COMMONWEALTH OF AUSTRALIA

Official Committee Hansard

HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON SCIENCE AND INNOVATION

Reference: Pathways to technological innovation

MONDAY, 28 NOVEMBER 2005

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HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON SCIENCE AND INNOVATION

Monday, 28 November 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, Mr Hayes, Mr Jenkins, Dr Jensen, Miss Jackie Kelly, 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

Committee met at 4.35 pm

BERMAN, Ms Tricia, General Manager, Innovation Policy Branch, Department of Industry, Tourism and Resources

KELLY, Ms Patricia, Deputy Secretary, Department of Industry, Tourism and Resources

PEEL, Mr Bill, Executive General Manager, AusIndustry, Department of Industry, Tourism and Resources

PENNIFOLD, Mr Craig, Head, Innovation Division, Department of Industry, Tourism and Resources

ZIELKE, Ms Judith, General Manager, Innovation and Collaboration, AusIndustry, Department of Industry, Tourism and Resources

HEATH, Dr Ian, Director General, IP Australia

CHAIR (Mr Georgiou)—I declare open this public hearing of the House of Representatives Standing Committee on Science and Innovation. The inquiry arises from a reference to this committee by the Minister for Education, Science and Training, the Hon. Brendan Nelson. There have been 96 written submissions to date and the committee has been conducting public hearings and informal discussions. This is the ninth for the inquiry.

I welcome witnesses from the Department of Industry, Tourism and Resources and IP Australia. Although the committee does not require you to give evidence under oath, I should advise you that the hearings are formal proceedings of the parliament and warrant the same respect as proceedings of the House itself. It is customary to remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as a contempt of the parliament. I invite you to make an opening statement before we proceed to questions.

Ms Kelly—Thank you for the opportunity to appear again before this committee. I understand that the committee is starting to formulate positions on some of the key innovation policy issues. I want to make some brief opening remarks about how we as policymakers see some of those key issues. As the title of your inquiry implies, there is no one pathway for a new product, process or service hitting the marketplace. Pathways depend on the type of innovation. The commercialisation pathway for a new product will be different from the pathway leading to the innovation of a new production process. Commercialisation pathways also, as we know, differ across industries and pathways taken are also dependent upon firms and firms' culture and personnel—particularly their skills, creativity, leadership, management and networks.

However, when talking about technological innovation, we do know that collaborations, partnerships and linkages are essential ingredients of success. In Australia, relatively few firms collaborate with the public research sector. Only eight per cent of innovating firms currently source ideas from universities. The 2003 ABS *Innovation in Australian business survey* found that 80 per cent of innovating businesses sourced their ideas or information internally. That highlights the need for highly skilled people. The survey also demonstrated that firms frequently source new ideas from their customers, their suppliers and their competitors. To survive in a

competitive environment, Australian firms have to be responsive to their suppliers, distributors and customer base and it is natural that they will derive many of their new ideas and innovations from them.

On the other hand, the Australian government is investing billions of dollars in public sector research every year. Some of that research is directed to the public good; some is blue sky, basic research, which is often the basis for truly large breakthrough developments; and some is applied research directed at developing commercial applications of technology. Public good and basic research are the highly valuable and legitimate core of Australia's research effort. However, we believe that Australian industries and Australian firms should be realising a return on some of our public sector research, particularly the applied research.

A key barrier to this is the cultural divide between public sector research and industry. It does exist, but there are efforts to break it down. Existing programs such as the cooperative research centres program, the so-called CRCs, and the ARC linkages program are examples. Initiatives such as the Biotechnology Centre of Excellence and the national ICT Centre of Excellence are others. Another model I would like to draw to the committee's attention is the Australian Industry Group's innovation exchange or trusted intermediary model whereby qualified people act as partnership brokers between firms and the public sector. The Australian Institute for Commercialisation's TechFast program also undertakes similar activities. While these are small, relatively new initiatives which DITR has provided funding support for, they are showing some significant promise. However, there is no one way to tackle this issue. Similarly there is no one standard program that will assist all firms to innovate, grow, create jobs and export.

That is why DITR has a range of different programs that deal with different market impediments and some that deal with issues peculiar to particular industry sectors. The COMET program aims to enhance small new start-up company commercialisation prospects by supporting activities such as business planning, management skills and development. Commercial Ready provides support for specific R&D projects by SMEs across the spectrum of development, from very early stage proof of concept to later stage development. The Industry Cooperative Innovation Program supports firm-to-firm collaboration projects. We have other programs, such as the R&D tax concession, to encourage business expenditure on R&D. We also have venture capital programs to assist firms in sourcing capital to fund their growth and commercialisation. We regard these VC programs as an essential element of the commercialisation process.

Without early stage funding, key commercialisation opportunities will be lost. You will be aware that we currently have an external panel reviewing our venture capital programs. That panel will report to the Treasurer and the Minister for Industry, Tourism and Resources in the near future. Thank you for listening to that opening statement. I have with me a range of colleagues from across the department and from IP Australia and we will be happy to take questions about our activities and how they assist firms in their pathways to technological innovation.

CHAIR—I will start off in a fairly simpleminded fashion. We have been looking at this area for quite some time now, as you can tell. I believe one of the problems is the plethora of programs and agencies in the area. The chart for this looks like a series of intestines. That does not mean it is bad, but how much complexity can you take? Is there an architectural rationale for

the way in which these programs are being proliferated, if I can use that term? Please be critical, if you feel so inclined.

Ms Kelly—As I said, within our portfolio we have a range of programs because we do not think there is any one answer. There is a range of market impediments out there and there is a range of ways to tackle them, so a number of programs have grown up in response to those particular issues. We have, though, tried to make moves over the last year or 18 months to simplify and bring together some of our programs—the Commercial Ready program, which began in October, brought together three programs under one umbrella. As I said, that now provides assistance from the early stage proof of concept to later stage development. We do have the COMET program focused at early start-up businesses focused also at spin-offs from the public sector. It attempts to get them into an investment-ready state. We have venture capital programs to then follow on from those early stage investments. We have the pre-seed program specifically to encourage the development of ideas coming out of universities. My colleagues from AusIndustry might like to add something on that, but I think the reason why we have a range of programs is to target a range of areas where we see impediments.

Mr Peel—I will just add that in marketing our programs, although we will advertise specific rounds for programs, we generally market AusIndustry as a place to come for industry assistance. We listen to the situations of particular businesses and then advise them on what programs might be appropriate. So we have over 200 customer service managers around Australia. We have a number of regional offices in regional Australia for people to contact, and we have a number of small business field offices around the country—we have about 60 of those in regional Australia, as well—where people can come and talk about their particular situation and see what program might suit them. But the programs, as Ms Kelly has said, have particular aims, and we do not believe they duplicate one another.

CHAIR—That would really be a world first, so congratulations.

Mr Peel—Thank you. We have tried to simplify a number of programs recently with the introduction of the Commercial Ready program, as Ms Kelly has said.

Ms Berman—We also work very closely with our state and territory colleagues, so the programs we support and the assistance we give meld in with and complement those provided by states and territories, which is extremely important to ensure that there is a movement for firms as they grow to come to the Commonwealth for larger quanta of money.

Mr QUICK—Evidence basically shows that there are around 115 programs through the states and territories and 50 through about 11 departments, so we are talking about 165. Couldn't you do something as simple as having a program based on monetary limits rather than on the complexity of innovation?

Ms Berman—I think you will find that monetary limits or caps are indeed being used both in the states and in the Commonwealth. It tends to be that a smaller quantum of money is provided through the states. We had some people visiting us in relation to COMET type programs last week, in which the states were saying that they were very happy with the complementarity, and they prepared their firms so that they were more competitive when they came through for the larger amounts of support from the Commonwealth.

Mr QUICK—In the sifting process, do they come to AusIndustry and you refer them? Do you say, 'Look, New South Wales have a better program, and, if you are from Tasmania'—as I am—'there mightn't be the capacity to run a program, so you should go into Victoria and jump through their hoops'? How does it work?

Mr Peel—We have a number of programs that we administer in AusIndustry, and about 12 of those are related to the innovation area that the committee is having a look at. We have also approached all of the state governments and asked them to provide us with details of their particular programs on a regular basis, so that, if our people happen to be talking to a company about assistance that it might require and none of our programs are appropriate, we have the capacity to steer them in the direction of a particular state government that might have a program that is useful to them. Not all of the states have been—

Mr QUICK—Could you give me an example of where that might be the case—where you do not have a program and you have to steer them to a state program?

Mr Peel—Generally the state government programs are at the very early stage in areas like early-stage business planning and that sort of thing. When we are developing our programs—or, more particularly, when the state governments are developing their programs—they often check what the Commonwealth has available so they do not duplicate what we have.

Mr QUICK—So there is no real duplication between those 50 on your side and the 115 on the state side?

Mr Peel—I could not say absolutely for certain that there are no areas of duplication, but we do our best to make sure that they are complementary. They are decisions for state governments to make, and our programs are for the Commonwealth.

Mr QUICK—But, if we want to address it as a national issue, surely you are the key players in the whole system? Surely one would assume that—

Ms Berman—Can I add to that?

Mr QUICK—Yes.

Ms Berman—Twice a year there is a meeting between the Commonwealth and the states and territories about all the innovation programs and associated matters. In fact, that meeting was held two weeks ago. These are the sorts of issues that are discussed—and we have New Zealand involved as well. At the moment, there is no concern that there is duplication. They appreciate and understand what we are providing as a service, and we try to work as closely as we can together.

CHAIR—You outlined how many officers you have on the ground seeking to assist people find their way through these structures. How many are there in total?

Mr Peel—How many people?

CHAIR—Yes.

Mr Peel—There are about 430 people in AusIndustry. About 250 of those are out on the front line talking to businesses each day.

Mr HAYES—So these people are out there talking to business about helping to commercialise an activity. Do they also provide advice about, say, getting in contact with various university resource groups? Do you help sift through to find the best research partners for them et cetera?

Mr Peel—No. Our people advise the companies about what programs we have available to assist them. We do not seek to give them advice on how to run their business.

Mr HAYES—It is essentially money based and therefore about accessing financial programs as opposed to any hands-on—

Mr Peel—There is no hands-on business advice but we do have a program called the COMET program, which includes 16 what we call business advisers, who are recruited from the private sector based on their particular skills and experience. Companies that enter that program receive direct mentoring advice on how to run their business, how to access capital, how to put in place cohesive business plans and that sort of thing. Through that program we help businesses think about business issues. Our people advise on the programs available. Also, in the innovation and investment programs, in the Innovation Investment Fund we have a number of private sector fund managers who also take a role with businesses that they invest in—often taking a seat on the board of those businesses—and provide them with direct business advice. We as bureaucrats do not do that, but some of our programs have that facility available to businesses.

CHAIR—Let me ask the question a different way. There have been a number of themes coming through the consultations, and the critical area of consensus is that there is inadequate interface between public research and commercialisation. I will come to the problems with the terms later. How far is this illustrative of a failure on the part of the program structures themselves or the inability of the program structures, in the way that they have been defined and generated, to effectively address the problem? Does that sort of hang together? The way that I see it, we have a general structure and we keep on adding bits to it: 'There is not enough there, so let's create that program. There is not enough there, so let's create another program.' If there is a problem, isn't this a problem that is not just a matter for the universities or the public research institutions and the commercialisers but also a problem that our administrative structures or our coordinating structures are not coming to grips with effectively?

Ms Kelly—As I said in my opening remarks, certainly public sector research is far from the only or the largest source of technological innovation for business. Our programs tend to focus on assisting business. We do have a couple of programs that move into the area of linking between the public sector and business and, as I said, this is certainly an area which we continue to strive to improve. I highlighted the couple of intermediary programs that I think do some of the things that Mr Hayes was asking about earlier in that they broker partnerships between businesses and other businesses or, sometimes, public sector research providers. So we are continuing to, if you like, experiment and try different ways of improving that interface. Clearly the incentives for researchers who work in the universities are very different from those for people who work in business. Their top priorities and their career paths are usually not linked closely to commercialisation. So they are driven by different things and there is clearly a cultural

divide. I do not think that is the case here only. Britain is struggling with the same sorts of issues. I know that DEST through the ARC and the NHMRC are also seeking to provide some incentives through their programs to get better linkages. So it is an area where we continue to strive to do better.

Dr WASHER—On that subject, one of the comments I hear from the universities when they go to set up a commercialisation program for their research course is that industry—we are basing our programs on private industry, not universities—finds difficulty accessing this money. I can understand why. It is designed more for private industry. But they are trying to privatise and commercialise. Where would they access their money? It is not really in any of these programs, is it? Is it a fair comment that they make?

Mr Peel—It is not entirely fair. One of our programs is specifically aimed at commercialising research coming out of universities and public research organisations. That is called a Pre-Seed Fund, which is a venture capital program worth about $104 million. It was specifically designed to search out worthwhile research in universities that could be commercialised. So we have a program specifically focusing on the universities and the research sector. Our Comet program, which I mentioned earlier—the mentoring type program—has relaxed some of the eligibility criteria deliberately so universities can access that program. They were potentially excluded because of the turnovers of the universities in dollar terms. So the program has been specifically amended to remove that criterion so that universities can access that program. While a number of our other programs are not specifically for universities, they are certainly able to access them. There is one in particular that they cannot access, which is the Commercial Ready program, which is a granting program—it provides grants of up to $5 million for R&D, proof of concept and early stage commercialisation. There is a $50 million turnover limit on that. With more than a $50 million turnover you are not eligible. Universities are not eligible for that particular program. But there are a range of others that they can apply for and seek assistance from.

Ms Zielke—I might add to that, just to clarify, that if a university spin-off has ownership of less than 50 per cent by the university, and group turnover provisions do not actually apply, then they are eligible under the program. So if the university takes less than a 50 per cent share in it then they will be eligible in most cases. So there are also positions under which they can apply under Commercial Ready.

Mr HAYES—Are we re-inventing the wheel? It seems to me that a lot of that activity may have been formally discharged by the CSIRO in its former funded capacity of identifying research at universities likely to actually lead to commercialised product. That was one of the things they would bring in, perhaps under their 50 per cent rule—I am not quite sure. Is what we are doing now in that regard replacing what we used to do before—identifying those projects?

Mr Peel—I am not sure that was actually a role of the CSIRO. The CSIRO is more focused on commercialising its own research and generating revenue for that. That is my understanding. I am not aware that they used to perform a role with universities previously, but I have not got a history in that, so I could be wrong about that.

Miss JACKIE KELLY—It is firms and industry sectors, more than the universities.

Ms Zielke—Undertaking contracted R&D for particular companies. So often companies will actually apply for a grant through something like Commercial Ready and contract that out to CSIRO. That has been the situation for quite some time, and that continues under Commercial Ready.

Miss JACKIE KELLY—They also contract out to universities, although that is not done very often.

Mr HAYES—That is in their current partnership arrangements.

Miss JACKIE KELLY—Yes. If a company applies for the grant and they are saying the university is going to carry out the research for them, that is perfectly okay. But there is not a lot of that sort of usage of the scheme, and we are encouraging business to understand that it can be used in that way.

CHAIR—When you say $50 million is a qualifier, what is the unit that exceeds the $50 million turnover?

Ms Zielke—The group turnover arrangements.

CHAIR—What does that mean in the case of a university?

Mr Peel—If a university had a spin-out company that it owned, it would be considered to be part of the university group turnover, and all universities would have a turnover of greater than $50 million. So it would not be able to apply for a grant under that particular program.

CHAIR—So if I was a physics department at Melbourne university and had a fantastic idea, I would be treated as a turnover of Melbourne university. I am not being argumentative; I am just trying to—

Mr Peel—In that example, yes, but then there are other programs that you could apply to—for example, the Pre-Seed Fund, which I mentioned, which is a venture capital fund specifically for universities.

Ms Berman—And there is the opportunity through the Australian Research Council to get support as a university for working collaboratively with industry through their linkage program, which I think you would be aware of.

CHAIR—But all academics for the purpose of this exercise are treated as being the sum total of the university.

Mr Peel—No. We do not provide grants for academics.

CHAIR—That is what is what I am trying to establish.

Mr Peel—We provide grants to businesses, to companies.

CHAIR—No, I am sorry—

Ms Kelly—We are about funding companies, basically. Most of our programs are about funding companies.

CHAIR—So a company generated by a university is taken to be—

Ms Kelly—If it is more than 50 per cent owned, yes, it is taken to be part of the university group.

Ms Berman—Just as a multinational may have associated companies, and one of those associated companies might apply for the Commercial Ready but because of the group—that is, the multinational plus its partners or the other companies in the group—it cannot apply. So the same applies to a university. It is not a different rule.

CHAIR—I get the rationale of that. I am not sure whether it translates directly into university use turnovers. It is not like a pharmaceutical company. Aggregate expenditure or aggregate turnover has got nothing to do with it. So why would we subject them to something that seems to me to be quite logical? You are talking about pharmaceutical companies or whatever. Why would we do that to something that is a very small segment of, and differentiated by purpose from, the purpose of the underexpenditure?

Ms Berman—If you think of where different applicants would be seeking funding, in the university case they can ask for funding from the Australian Research Council even if they are a spin-out, which is basically owned by the university. Do you see what I am saying? They can still apply for an ARC grant, a Discovery grant. So it is not as if they are excluded.

CHAIR—If you are trying to push them in the direction of commercialising their products, why wouldn't one of the incentives be provided by your department or by the range of programs managed by your department?

Ms Kelly—We are encouraging them to commercialise. In our experience, that usually means moving into the commercial sector and having a commercial partner fairly early on. If you want wholly university owned companies to apply for industry grants, there is a danger that you will end up funding university research through the back door, if you like, rather than funding things that have a very strong commercial potential. Them getting a commercial partner for their company is a guarantee, if you like, or a good indication of the fact that whatever they are developing does have a very strong commercial prospect.

Mr QUICK—So would the criticism that departments are not really interested in the later stages of commercialisation be true in some aspect or is that more so with larger projects where there is obviously going to be a huge amount of money? Do you have smaller commercial benches where the demand for money from the Commonwealth is less and you can achieve commercialisation compared to some of the other commercial things that you obviously need tens of millions of dollars and you guys say, 'Go and join a venture partner'? How do you sift that out?

Ms Zielke—We do have some small companies—so where a researcher has decided to set up a company and becomes a spin-out from the university and is in a situation where they have

actually managed to raise enough equity and enter into an IP arrangement with the university so that the university has less than 50 per cent ownership of the company.

In that case, they then come forward, seek assistance and then move forward, so it is about the researcher creating a situation whereby their ownership and other shareholders' ownership of the company is greater than 50 per cent, which is generally providing the cash that they need to then undertake any subsequent work that comes up with their matching funding for any grants that they receive. They then move forward from that stage to do any proof of concept work, for example, any further R&D. They then go through early stage commercialisation so they are ready to commercialise whatever it is that they have been working on. That is generally how we see researchers coming out of universities and using Commercial Ready, for example, to commercialise products. Obviously, COMET, which is about mentoring so that they can commercialise an existing product, is already available to them as well, but researchers who want to take it forward and commercialise it will gain the additional funds that they require and move forward.

Mr QUICK—It is a small concept and a marketable product. Are you having to do the paperwork for half-a-dozen programs? Do you just get COMET or Commercial Ready, or do you have those two plus a bit of something else?

Ms Zielke—No, it is generally those two, so they might do COMET in the first instance or Commercial Ready and then seek assistance through the other one. In a lot of cases, Commercial Ready is all that they do to move forward.

Mr QUICK—Once they grab those two, do you sort of say, 'What other government grant in New South Wales are you accessing?' Can they double-dip into New South Wales and Victoria?

Ms Zielke—They cannot double-dip across programs. We look at whether they want to continue in the existing programs, what stage the company is at and what sort of assistance they need. For example, there might be other things that assist them but, if they want to continue to do subsequent R&D, they can come back if they have a good proposal and apply under Commercial Ready again.

Ms Kelly—What we do find is that many of the companies who take advantage of our venture capital programs have also taken advantage or are taking advantage of Commercial Ready. They will have a grant and get their product or technology to a certain point and then they will usually go to a venture capital program, often one that the government has been involved in setting up and subsidising, to try to get the capital to take the development forward.

CHAIR—I come back to your point about the concern being that it would be funding research through the back door. Shouldn't that be dealt with by your selection procedures rather than by an arbitrary exclusion?

Ms Kelly—What we are looking for is some market signal. We are not necessarily the best placed to decide what has market potential and what does not, so we do see the private sector's preparedness to invest as a very good indication.

Mr HAYES—I think what you say is right in that regard, but how does that follow on in terms of the lack of R&D that we are now experiencing in this country? Obviously, product is being commercialised, but it is not being commercialised out here. Is that symptomatic of a problem we have with commercialising our own research or is it because companies are simply commissioning research elsewhere?

Ms Berman—You intimated that there is not enough R&D occurring in Australia. The business R&D expenditure in Australia is slightly lower than the OECD, but you have to look at why that is the case. Australian industry is very much based on a resources and agricultural mining base, with other industries such as the biotech and IT areas growing, but the areas that we focus on tend to be areas of low-R&D intensity as opposed to high-R&D intensity, such as, say, very large pharmaceutical companies. Countries that tend to have a very high business expenditure on R&D do tend to have the aeronautical or pharmaceutical focus, so we have to accept that as a starting point. Many of the innovations that are done in Australian firms tend to be of an incremental nature rather than being very radical.

Mr HAYES—A lot of the innovations spring from business decisions to do something as opposed to from a researcher having a great idea and developing it.

Ms Berman—That is right, and so we have found, for example, that in innovative companies in Australia, one-third of their expenditure is on R&D, the other two-thirds is on the non-R&D aspects of innovation. It might be marketing, it might be finding financial assistance, it could be changes in processes or procedures. That is quite a bit different from some countries, where there is a large expenditure on the R&D side as opposed to the pick up, adapt and change and sell to the customer as the customer requires. A lot of what we do in business tends to be a response to what a customer need is, as opposed to starting with blue skies research.

CHAIR—Isn't that circular? In that case we do not have a problem.

Ms Berman—No, I am explaining what the current situation is. We are working very hard to provide stimulus to encourage more R&D and build the biotech companies, which can be quite world competitive and based on knowledge as opposed to agricultural resources. We are looking at both aspects of the continuum, if you like; we are catering for both the very radical and the incremental.

Ms Kelly—We are emphasising that the ABS innovation survey tends to suggest that there is quite a lot of innovation done that does not fit into the particular R&D definition.

CHAIR—This leads me to the problem of definition, which is a substantive one. Maybe it is not, but one of the difficulties I have dealing with this field is the assertions that the research effort is not strong enough or the commercialisation effort is not strong enough. When you look at the factual premises of those statements then you get quite confused, because a lot of the measurements really do not seem to be measuring much more than inputs rather than outputs. Is that a reasonable question? Expenditure in itself can be at whatever level.

Ms Berman—It is an input, yes. What we are focusing on more and more, particularly with our programs in terms of picking up the performance indicators, is outputs. We are looking at the

changes, for example, in exports, the number of products, patents, this type of thing, whereas 10 years ago the focus was very much on how much money you spent in this area.

CHAIR—Has that really changed?

Ms Berman—Yes.

Ms Kelly—The deal here is that to some extent it takes longer to get information on outcomes. You can get information on inputs fairly quickly, but with the Innovation Investment Fund, for example, we are just completing an evaluation of that. It is only six years into a 10-year program, so it will take some time before we can comprehensively evaluate what impact that program has had.

Dr WASHER—I want to come back to venture capital. One of the problems that we seem to have in Australia is getting enough venture capital put into what we would call worthwhile projects. From overseas experience, it seems that if you get good projects, they scrutinise well and the return is generally pretty good overall over a wide spectrum. The problem we have in Australia at the moment is that we have a bloated amount of money in our superannuation funds, to the point where it is now really warping the share market, warping property prices and we do not seem to be able to get any of this money into the venture capital market, where the returns are probably, ironically, more secure—I do not want to be quoted too far on the property and share market, but it has certainly distorted that. Also, internationally there is a massive amount of superannuation money. There are countless billions of dollars—I think Australia has got in excess of $200 billion alone. Has the department had a look at the possibility of accessing some of this massive capital to see if it can get that into some of these projects that are the future of this country—probably more worth while than where it is currently being invested?

Ms Kelly—Certainly we are interested in seeing superannuation funds invest a proportion of their available funds in innovation. As I mentioned earlier, there is an expert group currently completing a report to our minister and the Treasurer on our venture capital program, so I do not want to pre-empt what they may recommend. But certainly they have been consulting with superannuation funds as part of that exercise, and that is an issue that they will be including in their report.

Mrs VALE—I apologise for being late. I am not quite sure to whom to direct this question. We were speaking earlier about innovation coming from universities and the programs that you have available. Obviously, the people at universities know about you and your existence, but what about two local lads—if I can put it this way—who have come up with a great computer program for solving a particular problem? Where do they go? Do they know about the programs that you offer? How do you communicate your service to people like that, who are not, if you like, traditional researching institutes but just ordinary Aussies who have come up with an idea?

Ms Kelly—I will ask Mr Peel to address that. We would hope they might call our AusIndustry hotline, and then we would tell them about what assistance we could offer them.

Mr Peel—Essentially, they are the people we are trying to find. We have been talking a lot about universities today, and they can access our programs, but we are after people out there with good ideas that can be turned into commercial successes. We have in AusIndustry, as I

mentioned before, about 430 people in 26 offices around Australia, and the job of 250 or so of those people is to go out there and try to find the sorts of people that you are mentioning. We have a marketing budget, which is a modest one, I guess, of $2.6 million a year, so we advertise. We tend to advertise more the general assistance that AusIndustry have available, rather than specific programs, to get people in the door so we can talk to them about what might be suitable for them. We have regular events showcasing successful companies that have done good things through the grants and other programs that the government has available. We invite people to those events and try to get them written up in newspapers and so on. We do all those sorts of marketing things to get to the sorts of people that you are mentioning. We have had quite a number of success stories over the year, but it is true to say that one of the biggest challenges that we have in AusIndustry is getting the message out there, because 430 people might sound like a lot but it is not terribly many.

Mrs VALE—You are distributed across the nation.

Mr Peel—Our marketing budget is not huge, so we really do the best that we can with what we have. We also connect with state and local governments to make sure they are aware of our programs. We have a group of people in regional Australia that connects up with the local, regional and business associations, councils and that sort of thing.

Ms Kelly—We have a comprehensive web site, too. Many young people, of course, will turn to the web as their first means of getting information.

Mr Peel—We have web sites, electronic bulletins—all the sorts of things that you would expect us to have.

Mr QUICK—Is it wrongly named? Should it be AusInnovation?

Mrs VALE—That is good point.

Mr QUICK—As AusIndustry, the ordinary average punter thinks that industry equals BHP, Conzinc Riotinto or Zinofex, but what about AusInnovation? If you have an idea, AusInnovation is there and then it goes to COMET and so on.

Mr Peel—I do not want to comment on the name; the government has decided on the name.

Mr QUICK—I know.

Mr Peel—I do not have a problem with the name. The challenge is getting the message out about what is available.

Ms Kelly—The other thing is that we have, I think, 31 programs delivered by AusIndustry, not all of which are what you would call innovation programs.

Mr Peel—They are not all innovation programs.

Ms Kelly—We deliver some of our structural adjustment programs through AusIndustry, for example. They do deliver a range of innovation programs. I think it is about 12.

Mr Peel—We have about 12 innovation programs, but we deliver about 32 programs, worth $2 billion per year, to about 10,000 businesses, and we talk to about 30,000.

CHAIR—Who is 'we' in this context?

Ms Kelly—AusIndustry.

CHAIR—Are these the same 200 people that are on the ground?

Mr Peel—That is correct.

CHAIR—So they fulfil multiple functions?

Mr Peel—Correct.

CHAIR—What ratio of their efforts would go into innovation as distinct from structural adjustment?

Ms Berman—By far the majority.

Mr Peel—Innovation is probably the most resource intensive of our programs. We have essentially two sorts of programs, if I can put it that way. There are what we call entitlement programs—if you meet the criteria, you get the benefit. We have other programs which are competitive programs—there is a limited amount of money available and other people are interested in them. Our innovation programs tend more to fall into the competitive space. If you want a grant under those programs, you fill out an application, people have to assess it and it has to be compared to others. We probably have more resources devoted to innovation programs than the others on a case-by-case basis.

Mr QUICK—Is the form like those of DIMIA, where you literally have 30 or 40 of them? How complex are they? How well do the average innovators understand them? With the DIMIA forms, they add two or three categories every year as the need arises. How many forms have been added in the last five years, or have they basically been the same forms for the last five years?

Mr Peel—We have different forms for each of our programs, because the programs are different. We try to make the front end of the forms as similar as possible for the information that we need to collect. One of our biggest challenges is to make them as simple as possible for the people to fill out. We are bureaucrats, and sometimes we fall into the trap of thinking that people know what we mean by certain terms, so we have hired plain English editors and those sorts of people to help us with the design of the forms. Importantly, what we do as well is regularly undertake what we call 'customer satisfaction surveys'. We regard those businesses as our customers. We ask a whole range of questions, including about the complexity of the forms. Our rating overall is around the high eighties to 90 per cent satisfaction with the services that we provide to businesses.

CHAIR—It would be 100 per cent for those successfully applying for a grant.

Mr Peel—We ask both successful and unsuccessful applicants.

Ms Kelly—And other people.

Mr Peel—Of course, if we asked everyone who was successful, they would probably all say that we are marvellous, but we do not just do that; we ask everyone. We are continually getting that feedback and trying to improve the way we do things. Some people say to us that the forms are too complex. We take that feedback on board and see what we can do. Others quite regularly say to us, though, 'In filling out the form for that program, you raised with me a range of questions that I would never have thought about and, as a result of considering those questions, I have now got a better understanding of my business and where I want to go.' In one case, we even got a thank you letter from someone who had decided not to proceed with an application because, in completing the form, they realised they should not be doing what they intended to do. So, yes, on the one hand, we get criticised for the complexity of the forms but, on the other hand, we have equally been complimented for the process that people need to go through.

Mrs VALE—If someone did ring your AusIndustry hotline, would there would be a gatekeeper person there who would listen to their exact situation and say, 'You will need this form or that form' or 'This is the program that might suit you best'?

Mr Peel—The hotline is the first line for the call. The call comes through to the hotline, which we have outsourced to the private sector. They will talk to the company about what they are seeking assistance for and they will be able to tell them if there is an AusIndustry program available to assist them. If there is, they will then direct them to one of our customer service managers who have more in depth knowledge, and they will probably arrange an appointment, get together with them, talk it through and help them through the application process. Some of our customers hire third parties to act on their behalf as well.

Mr QUICK—I will go off on a different tack and ask Ian a question about IP and how bigger players tend to muscle out the smaller players because of the process of delaying tactics and having more clout in the IP sector. What do you do to ensure that there is a level playing field?

Dr Heath—You might have to give me an example of how you think the big players are muscling out the little players.

Mr QUICK—With registering patents, for example, in the USA. People have to put so many patents out in the hope that they are putting a force-field out there to keep other players away. The smaller players do not necessarily have that capacity because they are looking for venture capital. They have the idea but, in the great scheme of things, they are only a bit player compared to some of the big people.

Dr Heath—I do not have direct evidence, but I am aware of the discussion that goes on. Certainly there is a behaviour in the marketplace, commonly seen in the US, where companies work very hard on developing what they would term a patent position, and they use that both offensively and defensively, as I would describe it—offensively to push their own particular commercial venture and defensively to tie up space where they think competitors might move somewhere near them and they will take up patents to do it. The deeper your pockets, the more you can do that. I am describing it neither as a good thing nor as a bad thing, but I think it is true

that if you have a lot of money you can do more things in society in this world than if you have little money. There is certainly a behaviour there.

Mr QUICK—In the national interest, how does the department run interference? Do you just sit back and say, 'Best of luck,' or is there some government assistance? The ordinary, average punter often says, 'All these good ideas are going overseas because we don't have the venture capacity to do this; the whole patent issue is too complex and we have to start beating our heads against some of the big American businesses.' Do Australian government departments say, 'We are going to have a policy to ensure that you get some assistance'?

Dr Heath—I will have to pass that back to my colleagues, but let me speak for my office. My office is the regulatory authority, so we are charged with the responsibility of examining the applications and determining whether they meet the criteria in granting them. We have quite a focus on trying to make sure that the system is accessible to anybody who wishes to access it. So we have a lot of programs that are designed to make sure that people understand that the system is there and how it works, although almost invariably we advise people who are trying to access the system that professional assistance is desirable. We also have some administrative settings, if you like, which are designed to try to make the system work even if your pockets are not so deep. For example, in the patent system, we have, unusually in the world as it stands at the moment, a pre-grant opposition system—that is, at the point at which we have said the application is probably okay, there is a period of time when that matter can be brought back before the office by others. Why do we that? In most other systems, the alternative is that you do it after grant and you do it through the court system—and your pockets have to be particularly deep to go through the court system. We have an arguably cheaper administrative step, where at least the validity of what is going on can be tested without spending too much money before the grant is finally there, so there is a policy setting there. My office does not run programs that support industry to develop their patent position but some of the AusIndustry programs, the ITR programs, do.

Ms Zielke—We provide assistance as part of eligible expenditure under a number of our programs for companies to protect their IP and undertake searches to be able to protect their IP. For example, if a company is undertaking research and development on a particular project at the same time that they are undertaking that R&D—and our grant supports 50 per cent of those activities—they can also use 50 per cent of the grant to fund their patent protection and any searches that they need to do in relation to that. That is under the Commercial Ready Program, in particular, but there are different arrangements under a number of our programs.

Mr QUICK—Is that outsourced or within the department?

Ms Zielke—That is part of the funding we give to the company so that they can do it themselves. It helps with the cost of doing that.

Mr Peel—They might hire a patent attorney or someone like that to act on their behalf, but we help with the cost of that.

Mr QUICK—To what limit?

Ms Zielke—Up to $100,000 in relation to commercial ready. Generally the advice we have is that the starting point is at least $200,000. We provide up to $100,000 for them to get started.

Mr Pennifold—When we look at the use of patents by industries we find that different sectors use formal IP protection quite differently. As you would expect, higher technology sectors such as pharmaceuticals and biotechnology are very large users of formal patent or IP protection, but other industries with more service orientation tend not to be. We do have programs that support it as part of a business R&D development process, particularly in relation to the pharmaceutical and biotechnology industries. There is a program called P3, which has similar sorts of provisions to Commercial Ready. Under those programs we support people taking out appropriate IP protection, which would be Australian patents and often recognising the costs in taking out that support internationally as well as to protect their patent position. All of that is taken within the context of a company deciding whether to spend a dollar on R&D or to spend a dollar on IP protection, so it is taken in a business context. It is really about specialist advice: a patent is as good as the person who drew it up for you, so it is important to contact a professional patent attorney.

Mr HAYES—Obviously we are having an inquiry into the commercialisation of technology not because we believe we are setting the world on fire in that regard but because we think there are issues there. From your position close to industry and close to those at the developing stages, what should we be looking at from a government perspective in order to assist the commercialisation of technology?

Ms Berman—One of the issues is encouraging more collaborative activity between firms. When we were designing the Commercial Ready program we had a very large consultative process with industry. We were quite surprised at the lack of support for encouraging collaboration. There tends to be a view in Australia that they can do it alone and that they do not necessarily gain from working with partners.

Mr HAYES—How can we value collaboration, for instance?

Ms Berman—Any collaboration, whether that is with another firm—

Miss JACKIE KELLY—Via tax incentives or further laws to protect IP?

Ms Berman—One way you can encourage it is to have it as part of a tick box that you have to have in order to be given support. If it is collaborative you would be given that support. If it is not, you go somewhere else.

Mr HAYES—But you would not manufacture collaboration solely for getting access?

Ms Berman—No. But it would encourage companies to see some value in perhaps working with a multinational, because that would help them with their international market opportunities.

Ms Kelly—A number of our programs already do that. The Pharmaceutical Partnerships Program is one that tries to encourage collaboration between Australian biotechs and multinationals. Our new Industry Cooperative Innovation Program is about firms collaborating together on particular R&D projects. The intermediaries programs that I said we have recently

been supporting are about brokering partnerships and collaborations. As I say, we are starting to experiment and move into that area more strongly. It is an area that we do see as being important if we are to improve the level of commercialisation.

Mr HAYES—Is Jackie right: should we be looking at tax incentives across this range of development of technology?

Ms Kelly—I think in many cases these are problems of finding linkages, of finding the appropriate sources of research. It is an information exchange problem. My view is that it is probably more useful and more cost effective to specifically target helping firms to make those linkages than to provide a general incentive.

Mr HAYES—Is that the status quo?

Ms Kelly—We are doing some of that now. The status quo is that there are no particular tax incentives for collaboration, but there are some programs that are designed to support it.

Mr QUICK—Is one of the problems that we have so many subsidiaries of multinational companies in Australia that they do not want to necessarily collaborate?

Ms Berman—No. I think it is that we have so many very small firms who do not know how to collaborate. It is an opportunity having multinationals here that they could work more effectively with. As Patricia said, the intermediaries are an excellent way in which that can happen, because you have a person in the centre who can talk to both parties and not appear as if they are biased towards one or the other. They spend a day or so within that firm and within a larger firm and, over time, it might not be those two firms but they could each be looking at five, 10 or 15 firms. We are seeing negotiations, alliances and partnerships being drawn up because somebody without a bias is looking at what the opportunities might be.

Mr QUICK—How would that be funded and through what program?

Ms Berman—At the moment there is a pilot program that we fund, which is now attempting to become sustainable—the Innovation Exchange. It costs in the order of $80,000 a year maximum to have one of these intermediaries work within your firm. Once you have one in your firm, the information that is gained is shared with other intermediaries, so you are multiplying the opportunities for partnering and finding out where something you need might be—even going internationally, because there is now somebody in the US who is part of that intermediary organisation.

Mr QUICK—So which, if any, countries overseas operate like that? Or are we doing it first?

Ms Berman—We are the first in this case. Already I believe Denmark is interested in picking this up. New Zealand has shown interest. It is possible that we may do it with China, because that is an area where very small firms in Australia need assistance in talking with very large firms.

Ms Kelly—When I talked before about the tax incentives, large multinational firms can claim the tax concession if they partner with a small Australian company and do joint research and

development. So, in that sense, the tax concession can be used to support that; but it does not have a specific collaboration requirement. We find that the multinational firms are very important in knowledge transfer—bringing world knowledge, skills and experience into Australia and often providing the most direct route to the worldwide market for Australian products. So those collaborations can be very beneficial to both sides.

Mr Pennifold—I can give you an example of what we are finding in the biotechnology area. One of the reasons we designed the P3 program the way we did was that there is no one route to market. I have some data here I can give you. We are finding with the types of collaborations—in this case biotechnology—that companies are forming to add more value to their business; not only biotech companies to big pharmaceutical companies, but they are collaborating with other biotechnology companies. In an industry like that, they do not really look at national barriers. Many of those companies are operating offices in the US and US companies are operating offices here, so there is a lot of interconnection between the two.

If we look at the biotech sector for calendar year 2004, out of 84 partnerships that were catalogued in that year, 25 were biotech to biotech; the second highest, 18, were biotech to research organisation; and 12 were biotechnology to pharmaceutical company. We find that biotechnology companies sometimes deal with the head office of a pharmaceutical company in New York or New Jersey, or they will actually work through the local office of that multinational. So the multinationals and their subsidiaries here can be a conduit back to head office. I am happy to pass that data across.

CHAIR—Can I come back to the general point. Given the soft character of the data, in terms of Australia's benchmark, how accurate a comparative picture can we actually form of how well or how mediocre we are doing? If you look at US patents—everyone is occasionally looking at US patents as an indicator—we are not doing very well at all. We do well on the soft measures but not on the hard output measures. Is that what we really rest on? On a lot of measures we do very well, except they are not linked to commercialisation.

Ms Kelly—That is right; it is the commercialisation focused measures that we do less well on. As Ms Berman has suggested, we believe some of that is due to, if you like, the structure of our economy as compared with some other economies. If we were very strong in defence industries or pharmaceuticals, we would probably tend to have a higher level of US patents than we have at the moment. Some of the areas that we are stronger in tend not to be very high, if you like, in the patent stakes.

Ms Berman—There is a report that is done every second year, in which we do comparators between ourselves and other countries. That is the innovation report. You have probably seen it. It is a little scorecard and it shows that in some areas we are very competitive, particularly—interestingly—in the pick-up and use of IT, which is a very important component of innovation. That is often the sort of innovative activity that a firm does to become more competitive—it picks up and uses various services in that area to customise a solution. I do not think that should be underestimated.

CHAIR—It is not so much that I am underestimating it; it is just that I get confused about how valid the generalisations are about our performance that are based on data like the scorecard data. There are some fairly strong assertions made, along the lines of, 'We are not doing very

well in commercialisation, or we are not doing as well as we should.' It is really difficult, given the nature of the index and also because, once I start trying to pin down the definitions that we use, they start dissolving before my very eyes.

Ms Berman—What you are saying is correct, and I think there is quite a lot of work going on to give credence to some of those soft issues. They might be called 'soft', but they are actually having a huge impact on whether commercialisation happens or not. It is about getting access to the right service at the right time in order to make the competitive product that you do in a timely way. Often, it is very hard to have a hard measure of that. So we should not think that if we could measure patents we would be a success, because there are probably as many other measures that are equally important which are quite difficult to measure.

CHAIR—We can measure patents; it is just that we do not have many of them!

Ms Berman—No, we do not.

Mr Pennifold—But, again, they are a measure of an input rather than an output.

CHAIR—But do they measure an output better than numbers of tertiary graduates?

Mr Pennifold—They measure a commercial output better than that, but I suppose what we are saying is that what you would really like to measure is the extent to which that patent then led on to some sort of wealth-generating opportunity. So the absolute number of patents may not be directly related to the economic outcomes that come from them.

Ms Kelly—As 80 per cent of a firm's innovation comes from within the firm, obviously the tertiary graduates and the skills are an important measure to look at.

Dr WASHER—I would like to ask about the difference between standard and innovative patents. Patents can be quite expensive, and we have this innovative one which is less expensive. Can you just tell me about the real value of that? Let's say that I am in this game and, naturally, I am short of money like everybody else; what are the pros and cons of taking out an innovative patent?

Dr Heath—The innovation patent was introduced primarily to provide an opportunity for business—fundamentally, the expectation was that it would be small business. Its purpose was to be able to protect innovative activity which was occurring at a lower level than the standard patent system was designed for. So it was, in my language, for the workbench improvement on some things; it was to improve an existing article, rather than to invent something entirely new. We had, already, a second-tier patent system, called the 'petty patent' system, which was not used very much. The test to get a petty patent was identical to the test to get a standard patent, so the sort of question we were asking was, 'Why would you pass the same test and get a protection for a lesser period?'

We have done some small reviews of the innovation patent. It has not been around for very long. It was introduced in 2001. Our early assessment is that it has been relatively successful, given its purpose—that is, the users of it have largely been small enterprises and it has largely been used for incremental improvements. True inventions are still going through the standard

patent system. It is cheaper to gain, so, from a pricing point of view, that has been sustained to date.

There is an argument that is being put by some commentators on the system which says that one of the pathways to greater innovation is to use the innovation patent system to a greater extent than is being done. The usage of it doubled the amount of second-tier patent activity in Australia, but it is still at a very low level. Countries like Germany, Japan or China, which all have second-tier patent systems, have a huge number of second-tier patents on top of which their standard patents sit. Ours is the obverse: our small number of standard patents that we were referring to before sit on top of even smaller numbers of small innovations. In an economy that was truly innovating at a great level you would expect to see a wider use of the lower level system supporting the superstructure of higher level innovation. That is not there in the data at the moment. Our early view is that the innovation patent has met the market need that it was aimed at, but I am suggesting there is a larger market for it but that it is not being taken up. We are not quite sure why not.

CHAIR—Have you tried to find out?

Dr Heath—We have done some market research on that front and the Intellectual Property Research Institute has had a bit of a look at it as well. We suspect that it is a couple of things. One is that the boundary between the two has not yet been properly tested. People are still saying, 'Well, if I can get a standard patent, why wouldn't I, because I get 20 years instead of eight and that must be worth more.' My personal view is that that is probably poor thinking again. To get a standard patent is still an effort. Even though, if you get one, it is theoretically a stronger and greater right, you may have been better off grabbing something quickly and getting your product out into the market. If you look at innovative firms that innovate a lot—this is almost a circular argument—they use the IP system a lot. It is almost a generational thing: if you have a product in the marketplace and you make an improvement to it, the innovation patent is designed to let you quickly protect that and move on without having to go through what are quite considerable hoops to get a standard patent. That does not suit every business. If I were in the pharmaceutical industry, it would not be for me, and it is probably not very useful for biotech. But for a considerable amount of the economic activity in Australia, I would have thought it is there to be used. However, we do not have the cultural pick-up in the way that you would see it in some other countries. That is a harder question to answer. You are looking for something to solve. If you can solve that one, that is a good one.

Ms Berman—You asked an earlier question, Chair, about some of the impediments to commercialisation as we perceive them. We talked about the importance of linkages, partnerships and collaboration—and skills has been mentioned. Probably the other area that would be appropriate to mention is access to growth capital. We are constantly being told, 'We have to go overseas to get that capital,' and then we lose that company to Australia. So having access to very early stage capital so that firms can grow in Australia and be competitive is something that we are being constantly advised is a cause of concern to growing and highly competitive, high-risk firms.

Mr HAYES—When you are referring to growth capital, are you talking about there being less likelihood of picking up at-risk investment into technology?

Ms Berman—Am I talking about that?

Mr HAYES—Yes—risk capital rather.

Ms Berman—Let us take the firms that are assisted by AusIndustry. They get quite a large support system, from 50 per cent of their funding. They identify a new technology and are ready to take it to market, but at that point they need more funding, and we do not provide that latter stage in the Commercial Ready program. They find it hard to access that additional money from angels or from early-stage venture capitalists in Australia, and yet they could be given a very good offer in the US which might encourage them to move away from Australia and offshore.

Mr HAYES—So does this come back to your earlier view about collaboration? Collaboration could be with the—

Ms Berman—It could be done through an intermediary, so that you might not have to move offshore.

Ms Kelly—However, I will just draw to the committee's attention that we did have the ABS release earlier today about the latest venture capital statistics, and they did show a significant improvement in early-stage funds. I do not have them in front of me, but I think they went from something over $200 million to over $400 million in the last period that they mentioned. What we are really looking at are the seed, early-stage and expansion stages of the venture capital cycle rather than that later stage, private equity. The ABS tends to put it all under one heading and call it venture capital, but what we are really interested in is the early stages up to expansion. And those are the figures I was quoting that the improvement was in.

Ms Berman—I have a copy of that.

Dr WASHER—So, to clarify that, you said there was a committee that looked at all this funding mechanism and they will report to the minister—Ian Macfarlane, I guess—and also to Treasury. Does that cover every aspect of this, the whole spectrum of that funding?

Ms Kelly—The committee did look at the whole spectrum, but their focus is on the early stage.

Dr WASHER—But there we still have, as you said, a major problem when going from that point where we have a product, an idea, a concept or a service to taking it to full commercialisation. Has that been looked at in that funding, because that seems a more secure funding line if we are going to invest in, say, superannuation funds? That would seem a more secure line of funding, when you have a product that you can see as a reality, to take it through to maybe eight or 10 years as a long-term investment, to get it to the reality stage. You would anticipate superannuation being more comfortable, and then it is a long-term investment anyway.

Ms Kelly—Sorry; I am not clear what the question is.

Dr WASHER—It seems that we have a funding problem also from the point of view that I have a widget and I now have to go and make money out of the widget by commercialising it and putting it into a national and international marketplace. We have the widget, and we prove it

works, so it gives a level of security, but the funding is short to get it across that spectrum of time, which may take anything from eight to 10 or 15 years, from there to the next point. That would seem an ideal place to encourage the superannuation funds to invest, because superannuation is a long-term investment and there is more certainty. Have we had a look at the possibility of getting money from the funds to at least cover that aspect, where we have a major deficit of investment in this country?

Ms Kelly—I do not think the funds make those decisions; the fund managers do. The super funds put money into a fund. They have been looking at the issue of follow-on funding, because I think that is the issue: people can get early-stage funding, but can they get the follow-on funding to take them through? Part of the reason for our venture capital programs has been to encourage skills development, capacity building in the industry, and we are finding that people who run a government subsidised venture capital fund do go on to raise other private equity funds which provide follow-on funding for the enterprises. So in that sense we are seeing, I think, some success out of those funds, because once they have the track record of managing a fund successfully for a period they then have a much better chance of attracting funds from people like superannuation funds. They are going on to raise funds which are mostly for a little bit further up the food chain, in that they are not the very early-stage but the follow-on investments.

Dr WASHER—There is this potential money—a big pot of gold there. Do AusIndustry get involved in advising these groups about the prospects of the validity of an investment? I know you cannot pick winners exactly but, if AusIndustry get involved in building a product to a certain level—whatever that product happens to be—they would have a pretty good idea whether that product is good and whether the business structure of that organisation is sustainable. Would they be able in some way to act as professional advisers to a manager who would not have the remotest idea about science technology or any of these things you are talking about but would perhaps need to put millions into these things and be responsible to the people who had invested?

Mr Peel—We talked earlier about the Innovation Investment Fund, which is a program that we administer that includes nine fund managers, who have at their disposal about $358 million to invest in small emerging companies—I think the annual turnover has got to be less than $4 million. They do not just invest; their role is also to provide advice on how to take the company or the product forward. So the government is actually funding initiatives to do just what you are talking about. The venture capital review that has been mentioned is, amongst other things, looking at the success of that initiative and whether the government should take it further or not. So we are actually doing that through our programs—not AusIndustry staff as such but the fund managers who are part of the Innovation Investment Fund program.

Dr WASHER—So, if I were a fella sitting on a billion-odd dollars worth of superannuation that I needed to invest somewhere in the marketplace, would they approach and talk to someone like me?

Mr Peel—The fund managers have the $358 million to invest and they will go out and talk to a whole range of companies or people with projects or initiatives and then make their own commercial judgments about whether they are worth investing in. If they decide to invest in those companies, then usually they will take a seat on the board of the company and be

intimately involved in guiding the company forward to make a profit in the future. After all, they have invested money, so they want to see it work.

CHAIR—If I make an application, how does the decision-making process work about whether I will get my money or not?

Mr Peel—It depends a little bit on what program you are talking about. A number of our programs come under the purview of the Industry Research and Development Board. The board is a range of people from the private sector, from business, and from academia. Their role is to oversee the administration of a range of our innovation programs. In doing that, they have a number of subsidiary committees who are experts in particular fields—biotechnology, IT et cetera. If we get an application for a grant, typically it is reviewed by the committees of the board and they will make a recommendation to us as to whether it is worth while funding or not.

CHAIR—Who is 'us'?

Mr Peel—AusIndustry.

CHAIR—Which bit?

Mr Peel—It is actually Judy—the innovation branch of AusIndustry.

CHAIR—So it is on recommendation—

Mr Peel—From the board.

CHAIR—What happens then?

Mr Peel—The board would recommend that you get a grant of $5 million, or whatever it might be, and we would have a look at their recommendation. If we were happy with it—which invariably we are, because they are experts in the field—we would check that the money was available and, if it was available, we would approve the grant. We would then write to the company and say, 'Congratulations. You have got this grant.'

CHAIR—So you do not second-guess the judgments of the—

Mr Peel—No. They are our expert advisers. We would not attempt to second-guess them. Very occasionally they ask us to get other expert advice because they might not be sure of a particular application. But, by and large, they review it, they make a recommendation to us and we invariably accept the recommendation.

Mr QUICK—More and more firms are going offshore and setting up manufacturing in places like China. They are part of the process. They realise that in order to survive they can go to Hubei province, or wherever, and set up a factory and, with the cheap labour, compete internationally. Are they still entitled to be part of the process if they are based offshore but are still an Australian company? Does that operate? Are there any studies being made about the companies that go offshore, establish themselves and survive but want to be involved in future innovation? Are they able to access AusIndustry programs or are they on their own?

Mr Peel—I will start off answering and other people might wish to add something. One of the criteria for getting a grant through the Industry Research and Development Board is that you have to demonstrate a level of national benefit in your application. You have to show what benefit it would be to Australia. So if you are a company offshore you would not normally be eligible unless you were registered in Australia. Then you have to demonstrate to us what benefit it would be to Australia. It sometimes happens that we give a grant to people and they are successful and then they want to have a change of control—set up an overseas parent, because that is better for their business. If they want to do that, they have to come back to us and get approval to do that, and the board will measure up whether that is still of national benefit to the country. Of course, it can often be the case that, if a company is successful and sets up overseas operations, that does generate significant benefits back to Australia, even if the manufacturing is done overseas. So they very much look at that on a case-by-case basis. I think it is five years after completing their grant project that companies have to come back to us or back to the board for an approval for a change of control of the sort that you were talking about.

CHAIR—After you have made a judgment and given the money, how do you assess whether or not the level of national benefit that was an intrinsic part of the reason for that judgment actually eventuated?

Ms Zielke—We continue to monitor the projects throughout their life. For example, under Commercial Ready, grants can go for a maximum of 3½ years, so companies need to report during that project period on how they are going—not only on how the project is progressing but on how they are progressing against those benefits that they stated in their application form they thought they would achieve.

CHAIR—How do you report that, say, five projects are good—even better than good—and three projects are dreadful?

Ms Zielke—Obviously there are issues, such as technical failure during research and development projects; that is one.

CHAIR—How do you report?

Ms Zielke—We have regular reports to the board and I suppose our evaluations also get fed back through the policy process and influence then what we do in the future in relation to our programs.

Mr Peel—The board also publishes an annual report, which is tabled in the parliament and which would contain some of that information.

Ms Kelly—Most of our programs would be evaluated every three to five years and those evaluations are routinely made available through our web site.

CHAIR—They are tabled?

Ms Kelly—They are put on our web site normally. That is our normal way of publishing them.

Mr Pennifold—One of the important things in the evaluations is that we try to look at not only those companies that were in the program but also those companies that were outside the program, so that we can look at the counterfactual.

CHAIR—So what is the overall conclusion from a protracted period of comparative assessment?

Mr Pennifold—That is what we try to judge. It is program specific. So, for example, in this case the Productivity Commission did a review of what used to be the pharmaceuticals industry investment program and said that the R&D component provided a very strong net economic benefit to Australia. They were not as convinced on the manufacturing component. That then led on to the design of the current program we have got, which is focused purely on the R&D side of the industry. So that is the sort of thing that happens.

CHAIR—I thought you said that you compared the people or the companies who got the grant with applicants that proceeded without your assistance.

Mr Pennifold—Correct. So in making that judgment the Productivity Commission was the consultant in this case, but this is typical of other program reviews and it had both companies within the program and companies on the outside of the program that did not participate. That was the basis of looking at their performance and how they formed those judgments.

Dr WASHER—I would like to ask Dr Heath to give an example about international patents, as I guess Americans will call it. Say, for example, in the States they patent a component of a genome but it does not suit Australia to accept that as a patent. What is the mechanism of debate? Would we go to the WTO to discuss this issue? As you know, part of the genome has been patented in America. Would we automatically have to accept that patent? What is the rule about them transferring across a continent to another continent a patent?

Dr Heath—There is no such thing as an international patent, despite frequent and common references to that in the literature and the newspapers. Under current arrangements, every nation still sets their own individual rules. There are international agreements which try to spell out how these things should be done commonly. In relation to genomic inventions, you can apply for such an invention in the US and you can apply for such an invention in Australia. The test that we would apply would be that it has to meet the test in our legislation, under our rules, and it is theoretically possible that a patent granted in the US would not be granted here. In many areas of technology that would be uncommon, but in some areas of technology there would be instances where we would not grant a patent—and vice versa. For example, we grant patents in relation to methods of medical treatment. In the US you cannot get a patent for a method of medical treatment.

Broadly put, I would expect patents for genomic inventions to be granted in both jurisdictions. But we would do the assessment, we would look at the prior art, we would apply our view of what needs to be tested and come up with our own independent answer.

The area of issue for most genomic inventions is the degree to which the invention has to show utility. In both jurisdictions, but not in exactly the same time frame, we have been trying to tighten up on that criteria. So it is possible that something might get through one jurisdiction and

not the other, because we tend to leapfrog a little bit with each other about trying to get that test right. But, broadly put, we would apply pretty similar tests to the US in relation to genomic inventions.

Dr WASHER—Just to follow that, I would imagine that if we did not have similarity, and then I developed a product, say from an American patent that was not accepted here, and then I tried to export to America, I would have major problems.

Dr Heath—That is right. Standardly, if there is no patent in force in this country and somebody either directly copies it, because a patent is a public thing, or independently invents it in Australia and seeks a patent in Australia for that invention, if it is already patented somewhere else they probably would not get it here, because it would be public knowledge. You certainly cannot take something that you can do here lawfully into another jurisdiction if there is a patent in force against it. But you can do that thing here legally if there is no patent in force here. You could copy a patent—you would not get a patent for it here—but you could not try to take that technology back to where it is patented.

Mr JENKINS—When we harmonise regimes, do we do it in toto or by groupings?

Dr Heath—With the harmonisation agendas that are going, we are still at a fairly high level in trying to broadly get the rules to be the same. In certain technical areas, the issue of harmonisation in relation to the technology is not a question, but in leading edge technologies it often is. In genomic areas, biotech, life forms, business methods—those sorts of areas—the patent system is newly touching, in our terms, in the last decade or so. So you will see some differences. But in mechanical inventions, the tests are pretty standardised. They have been doing that for 100 years and they are pretty similar place by place.

We still have issues about harmonisation because we still have independent legal systems overseeing the same rule. The courts can take a rule, even one written in the same language, and interpret it differently inside a different jurisdiction. So that area of harmonisation is broadly the same, but at a micro level there are a lot of differences.

Mr JENKINS—Did the plant breeders' rights stuff give us leads on the genomic stuff?

Dr Heath—In what sense?

Mr JENKINS—In that with a variation on a living plant the protection was given to the uniqueness of the artificial manipulation of the breed.

Dr Heath—Plant breeders' rights are available for—I forget the exact words of the test—essentially stable varieties. They can be bred with traditional farming techniques or these days they can be genomic inventions on a plant. In Australia you can apply for a patent for the genomic version of a plant variety but you cannot apply for a patent for the farm bred crossing because you are just crossing plants; you are not doing anything in an inventive sense there.

Mr JENKINS—You are just cutting out a few generations.

Dr Heath—That is what the genomic inventions are doing, and that is why they get patents and the traditional way of cross-breeding plants does not.

CHAIR—In terms of the scorecard indicators, over time have we gone backwards on any of them?

Ms Berman—We have been doing that since about 2001, and I think I am correct in saying that there has not been a backwards turn. I know that, for example, BERD has improved over that time. The alliances partnering has improved, and I believe the VC has, but I would have to go back and check that.

CHAIR—We will have a look. If you could provide some advice about understanding the limitations of the indicators, if there is something written that is readily accessible, that would be good. Thank you. Does anybody, having heard the conversation, want to add anything that we may be at risk of distorting or misunderstanding or something that you want to input that you have not had an opportunity to?

Mr Peel—No, thank you.

CHAIR—We are very happy if you are happy. Thank you very much. That was useful. You will get some follow-up questions, but that gave us a sense of where we are going.

Resolved (on motion by **Mr Quick**):

That this committee authorises publication, including publication on the parliamentary database, of the transcript of the evidence given before it at public hearing this day.

Committee adjourned at 6.13 pm