation of the economic returns of either the expenditure or parts of the expenditure that you have tracked through?

Dr Rose—Yes, we have. I think this is a particularly difficult area. The issue of economic impact statements, and particularly benefit-cost analyses, is that almost no-one ever believes the figures. One wonders why you spend a lot of time doing it because, certainly from producers, every time you say, 'There is a 35:1 return,' they say things like, 'You've got to be joking!'

CHAIR—When they are being nice.

Dr Rose—Yes. I notice that I was very careful about my language there, but they do say things along those lines. But certainly we have been able to show in a range of products that there are some very significant returns. The difficulty is the fact that, if I can give you one example—and there are some details of some of our genetic work in the submission—BREEDPLAN and LAMBPLAN are very substantial genetic technologies that represent the cutting edge of quantitative genetic research 15 years ago. What we have is a history of continued investment in that area that has delivered a commercial product that still needs R&D support some 15 years later. There is a long investment time before you see a return.

One of my continued themes to the livestock industry is the fact that you need to invest long term before you see a financial return, which is not a very attractive proposition to farmers who have got an average age of 59. When I say to my mother, who is 83, 'Trust me, Mum, it will be right in another 10 years,' she is not particularly interested in that message. I think this key issue of sustained investment to produce a return is a really important one, and one that is difficult because it is hard to show a financial return for a long time in that pipeline as well.

Mr QUICK—With maintaining the people involved in R&D without them disappearing overseas and being paid salaries of twice the amount, how have you managed to maintain that core of support over that long period of time—your linkages, especially through the universities and the agricultural colleges?

Dr Rose—Industry bodies like LMA that have got a combination of industry and government funds are enormously important. Firstly, the messages they send to university sectors, and of course also now to CSIRO as well, are very important ones. The old story which says 'never stand between an academic and a bucket of cash' is absolutely correct—you will get knocked over in the rush. Academics need the right signals that there is work there for them if they understand the context of what you are trying to do. In our case, it is about improving the profitability and sustainability of the industry, so there are some very clear targets which they can take on board.

I think those targets and those strategies have been there for a significant period of time and so it has built core expertise around different units in the country, from CSIRO livestock industries, in this case, through to a range of other CSIRO groups now including environment and those sorts of areas and plant industries, then in universities. I suppose the traditional source of areas for veterinary schools and agricultural faculties have been areas like Meat and Livestock Australia which are very important. To give you one example that was very close to home here: in conjunction with the University of Sydney, we have established a chair in livestock medicine and that has led to a new postgraduate training program to underpin biosecurity and issues around the livestock industry. That investment by the university would not have been possible without some external funds being available, so I think that it is a very important underpinning for an industry that is a \$15 billion industry. It is a key issue, I think.

Dr JENSEN—Reuben, you were saying that your funding came largely through appropriation of one form or another. Who then actually determines the research direction that is taken? I guess you could have an argument, particularly from stakeholders like farmers, that it is all care and no responsibility, and that you are going to get that money anyway and so the research direction you take does not necessarily have to benefit us. Who actually determines the priorities for research that will be of benefit to your farmers?

Dr Rose—That is a really good question. I will answer it by saying that I was a dean of a university faculty before I took on this job with Meat and Livestock Australia 18 months ago. The consultative process with academics is long and intense and they never do anything you tell them to. It was very good training for this sort of industry. We have got an amazingly complex consultative process. At the heart of it are two key issues. Industry committees have a high degree of ownership. To give you an example, in Northern Australia, we have 10 regional beef research committees scattered from the Kimberley right over to Northern Queensland. Each of those beef committees gather producers that are key around those 10 regional areas and there is a

regional chairman for each of them. They come together and evaluate each of the R&D projects, but also help set strategic direction.

There is a high level of involvement of producers in helping to understand strategic direction, but also research groups through that process as well. I think you can never consult enough and it is a laborious process, but there is no doubt that the model is a good one in terms of trying to understand what producers' needs are—that is, if you are battling out there, what are the things that you are dealing with? If there is a problem with a particular weed, then understanding what that is and being able to underpin it with R&D is the key factor. I think we are well targeted in terms of what the priorities are, and we do a lot of survey work to try and get the geographic spread of 140,000 producers out there that are in the cattle and sheep sector to—

Dr JENSEN—Do you do follow up research with these producers to find out basically what their feelings on your research are—in other words, whether they feel that you are going the right way?

Dr Rose—Yes, we do. How successful are we? I think that it is a very modest success and that is a big issue in itself. We have done some surveys to show that, I suppose if you put the best spin on it, you could say we are doing very well, but the worst spin is that we are not making a difference at all. To give you an idea of that, if we take 140,000 producers, we know that we have probably got the top 10 per cent or 15 per cent very aware of a number of the issues and using a number of the tools that we make available in different formats. Some are commercially available, like the gene markers that we have available out there in industry that are being marketed, and others are more generically available through state departments of agriculture and so forth. But we know that it is very hard to influence those people to change their practices even when they are going out of business.

I suppose our biggest single challenge is that we have a lot of information and we do everything we can to make it available to people—we run workshops, we run seminars, we have the internet available, we have newsletters. So we do whatever we can to get out to that sector, but ultimately the decision for change is a very complex one. I think that, for an older population, it is really significant to do that. Often that decision is not economically driven.

I always take my father as an example of this. My parents are farming down in southern New South Wales—they have about 8,000 acres down there. When either Wimbledon or the US Masters are on my father will be watching them. It does not matter what is happening, and even if all the animals were dying I do not think it would worry my father too much. At the age of 83 his focus is not on that—and at his age I can understand why. That is probably representative of a lot of the industry who are happy just to try and have a hand-to-mouth existence, and yet we are trying to encourage them not only to be more productive but also to take sustainability issues very seriously.

Dr JENSEN—I guess the question there is: how do you get them to change practices? I know, for instance, when I was with the Division of Wool Technology and there was a problem with tender wool in Western Australia, the way that you solved that problem was just to shear the sheep at a different time of year. We could not get the farmers to do that despite the fact that there would have been significant economic benefits for them. How do you go about getting

them to actually change practices when, in this case, it would have made probably a 20 per cent difference on their annual return?

Dr Rose—It is a big challenge. We have taken up the challenge in a range of different ways, understanding different learning styles and a lot of the literature about how people use information. Probably one of the most successful things that we have done in the last 18 months was to take a road show around Australia called Prime Time. This is a one-day workshop that people come to to be made aware of ways of being more effective in producing prime lambs. That is an area where the market has improved enormously and there are some really big financial returns to producing prime lambs at this particular stage of the cycle. That has had a very big impact, because we know from our survey work that those 3,000 or 4,000 thousand people who have attended those seminars have spoken to at least 10 to 15 other people about some of the issues. I think farmers need a range of ways, but face to face is often the best way. Of course it is difficult and it is time consuming and it is costly, and that is a challenge that we are really trying to deal with.

Dr WASHER—I am glad you said that. I think we are looking at innovation and commercialisation. We have new gene markers here—I see them for marbling and tenderness and in pasture management et cetera. But to sell these things, I want to reemphasise that I think it has to be confrontational—person to person almost. We have gotten into an electronic age—and I want your comments on this—where people assume you look up the internet and it is all going to be sorted out, or I email you or give you a call and it is going to work out. I do not see any top business deals being done in the world that way. You fly there and you confront people and you do the deal. As governments, are we doing enough now to get that across: to assess things and to get out there on the ground in the meat and livestock industry?

Dr Rose—It is the key question I think a lot of areas are asking. The politics around this are quite complex because this interesting model that we have all been handed, which is federation—which is an amazingly difficult thing to work with—is really at the heart of a lot of the problems. State by state, through different approaches and attitudes of state departments, and particularly in the agriculture sector, I think state departments are trying to weigh up the issues around land care and sustainability versus the issues of just being able to have people that are productive enough stay in the business. How you actually link through state departments is really important at the moment. I know that the feedback we are having is that a number of extension officers that used to be well resourced are now not well resourced, but politically it is difficult to remove those people. They are often starved of resources. People can say, ‘Well, yes, we have got an extension officer in Wagga or in Deniliquin,’ but sometimes they can not do anything.

I think it certainly needs a fresh look at the way the philosophies in different states are coming together and how the Commonwealth interacts at those levels. It is a really difficult process around how you deliver information most effectively to farming groups. We know from our own experience and the surveys we have done that there is a three-stage cycle: from awareness to motivation or trialling through to adoption. I think that groups like ourselves are doing a really good job in the awareness area. So people are aware that there are these new things or new tools. We might get to 40,000 people that way of the whole set. We probably can get to another 5,000, and we have producer trials and a range of tools we use to actually get people to trial something, but ultimately to use it and adopt it on a farm is a one-to-one activity. I think that is where the

issues are in terms of, firstly, the capacity of the average producer to pay for the consultant to come and help them and, secondly, the state department's extension officers, which used to work one on one but now are only capable of working in much bigger groups. The critical stage of trying to help people to implement change on their farms is really the biggest issue that we see.

CHAIR—Insofar as your innovations are not taken up—I am just partly trying to get my mind around commercialisation—does that reflect a failure in the final stage of commercialisation?

Dr Rose—The difficult thing here is this whole concept of market failure, which is the space that we are working in: the idea that the agriculture sector as a group of individuals cannot appropriate enough marketplace power or enough funds to put something together. Our charge is to work in the area where the market is failing. At the same time, we have to be very careful, because it may be that we are working in an area where it is never going to be taken up. That is the issue where we have to be very careful in the area of commercialisation. We need to make sure there is either a commercial product down the track or there is actually a need for it. It is very clear there is a need in most of these areas. We have established a clear need. We have had industry consultation and so forth. But the issue of translating that need into actual reality is the area where we often miss the boat.

CHAIR—Is there an analogy here between R&D in the general sense and Australia's failure—or at least not 100 per cent success—to translate that into commercial products? In the case of Meat and Livestock Australia, is the delivery on the ground and getting behavioural change analogous to an inability to take that last step completely?

Dr Rose—I think you are right, yes.

CHAIR—Would it be right to think that there may be some imbalance in resources between the generation of the innovations and what is required to change primary producers' behaviour on the ground?

Dr Rose—You are asking whether the focus on where resources are put is not meeting the actual need out there where producers are actually going to make a change and use it.

CHAIR—To take it up.

Dr Rose—Yes. It is very clear that in the commercial space, if we look at the last 30 years, when Merck Sharpe and Dohme introduced a new drench which was immediately taken up completely across the industry where there was a great clear benefit, it required a massive billion dollar investment.

The change has been that, as companies have become more global, the issues of the Australian sheep industry are too small. It might have 90 million animals and there is potential there but it is too small a market to be significant in a global sense. The issue becomes how do you actually foster some commercial interest in a small market that actually has a very significant impact on our economy? That is one of the challenges for us. For instance, we are partnering with a range of commercial organisations that would not otherwise see the commercial outcome if they had to invest their own dollars. For instance, one of the big challenges at the moment in the animal

industries is around parasite resistance. Parasites are becoming resistant to the traditional drenches. There is no interest in the global companies of meeting a livestock market which is too small. The livestock part of Pfizer, for instance, is less than 1½ per cent of the total global company for the whole of the animal sector. The issue is what can we do to help establish either some local commercial interest to partner in a way that will investigate new R&D. That is where the big risk is, of course, to try and get down to a stage where we have a product for an industry that will be beaten if it does not have a new drench or some other strategy of putting it in place. Ultimately it has to be commercialised and there has to be a stage where commercial partners start to pick up that mantle. We are trying to kick start that process to actually get things through to a stage where there is at least potential commercial interest.

CHAIR—Would you work with somewhere like New Zealand where there are large numbers of animals and there would be a benefit working together if Pfizer decided to pull out?

Dr Rose—That is correct. There is some good cooperation. It has been a positive story in terms of working out where we can cooperate together. There are areas, in more recent times, around particularly animal welfare where we see an absolute need to partner to do something more effectively in an area that does not have a commercial outcome but has a huge significance in the way we manage our whole industry.

CHAIR—How do we compare with the levy and the amount of money we are investing in R&D? For a relatively small industry it is a lot of money. How do we compare with say, Canada and the US?

Dr Rose—There are no similar organisations elsewhere. There are some similarities in the UK that are investing less. The USA Department of Agriculture has specific grants and you could take that as an equivalent. On a per head basis we are certainly investing more in that type of industry. It is an interesting story because if I take something like that horse industry which I know well, figures indicate about an \$8 billion industry in this country and we are investing nationally about \$750,000 in R&D to help support that sector, so it is disproportionately small in terms of the size of that industry compared to the livestock sector. The livestock sector investment is having a huge flow-on effect on what resources are being contributed by other organisations, particularly the university sector. Young people coming into that area see a R&D future. At the moment we are supporting about 42 PhD and Masters students in postgraduate programs. In the last few years those students have come to a two-day workshop to link them, to hear what they are saying and also to get a sense of what the sector supporting them is doing. That will have a large potential to link bright, young people to a sector that has a future.

CHAIR—Dr Rose, that was very interesting. Thank you very much.

[4.03 pm]

GERACE, Mr Michael, Director/Web Developer, Thehairstyler.com

JOHANSSON, Mr Bruce Michael, Chairman, Gazelle Monitoring System Pty Ltd

STRANGIS, Mr Pasqualino Visconti, Manager, Industry Policy Unit, Australian Trade Commission

TREGEA, Mr John Andrew, Technology Director, Debraneys Pty Ltd

CHAIR—Would you like to make a brief opening statement?

Mr Strangis—First, Austrade is pleased to be represented today at the hearing. For those of you who are not aware already, Austrade is Australia's principal export facilitation agency. We are an executive agency sitting under the broader DFAT portfolio and Minister Vaile. We have been liaising quite closely with the Secretary to the Standing Committee and our input has largely been in the form of case studies as that is where Austrade could add most value. We have a huge client database of innovative Australian businesses that are achieving significant export successes overseas and these might be able to add to the mix of issues for your consideration. We have three here today. We have Mr Bruce Johansson from Gazelle Monitoring, we have Mr John Tregea from Debraneys Systems and Mr Michael Gerace who is from Thehairstyler.com. There is a bit of segue between some of the issues John will raise and those issues that were being covered off with Cisco earlier. We will start with John, and then we will progress through to Bruce and then Thehairstyler.

Mr Tregea—Debraneys has an information management product that is used for maritime security. In Australia, as in the rest of the world, the effective management of maritime security is a critical issue due to terrorism as it stands in the world today. Our systems are innovative in that they allow companies to connect existing systems together, they allow organisations to be connected together and it allows for the creation of a community. This is a critical need in the maritime industry where there is a lot of separation between the operational side of the industry and the administration side. Debraneys products are fundamentally different from any other kind of information management in the world today. Although we apply them to maritime security, people often pick up on the core technology and come and see us about other industries it could be applied to. One of the main innovations is that it is not adding another layer of complexity onto the technologies that are already in place. The company became a member of the Australian Technology Showcase in 2003 and because we were a member, we had access to funding through the technology demonstration program. We were a winner in round three of that program. We partnered with the Centre for Maritime Policy at the University of Wollongong.

What we have found is that when we show people the products, if they take the time to look, the response is very positive. The director of the Centre for Maritime Policy is Professor Martin Tsamenyi and once he looked at the products he said that they were a major contribution to the international effort to safeguard maritime security. We launched the products in October last year and we invited representatives from the Department of Transport, from the Australian Navy,

from the Australian Maritime Safety Authority, from the Australian Hydrographic Office and from industry as well. The people from industry came to the launch event but not a single representative came from any of the invited government departments. We have an office in Singapore and an office in Australia and there are particular individuals in the different organisations in Austrade that have been outstanding in their support of what we are doing. When it comes to the crunch of the key decision makers actually taking the time to look at why this is different and how it is innovative, they do not do it.

I am actually here today as the Technology Director of Debraney's because our managing director is in the UK on a trip funded by the UK Government to show our innovations to the maritime people in the UK. At the launch event, there were three representatives from the UK government. The Department of State and Regional Development had representatives because they allowed us to use their office and had actually funded the program. It is something that we see; real innovation takes a long time. The funds are being managed by the Australian Innovation Investment Funds which have been put into the hands of the Venture Capital Management Funds. But when you go to speak to a venture capital company want to know the impact and the implications of your innovation within the length of time it takes an elevator to travel from the ground floor to the 15th floor of a building, what they call the elevator pitch. Again, they are not prepared to take the time but our technology has been proven over a number of years in a number of industries. The people in the UK who have seen it just in the last week, are saying that this could be used by the International Maritime Organisation, and it could be used nationally or at state level.

CHAIR—Can you tell us a little more about its distinctive capacities?

Mr Tregea—I mentioned that it does not add complexity. It is based on a unique backbone that brings together some of the critical things that an information technology system has to have. Part of it is centralised access control and a centralised audit trail. One of the things that we have seen in our 10 years of work is that the fundamental architectures of many information technology systems that are available were designed may be 15 years ago when organisations did not change very quickly. In the world now, change is the norm really, organisational structures do not stay the same.

CHAIR—You said a lot about maritime security and I am still trying to fully comprehend that.

Mr Tregea—We spent about six years building products for the maritime industry in Singapore. When we brought the products back to Australia and started talking to people in the Australian maritime industry, we were told this is perfect timing, there is now an international standard coming out. Every country in the world is going to have to comply with this international ship and port facility security code. So, we have a technology that is very broadly based in terms of how it can be applied but to bring it to market we have needed to concentrate on a particular area.

Mr QUICK—So it is for tracking where a container goes and that sort of thing?

Mr Tregea—For tracking containers, tracking people and tracking vessels. One of the things that is happening, not just in the maritime industry but to do with security and compliance, is

that there are new technologies coming out such as biometric scanning and automatic identification systems on vessels. Every single one of those new technologies brings a new data stream but the data streams are actually being stored separately. Our technology brings them all together.

CHAIR—To be honest, you switched me onto over the horizon radar systems and I was trying to work out what they were.

Mr Tregia—For example, a vessel coming into the port of Sydney, the information about the crew and the cargo is actually with Customs. The people in the port have to find out separate from Customs. If there was something suspicious, the Office of Transport Security has virtually no direct link between the operational side of the industry and the administration side.

CHAIR—That is usually because they do not want there to be a direct link.

Mr Tregia—That is true except that the industry is under pressure to make it more transparent. In fact it will stop the trading if it cannot provide that level of compliance. The technologies have taken many years to develop and we are at a point of bringing them to market and commercialising them. However, the interest is actually coming from the UK and the US. In the US, they have a process where they actually encourage unsolicited information to be sent to the government so they can assess new technologies and recommend them to their departments for purchase.

Mr Strangis—This is not an uncommon model; we can achieve exports but no domestic sales in an innovative product or service.

Mr QUICK—So, it did not suddenly happen, you mentioned it has taken a while. What were the impediments so that it was not done five years ago? Venture capital, who provided it? You mentioned you were based in Singapore, was it a Singaporean venture that came to Australia?

Mr Tregia—No. It is an Australian company but we set up a Singaporean office in the early days of the company. The founding project of the company was funded through the Innovation Development Scheme which was a scheme from the Singapore government. We had a commercial client asking us to build a website and a CD-ROM and some other technologies. They asked us to write a proposal and the Singapore government paid for 50 per cent of that development, even knowing that 100 per cent of that money went to an Australian company. That gave us a legitimacy that we built on over the eight years we have had the office in Singapore. We have moved the focus of the business back to Australia to launch from here to the UK and to the European market.

Mr QUICK—It is a sad reality that you had to go overseas to get established. Once you had done that, you came back and were the favoured son?

Mr Tregia—Yes. We have a credibility from working with Austrade in Singapore and in Australia through the Department of State and Regional Development; the Australian Technology Showcase; the Export Market Development Grant; the Research and Development Tax Offset. We have used each of the programs that have been available to us. The only way that you can really innovate is to see what is not working and why it is not working. We have been in

a privileged position where we have been going into companies and government departments over 10 years to see why the information technology has not been working and why it has not delivered. So, each time we have seen another step forward, we have put that into our technology.

Mr QUICK—Is that because we have got within state and government departments this silo mentality of each tendering their own IT stuff out and no-one talking? For example, the education department has their own, and the health department has their own because they have little empires?

Mr Tregoe—Absolutely. It happens within a department even in the new structures. We have watched it happen in the Department of Transport across the last two years with the Office of Transport Security. We met with them a number of times and told them about the product and presented to the key, senior people and they went and bought a product from America. Without going to tender as far as I am aware. The processes or the structures that are in place to ensure due diligence in buying IT are actually stopping innovative Australian IT from being able to be purchased. It certainly has had that effect on our product.

Mrs VALE—Is that because of the time delays of due diligence?

Mr Tregoe—If you develop a relationship with people in the department over a year or two years, which we have done, when it comes to the point of that department requiring an information technology system, it is actually taken out of those people's hands and given to the IT department. The IT department are actually very tradition bound. That is what we have been doing: seeing what does not work with IT—not tearing it down and saying, 'Get rid of all that.' That is partly why our innovation is different, because it recognises that people have to start where they are up to, and if you can show them there is a way forward, that is a very big thing.

Mr Johannson—We are a small Australian company, literally two blokes, founded by myself and another guy. I have been involved in three IT start-ups from 1994 through and they have all been quite successful. This is by far the biggest and has the greatest opportunity of all the companies. We have developed some technology which enables very large organisations—our target market is multinational organisations—to monitor and manage remote devices in the field. We provide the back-end system so they can go off and do whatever they do and we look after the whole thing. The company and our client is Konica Minolta, who have literally millions of photocopiers around the world and they wish to monitor and manage those for their clients so when they die they can have a technician out there to fix them before the customer rings up. We have developed a system that they have decided to utilise.

Our strategy from very early in the piece recognised that the technology to put this together was going to cost \$1 million and we were not able to get any venture capital, so we decided to concentrate on Konica Minolta. It has taken us five or six years to get them across the line and concentrate on the development of that customer, the development of the product and the service, and then take it to market. We find ourselves now in a situation where we have a commercialised product, we have a client, we are about to pick up our second order which will be for \$2 million, and it will generate \$1 million of revenue from just one order. It has the potential to be a very big business. By its very nature, it is totally all overseas. Head office decisions are from Tokyo, New York or London, they are not made in Sydney, and we do not

really want to talk to people who only have 3,000 devices to monitor. We are establishing a global infrastructure with carriers overseas to carry the information back and deliver to the various service centres for the various customers we are talking to. We are also talking to companies like GE and ITT, so it is quite good. In talking about where we see difficulties and experiences, do you want me to go through that now?

CHAIR—Please do, yes.

Mr Johannson—I would like to talk about some specific opportunities, and then some difficulties that we have encountered. The specific opportunity and area where we could do some very smart things is specifically with Austrade. We have worked very closely with them. As a little company—again, two blokes competing on a global basis—we have two things going against us: we are a little company and we are on the wrong side of the world. When you go to the States, regardless of what we think about ourselves, we are not taken too seriously. A guy in Atlanta said, ‘So what do you do down there?’ They just do not get it. We have those things working against us and we really have an uphill battle.

Now, we have beaten Siemens. We have taken on Siemens and we have done it. We need every assistance we can, and this is where Austrade can do a lot more. They have an extraordinary infrastructure. They have people in London, and I have met them. I am meeting Chris Kneppler in a few days time. The people in France and all around the world are fantastic; they are there to help you. We have all of these resources, but there is so much more that could be done that these people cannot quite yet do. I am talking here of the problem we face. Last week I had to organise connections in the Philippines. Konica Minolta want to put 6,000 of these things in the Philippines. That means we have to have a carrier relationship with a cellular carrier in the Philippines. We do not have a company over there, and we are not Filipino nationals, yet in three weeks time we have to have that going. That is a really challenging thing for two people!

CHAIR—Look, you do not have to be a Filipino citizen to operate out of the Philippines.

Mr Johannson—We want to make money, sorry. We spent two days and I got an accountant who will help us out. But wouldn't it be great if I could, through a more formalised relationship with Austrade, say: ‘This is what we're doing. We need somebody to take three SIMs, to be our front end, our temporary office, for the next two, three or four weeks while we get our act together and get this thing going in the Philippines. Can you help us?’ We can do that because they know who we are, we are accredited, we have an account with them—if we have an address, a contact point, the phone number of somebody who can have some SIMs delivered to them and then courier them out to our customer; if we have somewhere so that when we are there we can grab an office and make a few phone calls, set up a lunch and do some things to raise our credibility and profile. We are two guys but our partner is the Australian government. Now, that is something we would really like. If you cannot use the word ‘partner’, it is something else, but we are not a couple of dudes who have just arrived to do some business in that we have this affiliation with a very credible institution.

CHAIR—I would have thought your association with Konica would have been more important than with the Australian government.

Mr Johannson—No, we are the customer, and we are talking to another company. It does not work that way. They are not billing Konica, they are billing us, because we are charging Konica and making money on the way through. We are providing a service. Konica, to be honest, do not want to deal with 60 carriers. That is our market. Our customers hate carriers; we do too, but we know how to handle them. I have been dealing with them for 25 years, so I have learnt about it. Our market is taking all the nasty stuff away from a monitoring strategy, doing it and packaging it, and that is what we do. But we have this impasse, we have this difficulty when we are dealing with new countries. So, if there was something that Austrade could do, it would be to look at other services they could provide to companies that are exporting at short notice, by way of a formalised relationship that could be developed in Australia.

But if we look at more core issues that I have found—not just with Gazelle but with all the three companies that I have been involved in, and I think a lot of others—the core of it goes through to funding. We touched on VC and funds a little while ago. In May 2003, we applied for COMET funding. We were told we were too early, ‘but for \$30,000 we can help you out’. Now, I have six or seven different times approached various consultants and various people for COMET funding, but every time we have been told we are too early, we are not there, there has not been enough software development.

And it went on until September 2004 when we approached somebody who told us we were too advanced—this is six months after we were told we were too early: ‘You are eligible for R&D Start but that finishes this week; you will be eligible for Commercial Ready, which starts in October.’ Here we go. In October, the email arrives. I apply for Com-ready. We were confirmed that we were too advanced for COMET, but we did not have enough software development for Com-ready. This was after a two-hour meeting with somebody who really could not speak English very well, and we could not communicate at all well and it just did not happen. We basically thought this was just too hard, and we kept on going down the path of running our business without government funding.

About two months ago, the guy who sold my last business was having a drink with me and he said: ‘I’ll help you out. You need to meet these guys. They are a team of consultants who help organisations like us obtain government funding.’ I did not even know who they were. But we went down the path, and when I went there, I thought, ‘Here we go again.’ But as it happens, they have helped us. The irony is we have just had a Com-ready application pre-approved. We have found out that as we are six years old, we are no longer eligible for COMET government funding! You have got to love it.

CHAIR—It is either laugh or cry, one of the two!

Mr Johannson—As it happens, we have also been introduced to the wonderful world of R&D tax concessions and Com-ready, and we are going down that path and it is very good. What can we perceive from it? I think there are a couple of issues. We have not been able to communicate our needs, or who we are, or what we are doing, appropriately to the people who are talking to us about Commonwealth government funding. They have just not understood what we are doing. I say this because the people who have got us the funding have sat down with us for hours and I have told them what we are doing. The submission that has been made to the government is in totally different parlance to what I would normally use and documents that I

would put together. Maybe this gets to the core of what I am talking about. It is the profile of an entrepreneur.

They know the system, they know how to get money from the government, they know a niche and they set up. That is an entrepreneur. But there are thousands of people like me. I was an IT consultant-salesman. There are plumbers, tennis players, coaches, teachers and gardeners who know their business incredibly well, and they have seen a niche. They have worked on it for five years, they have developed the product that fixes that problem, and they have worked out a way to make a bob out of it. Now, in doing that, they have mortgaged their house, they have borrowed money from everyone they know, but they have a product that can be commercialised. They go and see the people from COMET and the other government grant people whom you get to meet, and they cannot get the idea across. It just falls; there is a mismatch. So it dies or, more to the point, they try to do it unfunded, and it dies. That is a terrible tragedy. I do not have an MBA, and most of the people who apply for COMET funding do not have an MBA. I have applied for a home loan. Most people have applied for a home loan, but that is about it. We do not go any further, yet trying to satisfy the requirements of the government application, the 40-odd pages, forget it. They find it too hard, and they do not use the right words. That is a big problem. There is really a bigger problem and it goes back to the core of the thing. Everyone will tell you—and I know dozens of guys like me who have tried to raise money, and we basically agree—it is impossible to raise money. Now it is not, but it is for us; we find it incredibly difficult.

CHAIR—You did not do too badly.

Mr Johansson—I have had a bit of experience; I did not raise any money for the first lot. I did it myself, and I just did it tough. I had enough money to get myself through, but I have just raised some cash and I have done some other things. I have a few years on me. As a 30-year-old, I would not have had a chance. If you had 100 people in the room today, 100 entrepreneurs like me—a few IT guys, they could be plumbers, they could be anything—and you said: ‘As the government, we have \$200,000 as a grant. We have money for you for what you require. Thirty per cent of you guys will go away with all the money you need. It’s a grant. But there is an alternative. If you all agree to a loan that can be paid back out of cash flow at favourable terms, we will give it to 70 per cent of you,.’ you would have absolute unanimous agreement that they would all go for the loan.

You have to understand that guys like me, entrepreneurs, do not necessarily want a grant. What we want is a bloody opportunity! It is real simple; we just want an opportunity. We have something which we believe will make a lot of money. We are not trying to save a frog or discover a new star. We are not looking for a handout, and I can understand the government sees people coming to them every day for thousands of different reasons, just wanting money. We do not want money; we want an opportunity. So, if there was an opportunity by which we could get some money and incorporate it into our business and trade, that is pretty much all we want. We would be more than happy if the government could help us to take it and pay it back, and even pay a dividend. That is the difference. We are very, very different from a lot of people who will come to the government for money.

What I really want to talk to you about is the creation of a new environment, if you like, that recognises not the high-end venture capital, but the start, the angel, the low level, the entry level.

What I am looking for is a change of environment that says, 'Okay, if there are people out there who have a good idea and they are eligible'—we are not talking about somebody who wakes up with a rush of blood and thinks I will get half a million bucks, but somebody who has spent the years developing a concept and can satisfy eligibility criteria—they can apply for a loan.' It is a loan that is tied to cash flow, so they can build their business and pay back the money that could be subsequently reinvested in new organisations, new things—not a set amount but an amount that fits into the business plan. The business plan is part of it because the other part of a start-up is they need mentoring. These are people who have been the lawn cutting guy and all of a sudden they are going to run a service to sell to lawn cutters.

They have never run a business like that before, so let us get mentoring as part of it. We get a series of mentors in, the government creates a loan, the mentors are paid commercial rates—and these are experienced business people from all walks of life doing all different things who have relevance to that particular start-up. These guys form an advisory board to this company that has got the loan, and they go off and do their business, and subsequently pay back the money. It overcomes two issues that start-ups face—lack of cash and a lack of experience. It actually provides jobs for senior people who are semi-retired. That is the government side.

On the private side, there is another issue. We have tens of thousands of high net worth individuals in Australia who do not invest in small business, in angels. I can tell you, they have all had a go, they have all looked at it and they have walked away from it. In reality, there are four things they put their money into: the first is a car, a boat, a horse; something to have fun with. They write the money off. The second is charity; they get a nice, warm fuzzy feeling inside. The third is real estate; they might make a bob; at least they know about buildings. The fourth is the share market. Start-ups do not quite fit in there. They are not quite shares because when you talk to any high net worth individual who is looking at kicking in half a million bucks, he kisses the money goodbye. That is the first thing he says: 'I am writing this money off.' He can do that in a boat and have a great time, but when he puts it into a start-up, he does not have a good time; he just has to deal with a group of individuals he does not understand.

Let us create an environment whereby they get something for their investment. If they put in say a maximum of \$500,000, they get a 150 per cent tax return, like in the film industry a few years ago. It would be a part of every investment portfolio if they could do that. They would kick in their \$375,000, their \$500,000, as part of their investment, including real estate shares. Here we have two areas that will significantly change the start-up market. We have private individuals kick-starting; we have the government kick-starting, and you have potentially thousands of new start-ups.

I just want to talk about one very small thing. A start-up does one thing; it creates jobs. What Costello was talking about the other day, and no-one has been able to answer, is where do you get a 20-hour job from? What a start-up needs is people for 20 hours; that is what they want. We do not want in my company a financial controller at \$150,000 or \$200,000; I need an accountant or somebody working at the home three hours a day who can do my books—that is what I really need. Other businesses need a salesperson on the road for 20 hours a week, 15 hours a week, because they cannot handle too many sales. You are changing the environment in a lot of different ways. You are allowing new companies to start, with interesting employment opportunities, working from home, working funny hours, shorter periods of time, and you are totally changing the environment, and that is what I think we need to do.

CHAIR—You talked about 30-year-olds. We have one, Michael.

Mr Gerace—At the higher end! My name is Michael Gerace. I am one of the directors of Thehairstyler.com, which is a 100 per cent Australian firm. I am from an IT background, and my business partner is a hair stylist. Together in 2001 we launched a hair related web site where we offer—

CHAIR—Do not laugh!

Mrs VALE—It is probably for women, is it, Michael?

Mr Gerace—Twenty per cent for men, though. We find that 20 per cent are men, so they are pretty vain, too. So, basically we offer the possibility of our users viewing themselves—either viewing their uploaded photo or a model photo that we create—with over 3,000 hairstyles in 52 colours, including women's everyday, which includes short, medium, long, wavy, straight, curly, celebrity hairstyles, alternative, dreadlocks, and men's hairstyles. Eighty per cent of our clients are from the US where the Internet is widespread and based on the population too. In Australia we have a small market, which is understandable because of the population and the lesser spread of the Internet.

Mrs VALE—What do you actually do? Does a person send a photograph in and they can just click on to hairstyles?

Mr Gerace—Yes. Well, I am in the IT, so I look after the website, the program inside of it; my business partner creates the hairstyles, and at the moment we employ two other staff who also help in creating hairstyles and uploading the photos and correcting the photo for colour if it does not look good.

Mr Strangis—Michael, could you explain how you actually make money?

Mr Gerace—We offer a membership fee, \$20.95 for six months, where they can access their account, 24/7, and view the 3,000 hairstyles with their photo.

Dr JENSEN—I think you have found a new customer!

Mrs VALE—Wait until I tell the girls! So, that is your access, Thehairstyler.com?

Mr Gerace—Yes. We basically made it easy for people to find the website with our name. We started in 2001 at the Sydney Hair Expo. We went there and found a lot of interest and decided to keep going with it. At the start, it was just a game. We found a lot of interest.

Mrs VALE—I see it has some very practical applications.

Mr Gerace—Yes, it has. We found that other websites do the same, but not as good as us.

Mrs VALE—You probably touch up the photographs, that is why!

Mr Gerace—We also have been contact by Braun, which is Gillette, to offer hairstyles for content for them; by iVillage, which is the largest women's website in the world, to offer content for them. This is basically providing the hairstyles with our application integrated on their website. As far as problems, I found Austrade by chance. I did not know it existed. I looked on the Internet one day and thought where could I find some funding—private or government—and I found Austrade, and I thought, we will start from here. It has been going well with Austrade. They helped us a lot in exports with the costs. Our major problem was our start-up risk where we thought, is it all worth it? Should we leave our jobs to start-up something like this? In the end it is worth it, but at the time you think, what do I do? Our major problem is that we want to grow rapidly but cannot do so without financial assistance. We know there is huge potential out there, from our website, but we are growing slowly. Now we have four people; we are looking to employ another person. We know what is required, but we do not have the funding to do it. We know we need another IT expert, someone to provide more hairstyles, to add more hairstyles to the database, but that is our obstacle at the moment. It is just the funding. The obstacle at start-up was the risk; for example, should we take the risk?

Mr QUICK—What sort of money are we talking about?

Mr Gerace—We turn over more than \$1 million a year at the moment.

Mr QUICK—So, for expansion, how much, \$100,000 to half a million?

Mr Gerace—Probably \$100,000; just to employ one or two other people. We can see that the more hairstyles we provide, the bigger we get, the more money we can get from, for example, raising our price. At the start we provided content for iVillage and that in itself is networking. Other clients see our content on iVillage, and we just have to have the manpower to provide hairstyles quickly.

CHAIR—You have a million dollar turnover, and you are stuck over a hundred grand?

Mrs VALE—How many hairstyles do you need?

Mr Gerace—A lot of people say they cannot find anything.

Mrs VALE—But hairstyles go out of fashion.

Mr Gerace—Some do, some do not. Classic hairstyles never go out of fashion. We find it also recycles.

Mrs VALE—Everything old is new again.

Mr Gerace—Yes. Well, bridal formal always stay. We find that, for example, we have 1,000 short straight hairstyles, but we only have, for example, 200 bridal hairstyles. If we had 1,000 hairstyles, we could certainly get more clients from it and provide a better service.

Mr QUICK—The banks are not interested?

Mr Gerace—We have never contacted anyone in that regard. We just found Austrade because I do not know where to look.

CHAIR—I would give Austrade another ring.

Mr Gerace—I just found Austrade by chance, and I did not know where to go from there. I have found that an obstacle too.

Mr Strangis—So, Michael, we have taken you into the USA and where else? Is that the only offshore market so far?

Mr Gerace—All the English-speaking countries. We went to the UK; we are advertising in five magazines. In the USA we are advertising in around 10 magazines.

Mr Strangis—Is language a barrier?

Mr Gerace—Well, another option would be to translate our website.

Mr Strangis—We can help you there, certainly.

Mr Gerace—It is just the manpower, that we cannot do everything. We are trying to do it step-by-step and we prioritise.

Mr QUICK—You almost need an instant response rather than waiting for a bureaucratic response, with all respect to Mr Pasqualino?

Mr Gerace—Well, yes.

Mr QUICK—Because if you can suddenly whack another 500 styles on—

Mr Gerace—If we can translate it, instantly there will be another market open. Like Spanish, which is the second largest speaking market.

Mr QUICK—Or into India or China?

Mr Gerace—Yes.

Dr WASHER—So, Michael, have you been to a bank with a business plan proposition?

Mr Gerace—No, I have not, because I did not know—

Dr WASHER—I would have thought there would be a few banks that would probably look at that with some interest. If you are showing turnover, they will lend on turnover, they will lend on a couple of things. If you have real estate value or turnover value, they will lend on it. If you have shown a demonstrated and continual turnover—they are in the business of making money. If you can show you are making money, they will lend you money as long as they are going to get it back.

Mr Gerace—Okay, but I did not think of that.

Dr WASHER—Just while we are talking about loans, I can see your point. We do this under the department of education in terms of HECS loans, private loans for education up to fifty grand and all this, but my impression is that Treasury—and that is also a large bureaucracy—when they advise the Treasurer, he would freak out if you there was a loan situation where there was no determination on your budget when you will get it repaid. Do you know what I mean? There is a limit. They can contain it in education with some level of predicability. When they look at their accrual accounting, in other words, what they project as shortfalls and gains over a period of time, do you have any idea, if you were sitting there, and the chair is the Treasurer, how you would portray it to him to overcome that problem?

Mr Johansson—Yes, sure. I have thought about it, not for a long time, but the loan is subject to two business plans. To be eligible, you have to submit a business plan. Once that is submitted, you pick from a group of people who become your mentors. Now, these are specialists in the field, aligned to the field, or groups of individuals who have had experience in aligned fields and the sort of people you will need. You then together build a business plan, which includes their fees, by the way, because they are paid commercial rates. It is a three-year business plan, or a two-year business plan or what you see as being appropriate. You submit that to the government. In that business plan, there is income from what you are generating, there are loans required, when they are required, there are tranches, as you do with any business plan that you are doing for any venture capital company. They want to know when the money is going in, and the government would too. So you do that. Now, the people who are the mentors have a responsibility to make sure that it is run properly, that the people who are running it are at the pointy end of the plan and are not driving around in BMWs but have to run the business prudently. They are a safeguard. They are also there to stop the ambushes, because when you are focused on a product as a start-up, you are down there, you have tunnel vision. You cannot see the ambush coming from the side, so you have people to help you to look at what is happening and say, 'Have you considered this', 'What about that?' or 'Is this going to have impact on you?'

It is not really the right type of environment. We see start-ups now really going from disaster to disaster, and some of them get through. Most start-ups just do not have the cash to do it properly, they do not have the time to do it properly, they do not have the people to help them do it properly. What I am proposing here is an environment that actually changes all that. They will have the cash. They will not have the cash to have the flash offices, but they will be able to run their business properly, pay their bills, employ people, and concentrate on getting to a place where they may raise proper and traditional venture capital, or just survive, just keep on going running as a business. It could apply to anybody.

I was thinking coming here, who would be eligible? Afghani refugees could conceivably—I have never had Afghani food, and as you might have gathered, I am a bit of a foodie. I would love to go to a restaurant—now, they may not have a great deal of experience in running restaurants, but they would know how to cook Afghani food. We get an experienced restaurateur, somebody who knows about health requirements, occupational health and safety, may be only spend a couple of hours a week with them. They may need to borrow \$100,000 to set up a small restaurant, but mentor them through that process of getting the restaurant going and getting regular customers. In a year's time, they will have themselves a business, and they owe the government \$100,000, and they start paying it back. There is no reason why they would not pay

10 per cent yield for the year they have had the loan. You would be happy to do that. Yes, you can budget for it, if it is done properly. If you are just going to throw money at people, no. But if you are going to apply eligibility and proper due diligence to the handing out of the money, because you know when the money is going to be coming back, when it will be drawn down, you can run it like a business. That is all you need for any business. You can have a budget for every year; it does not have to be a lot one year and less the next year—it can be all over the place, depending on what Treasury allocates. I do not pretend to understand the workings of government, but like any other business: money comes in, money goes out.

CHAIR—This is an unsecured loan?

Mr Johannson—It is an unsecured loan, yes.

Mr Gerace—I think another option would probably be the government partnering with the business.

Mr Johannson—That is what I am talking about. The government actually becomes a shareholder. What I am saying, the impetus has to be to keep the loan to as short a period of time. If it only goes for three years, when it is over, the government gets a yield, it gets, say, 10 per cent dividend for three years.

Mrs VALE—It can then go on to the next one, or to the next venture.

CHAIR—Or it can go broke.

Mr Johannson—Whatever, but if it gets sold, the government is a 10 per cent shareholder.

Mr Strangis—Can I just add one point? There are broader trade implications for this, too, with our international trade policy, and there is the WTO and other concessions that governments may be paying in agreements and treaties that we have signed. It is certainly an excellent idea but it would have to be balanced against a whole lot of other considerations in terms of the way we are perceived by our trading partners. If it was made to look like it was some kind of concession that we provide to different sectors, then we would be in trouble.

Dr WASHER—China is having grief at the moment over this because it is all government-owned. You know what I mean?

Mr Johannson—The concept is to make it easier. I have to tell you—getting funding is just—

Mr Gerace—I have not tried that.

Mrs VALE—Do you have a good accountant, Michael?

Mr Gerace—Yes, we do.

Mr Johannson—With due respect, you have not been to a bank. Let me tell you what they will say. I have been down that path. If you want to put your house up, you can. The problem is most people have done that already. Most people have stretched their mortgage, borrowed

money from their parents, the bloke next door; they cannot go anywhere else. That is what you do to get your product to a point where you can actually demonstrate it, because it actually takes a lot of time and a lot of money to get anything to that point.

Mr QUICK—Michael, you mention in your submission that you have 90,000 registered members. What is the maximum you could cope with?

Mr Gerace—What is the maximum we could cope with? The database goes to millions.

Mr QUICK—You have 90,000 in four years since you started?

Mr Gerace—Yes.

Mr QUICK—It is growing at what sort of rate?

Mr Gerace—Exponentially.

Mrs VALE—You are going to have 90,001 tonight.

Mr Gerace—That is free membership!

CHAIR—Thank you very much for this, in particular. You did not finish the story: did you get help in getting the stuff to the Philippines, and are all the Philippines machines set to go, or was there a hitch?

Mr Johannson—We found an accounting company that is helping us out. The next order is to go to the Philippines, but we know the next time they will ring us it will be from Mexico or something like that. It is just the nature of the business, here, and I am not complaining, but that is where I can see Austrade being able to do a lot more for us. I am not saying they are not; they are very good, but they could be doing a lot more. It is a great asset.

CHAIR—One other question: you never heard why they did not pick it up—why the Australian bureaucracy, why the Commonwealth Public Service did not pick it up?

Mr Tregea—No. We are still working on it.

CHAIR—I think I can now thank everyone; I thank the Secretariat, I thank Hansard.

Resolved (on motion by **Dr Jensen**):

That, this committee authorise the publication of evidence except in camera evidence.

Committee adjourned at 4.55 pm