



Northern Ireland
Assembly

**Committee for Enterprise, Trade and
Investment**

**OFFICIAL REPORT
(Hansard)**

**Inquiry into Developing the Northern Ireland Economy
through Innovation, Research and Development:
Northern Ireland Science Park**

15 March 2012

NORTHERN IRELAND ASSEMBLY

Committee for Enterprise, Trade and Investment

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Members present for all or part of the proceedings:

Mr Alban Maginness (Chairperson)

Mr Daithí McKay (Deputy Chairperson)

Mr Gordon Dunne

Mr Phil Flanagan

Mr Paul Frew

Ms Jennifer McCann

Mr Stephen Moutray

Witnesses:

Dr Norman Apsley Northern Ireland Science Park

Mr Frank Hewitt Northern Ireland Science Park

Dr Alan Watts Northern Ireland Science Park

The Chairperson: Briefing the Committee today are Dr Norman Apsley, chief executive officer, and Mr Frank Hewitt, chairperson, of the Northern Ireland Science Park and Dr Alan Watts, director of Halo Business Angel Network (HBAN).

First, you are very welcome to our Committee today. I just want to formally thank you for the use of your premises. I think that it is very appropriate that we meet here in the Science Park. This is part of our inquiry into research and development. It is very appropriate that we are here. Thank you for your very detailed written response to the inquiry. We look forward to hearing what you have to say. There will be questions after you make an opening presentation. I hand over to you, Mr Hewitt.

Mr Frank Hewitt (Northern Ireland Science Park): Chairman, thank you very much. I extend to you a very warm welcome to the Northern Ireland Science Park (NISP). I know that some members have visited us in the past. Those of you who are coming here for the first time are very welcome indeed. We are absolutely delighted that you have chosen to have your meeting here for a number of reasons. One of those is that we believe that the Northern Ireland Science Park has played, and will continue to play, a very important role in the development of an enterprise- and innovation-based economy in Northern Ireland. It is also very timely that you should visit us now, because this is a very important stage in the development of the Northern Ireland Science Park; we may touch on that later in our presentation.

The Northern Ireland Science Park was established in 1999 as a not-for-profit foundation by the then Department of Economic Development, which is now the Department of Enterprise, Trade and Investment. Our mission is for the Northern Ireland Science Park to become a networked, self-supporting, internationally recognised science park that is a commercially and research-driven centre for knowledge-based industries, serving all of Northern Ireland.

We started work for real on the site in mid-2002 on what was a near-derelict 25-acre site at the north end of Queen's Island. When you take a tour of our campus later today, you will see five large Science Park buildings. The UK's pre-eminent centre for secure IT is the Institute of Electronics, Communications and Information Technology (ECIT) building. You will also see the historic Pump House, which was brought back from virtual dereliction and is now off the buildings at risk register. We are delighted to be able to say that all our buildings are completely let. That includes the new 50,000 square feet Concourse II building that you will see on your tour this afternoon.

By the end of this year, approximately 2,000 people will be employed on this site. The vast majority of those will have first degrees, and a large minority will have master's degrees and PhDs. I am also delighted to say that they will receive salaries appropriate to the qualifications that they hold. There are approximately 110 companies on the site. The livings from transactions outside Northern Ireland benefit the Northern Ireland economy to the extent of approximately £80 million a year. In other words, every year, £80 million goes into the local economy from wages and salaries paid to the employees of the companies that are located on the site.

We estimate that we will attract around 50,000 paying visitors to the campus as part of their interest in the Titanic enterprise. Among those visitors, and to my mind one of the most important groups, will be over 100 school outings. They are children who we invite to come to the Northern Ireland Science Park, not only to enjoy the heritage of engineering and science that exists in Northern Ireland but to see what the future might hold for the Northern Ireland economy and for them. To keep everyone involved, we created, with Facebook's help and sponsorship, a social network. It is for the generation of innovation for the most likely to succeed young people and to keep them informed about and inspired by the role models who work here and the case studies of the companies that have grown and developed on the site. Our hope is that those young people, as they grow and gain experience and knowledge, may either return to Northern Ireland or remain here and add to the gross value added (GVA) of the economy.

Returning to the matter of the day, economic commentators recognise four key elements in a vibrant knowledge economy, ripe with the commercialisation of research, which is the object, I understand, of your current study. First is the creation of knowledge itself; the second prerequisite is risk capital; the third prerequisite is the involvement of and exposure to a range of business support activities, for example the activities of lawyers, accountants, bankers, etc; and the fourth is the provision of a particular kind of property offering. We believe that all of those elements are available in the Northern Ireland Science Park today.

I will deal first with the creation of knowledge itself. Northern Ireland researchers, particularly in areas such as IT security, are well respected internationally, but we still fail to earn our just rewards from national and supranational funds. We need to engage more at earlier stages to help set agendas and benefit financially from both national and EU funding. The second prerequisite is, as I have said, risk capital. We have some good beginnings to tell you about, such as our Halo project, and Dr Watts will talk to you about that in a second. However, we have to recognise that we are still far behind areas such as Scotland and the Republic of Ireland. The Republic of Ireland, in particular, has a large and growing risk capital fund, which, at the moment, approaches something in the order of €750 million. Those two elements alone are not going to generate what we wish to see as a knowledge-based economy. Sufficiency in this area also comes from the inclusion in the mix of the business professionals: executives, lawyers, accountants, bankers, etc, and people known and respected across those disparate boundaries who are prepared to act as trusted emissaries and go-betweens. In other words, we need to engage the wider business community here in helping to encourage entrepreneurialism and knowledge development. That latter element is a key role in the range of facilities offered by the Northern Ireland Science Park. The final element is the provision of accommodation. As you will see, we have bespoke buildings, which offer a very high degree of flexibility and, thereby, make the location attractive for a wide range of science-based activities.

NISP CONNECT is the organisation that we founded on the San Diego model, which, as you probably know, was studied and recommended by such as Michael Porter in his study of that city's rise from Cold War bust to 21st century knowledge boom. For those who do not know the San Diego area, it became a strongly vibrant area in the 1970s and 1980s, based mainly on the US defence industry. As that industry contracted, jobs were lost, industries disappeared and San Diego, effectively, had to reinvent itself. The model that they adopted in San Diego is very largely the one that we are currently emulating in the Northern Ireland Science Park.

We feel that we found a particular edge in developing CONNECT in the identification and recruitment of Steve Orr, who happens to be a Northern Ireland entrepreneur who went to the United States, was very successful and then returned to Northern Ireland to bring his own knowledge and experience to benefit young people in Northern Ireland who wished to set up and develop their own businesses. It is not a case of Steve giving academic advice as to how they might do it, Steve is in a position to tell developing entrepreneurs how they can do it. To help him in that task, he has enlisted something in the order of 1,000 experienced business people in Northern Ireland who are prepared to provide help, support, advice and expertise on a pro bono basis to help those young, developing companies take their place in the world economy.

In everything that we do, the focus is on the entrepreneurial scientist and technologist and helping them to take their ideas to market, whether as the founder of a new business or as part of a global corporation. We believe that if we are to exploit our research to advantage in our own economy, both routes are essential. Indeed, it has been our experience that one very often mutates into the other.

To sum up, we believe that, through the Northern Ireland Science Park, we have created what we like to call an innovation ecosystem and an atmosphere where young companies can come along, grow, develop and build their expertise at very little cost to themselves. We will go into that in some greater detail. We also provide what we like to call a soft landing for international science-based companies that wish to look at Northern Ireland as a possible investment location. We offer them the opportunity to land in the Northern Ireland Science Park and to explore and develop their links with the local Northern Ireland economy, and, if they wish, they can then relocate to bigger premises elsewhere. Our experience has been that, once they come here, they rather like to stay, and we have found that science-based companies, in particular, like the atmosphere here and like the fact that there is an environment and a network in which they can interact with other science-based companies and young, talented people.

I have been chair of the Northern Ireland Science Park for just over four years. It is, without question, one of the most exciting things that I have done in my entire career. To come to this part of Belfast and see the development of young, dynamic companies is not only encouraging but is a great indication of what Northern Ireland can become.

The Chairperson: Thank you very much, Mr Hewitt. Your colleagues are very welcome to contribute to this discussion. I have been here before, and it is a very exciting place to visit. It is striking that, 10 years ago, this area was derelict, but the site has now not only been built on but has attracted high-quality scientific research and development. That is the really exciting part. It continues to prosper and expand, and, therefore, as I said previously, it is appropriate for us to come here and learn from you. I will ask a question first, and my colleagues will come in in due course. Could you expand a little bit on the CONNECT programme and on the Halo Business Angel Network?

Dr Norman Apsley (Northern Ireland Science Park): I will do CONNECT and Alan will do Halo. I apologise on behalf of Steve Orr; he would have been here but he is otherwise engaged in Derry. The essence of CONNECT is that it understands implicitly that the researchers with whom you are dealing are bright and often at the top of their game in their area. For example, ECIT, across the road, will have some of the top engineers in Europe in that environment, and they can earn a decent salary just by doing more research. If the research here stops, they can go anywhere in the world. They can get Green Cards, and they can get invitations to visit China. They can get whatever they need. CONNECT starts from the premise that those are people who do not need a leg up but who need encouragement and, almost, seduction into the world of business. As I said as we started, they often do not know the world of business, even to the extent of not knowing the name of their own banker or their own lawyer

— usually, they do not have one — and, if you are going to do business, you need to meet those people.

The word "CONNECT" was picked by Mary Walshok, the founder, whom some of you have met, deliberately to bridge those silos. It also recognised that everyone in their own silo was busy. A silo does not form because you want it to be there but because you want to be efficient in what you do. Therefore, you have to find ways of making people want to cross silos, and that is what we have a series of engagements on. From memory, we have about six styles of engagement in which various people come together with the research base. They are doing such things as selecting the winners of a £25K award, but, actually, what they are doing is learning to trust each other and respect each other, so that, when they need capital and business support, people know who are good, who are not good and who needs it. That is the key to CONNECT.

The engagements are carefully worked out, sometimes not even knowingly, if you like, by us. We follow Mary's position, but we have tuned them to our environment. For example, we can fill this room in particular 20 times a year with workshops, which we call Frameworks. There is not a soul in here other than new entrepreneurs. We do not let anyone else in, so they can feel free to ask silly questions. They are not briefed by me or Steve or Alan or any paid official on such things as intellectual property or the founding of a board; they are briefed by proper lawyers and accountants, and they meet up to four people who have done it before. That is the kind of room that we can provide, and it does not cost us anything. The room is paid for by the sponsors and so on. That is the nature of CONNECT.

The Chairperson: If you have an idea and want to develop it, CONNECT is the way to go, and you will be given the basic assistance that you need to enter the marketplace and become more commercial in your approach?

Dr Apsley: Yes, except that it is tough love. You will also be stopped very quickly if it does not work.

The Chairperson: If it does not work, it does not work.

Dr Apsley: That saves you time, and it saves us time. The two things go together, and, fundamentally, you are absolutely right.

The Chairperson: How many do not work?

Dr Apsley: We do not really keep count. We deliberately do not keep a memory, if you like, so that people come back again. We believe in the Californian model that trying is the best thing and failing is not a bad thing. Failing through fraud or through lying is a bad thing. That will go around our community like wildfire, and those people will never reappear. However, there is no shame in trying and failing.

If you have time, I can give you one example that I like and in which I was personally involved. A couple of physicists from Queen's University thought that they had a business idea. We held a meeting of our Springboard type and introduced them to experts in the field that they had chosen to try to get into, and they discovered that their idea would not work because they had not realised that, sitting across here in Channel Commercial Park, is a Japanese company that is expert in what they had thought they would be expert in. The experts that they were introduced to also told them what the real problem was, and they were able to go back to the university and bid for research money to try to solve the real problem, which, in this case, was ground-source heat pumps for houses. The company asked whether there was any way of telling whether it would work before drilling the hole, which was the biggest problem. They are still thinking about it. That is the kind of thing that we do, and that was a good failure.

The Chairperson: Thank you very much, Dr Apsley.

Dr Alan Watts (Northern Ireland Science Park): First, I will add to what Norman said about the CONNECT programme, because I was involved in mentoring companies through the programme before I came onto the staff of the Science Park. I will give you a slightly alternative way of looking at it. Let us face it, Northern Ireland has a very long history. It is 100 years since the Titanic, and, in its day, Northern

Ireland had state-of-the-art ideas, and I do not need to tell you the long litany of good ideas. However, when people have come up with great ideas, we have been very bad, historically, at translating those into commercial success. The ideas tend to come from very bright people who are not necessarily the most commercial. As the name implies, CONNECT connects them with people who have experience. There is no money involved, but they work with them and introduce them to other people.

As Norman said, part of it is about killing ideas quickly or not. Assuming that it is a good idea, it is, then, a question of telling them what they do not already know. They do not know that they do not know it, because they do not understand how to build a business or a board — all of the commercial stuff. Therefore, in my mind, CONNECT is the vital missing link, which, if we are honest, we have largely been missing for a very long time in this Province. It is taking good ideas, of which we have plenty, and converting them into commercial success. That early link to get them to point where an organisation like mine could put money into them — where they are investor-ready, to use the jargon — is missing. I really think that that is what CONNECT is about. I hope that that is helpful.

The Chairperson: It is very helpful indeed.

What about the Halo Business Angel Network? What does that do?

Dr Watts: The first thing that everybody says is that it is a 'Dragons' Den' for Northern Ireland. That programme is helpful in the sense that it raises people's awareness of what angel investing is about. I have to tell you that real life is nothing like the programme. It is actually a nice experience, not an entertainment process. It is a group of well over 100, mostly Northern Ireland-experienced, business people who have some money. Although they are interested in making money, they are more interested in putting something back. We take a number of companies every year, prepare them, put them in front of that audience and offer the business people the chance to get involved. Effectively, we are a dating agency. We get them together. If they like each other, ultimately, the business people will invest. Often, the companies are start-up companies, but not necessarily.

I will give you some figures. Since we started the network in 2009, our angels have invested well over £3 million of their own private money in local companies. No public money is involved at all. I hope that, by the end of our third year, I will be able to say that they have invested £4 million in three years.

On the face of it, it is a success story. In our second year of operation, the British Business Angels' Association voted us the top angel network in the UK. Therefore, we are doing some things right. On the other hand, when you look at it and benchmark it against other areas, you see that Scotland is actually one of the leading areas in the world for angel investing. Most people think that it is America. They are correct in thinking that America is one of the leaders. However, oddly enough, Scotland is doing a lot better than, say, England. In Scotland, angel investors invest over four times more per head of population than they do in England. Of course, England includes London, so that is quite surprising.

They have been at it for 20 years; we have been at it for a few years. There are a lot of structural issues, such as improving the angels and training them. There are a lot of things that we need to do. We believe that, given time, we can increase the amount of angel investing by an order of magnitude. Fundamentally, it is, largely, local, high-net-worth people who are putting their money into companies in Northern Ireland. The companies should share one characteristic, which is high growth potential.

I also want to add two points of detail. We are unique among UK angel networks in that we make use of an online private video site, which means that any angels who are unable to get to a meeting will watch online. By the way, normally, around 50 come along. Therefore, it is very unlike the TV programme, in which there are five people. You pitch to 50 people. Another 20 watch online. Think of your odds. Around seven companies pitch to around 70 people. You can see that the dynamics of the odds have changed compared with those of the TV programme. It also means that we have angels who are based, for example, in England. I do not mean ex-pats; I mean that there are people there who believe that the deal flow in Northern Ireland is good enough that they pay to join Halo and watch via the video site. They do invest. Again, it is, perhaps, not what you would think.

I will mention something that I know is close to your hearts. You will all have seen 'The Shore' receive its Oscar recently. You may not be aware that funding for that came through Halo. The film-makers pitched here. Because they were unable to do it at a meeting due to timing, they put up a pitch on the private video site. I sent an email to all of the angels, which was headed, rather cheekily, "Your chance to be at the Oscars". The rest, as they say, is history.

The Chairperson: Very good. It is a great success. I have a couple of other questions. We have been looking at access to European funding for research and development. Of course, we have come across the situation in which many companies in Northern Ireland will not apply for funding simply because the process is so difficult, particularly for framework programme 7. I know that the European Commission is aware of that and will try to remedy it and make it more accessible and user-friendly with Horizon 2020. However, your submission pointed out other European funding. You talked about the Eurostars programme, and we discussed that a few months ago in Brussels. What is your experience of European funding?

Dr Apsley: My personal experience is slightly outdated. I led a framework 2 programme, which tells you how long ago it was. My general point about Eurostars in particular is that we do not take advantage. Building confidence with Europe is just like we talked about in CONNECT with our own silos. The people have to be known. I call it building the esteem of our researchers, their research and the outputs of what they do. That is what you do through Eurostars and other programmes. You have to start early to get your people known, because they will then be invited onto committees.

A number from the public sector have that reputation and esteem but are not eligible because they are public sector. So, we have wasted some of that. However, there is only one way to start building it, and that is to do everything we can to get people onto the appropriate registers. I am also a great believer in learned societies. If you are able to be in a learned society, you ought to be there and take part in it. That is a philosophy we operate in the Science Park. So, it is a case of getting your personal esteem up and to bring up the esteem of the nation, and that will have its reward.

There are more ordinary bread-and-butter things. I happen to be aware from yesterday's MATRIX meeting that the Government intends to fund professional go-betweens who will help to interpret some of the Europeanese in those documents, and that is very welcome. That will undoubtedly help us to make a better fist of it than we do at the moment.

The Chairperson: Your submission states that one big problem in Northern Ireland is the lack of venture capital. It goes on to say that that is reflected in the 2011 'Knowledge economy index baseline report 2011'. The report is very interesting and made comparisons with the San Diego model. Will you expand on that statement about the lack of venture capital?

Dr Apsley: With your permission, Alan is our expert.

Dr Watts: Just so that we are speaking in the same language, people talk about venture capital and get a little bit confused between seed capital and capital given by venture capital companies. For simplicity, we tend to say venture capital. However, the two are separate and distinct because you will appreciate that a company at the very early, risky stages is when it needs seed capital. It is generally acknowledged that whenever there are seed funds, and there are seed funds all around Britain and the world, the best they will ever do is return about 85% of their money. In other words, it is a loss-making proposition but there are good reasons for doing it.

Venture capital is generally done by the venture capital industry — some of the big names you will have read about — and that is where the business has developed. It has probably got revenue and the venture capital comes in to grow the business. So, you are in business and, with that extra money, instead of growing 10 times in five years, you grow 10 times in two years. So, I make a distinction between the two.

We have one seed fund in Northern Ireland. It is government money and is administered by an organisation called E-Synergy. In broad terms, it has £5 million to invest in five years. There are also two £1 million funds for investing in universities, and there is some proof of concept funding, which is

very early stage funding. One could argue about the figures, but you may say that there is less than £10 million, and that is fair. If you compare that with Southern Ireland, they were very clever at the time of rescuing their banks, and one of the conditions for the banks was that they put money into seed funds. There has been €124 million of seed funding from the banks and about the same again from the South's innovation fund. Therefore, there is an order of magnitude difference in seed funding between Northern Ireland and the South. The level of angel investing is in and around those levels, but it tends to come alongside seed funding. The amount of angel money that is available in Northern Ireland and in Southern Ireland is roughly what you would expect from the different populations. There is not a big difference in that area, but there are some improvements that we can make.

However, we have a problem with the venture capital (VC) industry here. Northern Ireland is sub-scale and too small, and there are currently no Northern Ireland venture capital companies that can invest in new ventures. One company has taken on a welcome £7 million fund from Invest Northern Ireland to co-invest with angels, and that fund will be used to bulk up angel money. It is based on the Scottish model; it is a good thing, and I very much approve of it. However, in effect, it has taken that company out of the VC market. One company, Crescent Capital, has won a tender and is producing a £30 million fund of which £10 million has been subvented from government. It sort of takes second place in the pecking order, and, common to other VC companies, it is struggling to raise the remaining £20 million of that fund. For the past two years, there have been no VC funds locally. The good news is that some Dublin funds and one or two London-based funds have come across and invested in what they believe to be exceptional ventures. Those investments have proven to be very good for them, but you will appreciate that the number of those investments is very small.

Therefore, we have too little seed funding on an order of magnitude and almost no VC money. Any comparison that you care to make with other regions shows that we have a serious problem. The innovation report shows that if we do not fix that problem, it will be the number one constraint to growing the types of company in the knowledge economy that we talked about.

Mr Hewitt: I want to give a supplementary answer to your question about the interaction with the EU and the complexity of applying for grants. One of our strategic ambitions is to develop other science parks at remote locations. That ambition includes the development of a science park on the Fort George site in Derry/Londonderry. In order to take that project forward, we have submitted an application through the Special EU Programmes Body (SEUPB) to the EU for approximately £14 million in funding. We recognise the fact that all Departments, whether national, regional or Europe-wide, have a responsibility to appraise projects carefully. However, it is probably true to say that the speed at which the appraisal of that project has proceeded has been disappointing. We are not a large organisation, but we have access to considerable expertise. We have had to draw on that expertise to pursue the application, and small organisations that do not have that access would find it difficult and daunting to make such applications. I would welcome any moves by the Committee or the Assembly to make the process of applying for European funding a simpler and more user-friendly process. It tends to be reiterative and people find themselves answering the same questions in slightly different formats.

Where our ambition for Derry is concerned, our proposal is predicated on being able to get up and get into business within a certain timescale. We have not always been convinced that the SEUPB and other bodies are totally aware of the timescale within which we have to operate. That is not a criticism in any way. It is an observation of the process that I think they have to go through. Anything that can streamline the process would be beneficial not only to us — that would be a very selfish observation — but to other organisations in Northern Ireland that are seeking funding. The funding bodies have to realise that business opportunities present themselves in certain timescales and that if people cannot respond to those timescales, the opportunity will very often slip away.

The Chairperson: Thank you very much, Mr Hewitt. That reflects what a number of organisations said in evidence to the Committee. I am grateful to you for reiterating that.

Dr Watts, what can be done to improve the situation on venture capital? Is it just something that the market develops?

Dr Watts: Quite a lot can be done. The Science Park is already doing something, in that we run a VC forum. Through the forum, we deliberately reach out to venture capital companies in Dublin and

London, get to know them and build up a relationship. Once a year, we invite them over here to see, on the back of a major event, about six of our best companies. So we are bringing them over to shoot fish in a barrel — that is the expression that we use. The companies are already lined up, so it is made really easy for them. They see the best, and generally they are very impressed. To be honest, when they came across at the beginning, they said, "We felt that we ought to come over, but we did not really think that we would see very much", and then they were blown away with the quality. It is about building relationships, because those companies have not yet invested. That is one thing that can be done.

A new €30 million life sciences fund was announced in Southern Ireland today. The Government there have taken some more money of the type to which I referred, set it to one side and made it available in a creative deal with a San Francisco VC. That VC will then move to Ireland, set up an office and invest some of its money, along with some of that semi-government money. So the Government have been very proactive. They have also used the Irish–American angle, and rightly so. So a number of things can be done.

Geographically, we will never be strong enough on our own to have very large native venture capital companies. However, we could have offices here for some of the best ones and make very good use of the fact that Dublin is only an hour away. A lot of companies are looking to set up in Dublin, but they could set up here and effectively cover both.

Let me explain why there is a problem in the South as well. The South has a massive amount of seed money. However, all the companies running along this road are heading towards a cliff because, although there is a lot more VC money down there than there is here, there is not nearly enough. It is a runway, and people will be heading towards a cliff unless they get the next piece in place. It is like a series of elevators. However, as I say, quite a lot of things can be done.

Dr Apsley: I want to add to the point about the venture forum. I think that the venture forum is, by a long shot, the best joint venture that we have with the universities. The shopping list is determined by Alan and Steve, along with a key individual from each university. They go off to firms in Dublin, London and, hopefully in the future when we have a little more travel money, New York, where they beard the dragon in his den and find out what they want. They then come back and report to the private secretary here, who helps us to determine which fish will go into the barrel. It is done entirely with private secretary input, which is crucial. As Alan says, venture money comes from firms, which have boards and dealmakers. So it has to be made very efficient for them. The very first thing that I learned when we started thinking about a science park is that dealmakers do not get out of bed for anything other than a large sum of money. It has to be made as efficient as possible for them to do that, which is what we do.

The second issue that I want to mention, which is nearly as good as venture money, is early customer. The other form of money, which I do not think that we use enough but which I know we have new plans to try, is called the small business research initiative (SBRI). It was not invented by me. It is about neither small business nor research, so it is the worst-named initiative in the world, and people usually just refer to it by its initials. It was invented by the Americans. As you may know, it was born because, under the general agreement on trade and tariffs (GATT), Governments are not allowed to be the giver of the only contract that sustains a firm. That would be illegal under state aid rules. However, one exception was made for early products or first customers. The Americans pioneered it, and Europe followed. We are quite laggardly in our use of it. It would allow government to procure something for use as real procurement but in a way that was very early, so you could share and measure the benefits of using it before you went into a real procurement. The kind of thing that could have been done, and which we have done here but in a different way, was the Wrightbus, which was flying up and down the road there accessing our antennas for radio and then measuring that to show that you could do a video stream of the bus. In my opinion, that could have been procured and working for a year under SBRI and then made available in that way to Las Vegas and wherever else it was being sold. We could develop SBRI. I know that, in recent times, DETI has an aspiration to grow £50 million with SBRI, and I think that there are ways of pushing that forward.

Mr McKay: Obviously, much of the success and potential success is based on connectivity and networking. In a previous life as a member of the Committee for Finance and Personnel, we looked at

the issue of academia, business and government and how they interrelate. At that time, some of the witnesses — I think that it was Victor Hewitt and John Simpson — flagged up a concern about departmental officials and civil servants and the culture here in the North, in comparison with London and Dublin. For example, you would have had seminars with academics from Queen's University and the equivalent, and there would always have been departmental officials there with a listening ear. However, that does not seem to happen here. Is that a concern, or do we need to address the cultural issue as regards government and the silos that Departments have formed into over the years ?

Mr Hewitt: I will answer that from a strategic point of view, and I will ask Norman to answer from an operational point of view. There are a couple of dimensions. First, the two universities have been involved in the project virtually from the start. They are, effectively, stakeholders in the Northern Ireland Science Park Foundation, which is our top company, as it were. The two vice chancellors sit on the board of the foundation, and university representatives sit on some of the subsidiary companies, because we have a property company, holding companies, and so on.

As chairman of the foundation, the input from my university colleagues is exemplary. They are hugely supportive of what we do. As well as giving us vocal support, they are huge contributors to the strategic development of the park and have remained so. I want to record the fact that I value the input from the universities very highly.

If I may, I want to touch on the relationships with Departments and officials. It is largely due to the foresight of the Department of Enterprise, Trade and Investment that we have the Science Park here, and it was something of an entrepreneurial decision in itself by the civil servants of the day to invest such a significant amount of money in the park at the start. Since then, the relationship with the Department of Enterprise, Trade and Investment has largely been light touch. Obviously, the Department cannot walk away totally, because, had it not been for its £23 million, we would not be here. Therefore, it has a responsibility to ensure that we continue to operate effectively and professionally. However, it is probably true to say that it has decided on a light-touch relationship, and I assume that is because it believes that, effectively, we are doing what it originally wanted us to do. We get almost no interference from the Department on the day-to-day operations. That said, officials are always on the other end of the phone if we need advice or support. I certainly get that advice and support from both the permanent secretary and Minister Foster, so it is important to record that at this stage.

From a strategic point of view, we have an increasingly productive relationship with Invest NI, which has realised over the past three to four years that the Northern Ireland Science Park is a highly valuable component part of the Northern Ireland offering. If you were to speak to our property director, for example, he would say that a large number of the visits to the park have been stimulated by Invest NI. It has been hugely supportive of our proposal to develop on the Fort George site in the north-west. So, I think that the relationship is pretty near the balance that we would like to strike.

I hesitate to say this as a former civil servant, but I would not want too much departmental interference in the way in which the Northern Ireland Science Park operates. Although we are a not-for-profit organisation, we are a commercially minded and commercially driven organisation. So, we are a not-for-profit organisation, but we are also a not-for-loss organisation, and I find that the relationship that we have at the moment is at just about the right balance. I could not honestly say that I get any difficult or challenging interference from Departments in what we do, and, when we ask for help and support, someone is normally prepared to talk to us.

Dr Apsley: I could maybe offer a different cut on your question. All that Frank says is absolutely true, but I wonder whether your question is asking whether government uses the experts that it has in its universities. I certainly do not think that that is the case. I think that there is a great fear that the universities are partisan. We need to work around that, because the US beats us hands down as any government Department can go to any university on any topic and know that it will pay for a report and get the unsullied truth. We have an expectation that consultants will somehow do that, but I have to admit that I am sceptical about that. I would rather depend on a good university department that publishes its work and exposes it to the scrutiny of its peers to give us the truth in particular areas. So, if that is what you meant by your question, I do not think that there is nearly enough of that.

However, having said that, there are a number of fora where the two or three silos that you are talking about come together. The Science Park is one, as Frank said, and MATRIX is another where all three are there all the time. At a lecture that John McKay and I gave at Queen's a week or two ago, the introduction was made by David Sterling. The chief executive club at Queen's has a good number of civil servant chief executives, as well as business ones. So, there are fora where they all meet, but that does not extend far enough into the operational day-to-day level, which it could do to great value.

Mr McKay: In the response, you raised some issues about businesses, particularly SMEs, which I am concerned about. They need mentoring, role play workshops, ice breaking, programmed engagements, and so on. Certainly, part of the problem with SMEs is cultural, and there is a fear factor and a lack of mentoring. Who will do what you flagged up as needing to be done? Should it be government or InterTradeIreland? Who will tackle that piece of work?

Dr Apsley: I suspect that government will pay for it, but I suggest that the successful parties of the recent past are the people to do it. As I said, I met Cherry Pipes, which we have no involvement with, at a European meeting that I was asked to chair and again in London when it won the award. There are other parties. We did not flag existing companies using the fruits of research, and one of the best schemes in the whole world was the scheme originally called the Teaching Company Scheme, which is now called the Knowledge Transfer Partnerships. Northern Ireland invested very heavily in that, and it is very successful.

Some of those, and Cherry Pipes is one, went on to develop from the local knowledge technology partnership into being the leader of a European programme. So, I think that the Cherry family and their associates would be good mentors for anyone wanting to do that. I do not know them well, you understand, but that is where I would go to find them.

However, I think that government need to fund it. As Frank said, we are not-for-profit, but we do not want to make a loss. Those companies are for profit, and the family has invested heavily. They cannot put money into doing that work for others. They need help, but I am sure they would be willing to do it.

We were talking to one of our own companies, which you will meet at lunchtime, about how it might help with e-exports. Some of the people, chairmen and board members, and behind me where Bob and Barbara are sitting, are a retinue of such mentors. Those are the people to do it, but I think that government will have to pay a little bit of the bill, if not all of it.

Dr Watts: We talked a lot about Connect earlier. Mr McKay is quite right to highlight mentoring. It is vital, and there is a cultural issue with SMEs. When you produce, if you like, a grouping — "community" is the best word — such as Connect and they come to meetings in a non-threatening situation and they gradually get to know other entrepreneurs and start to link in with experienced people who have knowledge that they do not, the process of mentoring becomes more natural. We suggest that part of the answer, although not the complete answer, is already beginning to grow here in the Science Park.

Mr McKay: Are schemes such as Connect being flagged up to communities and councils at grass roots level?

Dr Apsley: I think so, but there is an awful hurdle for facilitation, because it is not the direct doer. The outcome that you want is not a direct consequence of the facilitation. Facilitation is needed, but it is the other parties who do or who get the measure who might get the result. It is very hard to get that appraised successfully. That is one of the problems that we have had and one of the problems that Connect had in getting funded. If it had not been for the fact that I had hangover from Belfast City Council, which came originally from Invest in Belfast, and a leg-up in a slightly underhand way from the Department, we could not have got started.

I do not think that anyone else will get started. Even now, it is hard for people to see how it works and the way that they report the return. One benefit of our relationship with the Department is that it is quite soft on us. However, the hard bit for us is that we will have to find other funding for it in a couple

of years' time. We may need the help of everyone around this table ere long. I hope that that is helpful.

Ms J McCann: Thanks very much for a very interesting presentation. You spoke about developing the knowledge-based economy and how R&D and innovation are clearly essential to building the economy. You said that sometimes people may have an idea but that that does not necessarily become a commercial business. You also elaborated on your connection with the universities.

The creative industries are a new field that people are going into, and their knowledge and skills are not necessarily university based. How would young people access, for instance, the Connect programme, the business angel network or venture capital? What is the first port of call for young people who have the knowledge and skills? From when they are totes, kids now are much more hi-tech than the rest of us. What would be their first port of call in developing those skills and getting help? It may be a risk, but would that facility be there through those two programmes for young people to do that?

Dr Apsley: There is no barrier or block to either programme in dealing with the creative industries. As we said, 'The Shore' got its Halo funding through that, and on site here is also one of the top gaming companies for Northern Ireland. The issue is simply that there just would not be the resource.

There are resources that we work with on that. I cannot remember the names of all the hubs, but certainly in the city there is a creative industries officer who is a regular visitor. We link through him, and he will filter. Some of the young people may need the kind of help you get from, say, the FE college up the road, where they teach a lot of the basics on how you do that, and, as they filter up, they may then need access to this. We need help in making that selection, otherwise we would be swamped. However, there is no barrier other than resource.

Dr Watts: I would like to go back the point about Halo. I talked about 'The Shore'. However, more recently, an organisation came through and has funding from Halo for a cartoon character set that is a little bit like 'Mr Men'. As it happens, we have a Halo meeting next week at which a very well-known entertainer will be looking to franchise out what he does across Britain and Europe. We are starting to get creative industries coming to us, and it is really a matter of us having to reach out. People are beginning to become aware of the issue, and 'The Shore' has helped a lot. Angel investing is not just about engineering companies and things like that. Also, the work that Mark Nagurski is doing up in Derry is connected to the City of Culture. He is involved in the Digital Derry stuff.

Ms J McCann: What was that name, please?

Dr Watts: Mark Nagurski. He is developing a lot and is working effectively with a lot of media and art-based companies trying to bring them through. Some of those companies will come to us.

Dr Apsley: Can I make a suggestion to the Committee about the answer to that question? We are the host to an Invest NI collaborative network called Digital Northern Ireland 2020. That is basically a programme that the community asked us to set up after our Kelvin event to show basically what happens if you have low latency, high bandwidth connectivity of Northern Ireland in a number of sites, such as Derry and some of the county towns. Sinclair Stockman returned from France, where he now lives, and he runs that for us. However, there are a number of players such as Greg Maguire, who is the creative engine behind one of the companies that produced 'Avatar'.

Ms J McCann: 'Avatar', yes. I was at that workshop where he spoke.

Dr Apsley: Greg came through our networks and is now a professor at the University of Ulster. Anyway, for all the reasons that you said, the point is that there is a subset of Sinclair's group looking at that. It is a different dynamic.

The universities are involved more than you might think, and there is more of a connection than you might think, but you are absolutely right. People such as Darryl Collins recognise that you can take kids directly, as it were, from school and use their creativity and train it into doing useful work in that

way for all concerned. It is not my area of expertise, but I suggest that you invite Sinclair to bring a small group to your Committee at some stage in the future and prepare for it with that question. Then I think you will get a useful answer.

Mr Hewitt: Can I just answer Ms McCann's question in another way? There is an important dimension to retaining the character of a science park, which is that the industries that locate here are fundamentally science based. That is the basic concept here, and that is what makes a park such as the Northern Ireland Science Park attractive to international companies such as Dow Chemical and Microsoft and so on. It is the fact that science is done here that makes it attractive.

The creative industries are increasingly becoming science based. The whole question of digitisation and so on is now an increasingly important part of the creative industries. So, although there are some aspects of the creative industries that do not necessarily fit well in the panoply of companies that we have here, we very strongly welcome other areas of that industry. I believe that one of the advantages that we have is our proximity to the Paint Hall film studios, which you passed on your way in and which are currently being developed. So, there is enormous capacity for co-operation between ourselves and those organisations and industries in the creative sector. However, it is important to stress that only certain aspects of that industry would fit well in the Science Park environment.

The other thing that we did not say at the start was that we have quite strict tenancy criteria that we apply to companies coming here. It is not that we do not want to fill our space or make companies welcome, but part of the uniqueness of the Northern Ireland Science Park lies in the fact that most of our industries here are, in one way or another, based on science of one kind or another. It is very important that we retain that characteristic, otherwise we could just become a business park. We are not a business park; we are a science park, and it is very important that we retain that distinctive character. I hope that I, in no way, have provided a negative response to your question; I was just trying to define the areas of that sector that could profitably locate here.

The Chairperson: I think that it is very useful to make that distinction between a science park and a business park.

Mr Hewitt: Exactly.

Mr Frew: Gentlemen, thank you for your presentation. I want to take you back to the funding of research and development from the various bodies and layers of government right up to Brussels. It was put to us last week that government bodies and funding groups do not fund failure. That is a big issue for them. You said that a bedrock and foundation of research and creating something is in the failures that you have first, and those failures can be useful and are not necessarily bad. How do you see the funding groups in Brussels, Westminster and Northern Ireland evolving to suit innovation, so that there is not such a stigma around failure and it is possible to realise the benefits of funding projects that have not worked but which could lead to something successful? Do you see that as a gap? If so, how should that be filled?

Mr Hewitt: I will deal with that at a high level and then hand over to Norman, who is much more knowledgeable about the practical side of that. One of the most interesting companies that I have dealt with in my career is Seagate in Derry. I was fortunate enough to be part of the team that worked to get Seagate to locate there. I recall conversations with Al Shugart, the chairman of Seagate at that time. To my recollection, he had failed on a number of occasions to set up a company before he finally succeeded in establishing Seagate, which remains one of the premier manufacturers of hard disks in the world. That highlighted to me exactly the point that you made. In other parts of the world, it is possible for people who have had failures, sometime multiple failures, to progress and to build businesses.

In the United States there is limited government funding, so people have to raise funding from friends and relations in the first place and then from entrepreneurial banks and venture capital companies and so on. As Alan indicated, that structure simply does not yet exist in Northern Ireland. The other aspect that one has to bear in mind is that, very often, the first port of call for small and large companies in Northern Ireland will be a government agency of one kind or another. Currently, that is Invest NI. In my

view, Invest NI is much more entrepreneurial than some of its predecessors. However, that said, there is an understandable wariness on the part of government agencies to take risks with public money, and that is a very responsible attitude. Nevertheless, government, and, with respect, that includes all of you, have to realise that business success is never guaranteed. If we are going to expand this economy, we have to be prepared to accept the fact that there will be failures as far as investment is concerned and that judgements have to be made more on a portfolio basis. That is the way venture capital companies make their assessment, by working on the assumption that a certain number of their investments will fail and a certain number will be successful. Again, with all due respect to former colleagues, the Public Accounts Committee looms large in the minds of public servants and I think there has to be a change of attitude and an acceptance that risk is part of doing business. If you are involved in business, as Invest NI is, there is a risk attached. Overall, where government is concerned — government remains the biggest funder of industrial development in Northern Ireland — there has to be greater acceptance that business involves risk, and that as long as the appropriate steps are taken to mitigate those risks, you have to accept that as part of doing business.

Dr Apsley: That is all absolutely right, but I will look at it from a different angle. Most of the national and supranational funding is for science or technology, and as long as you say that that is what you are going to do, there is no risk of failure, because you are going to improve knowledge even if the experiment you are offering does not work. That is one way to get around that and to use all that money.

To give a slightly specious or funny example from way back, my friend was a chemical engineer and got money from government for writing papers on topics such as the behaviour of spheroid objects in viscous media. Spillers was his sponsor, and it had just given him the latest machine that made Mars bars. He was putting nuts into something like a Mars bar, which is what Spillers paid for, and was very rich as a result, but all his academic work was on the behaviour of spheroid objects in viscous media. That is really the difference that we have to identify: who does what? In that case, Spillers was doing what it should do, because that was in the private sector for its gain, but the world was learning about his work. You have to cleverly use the two sides all the time. His papers did not say that he was doing this research so he could build a machine to make Snickers bars; he did the research to understand the science. That is one point.

People here think of DeLorean as great. There was nothing wrong with a stainless steel car at the time — stainless steel was the way manufacturing seemed to be going, because working with aluminium was too difficult — so technically, although DeLorean may have been a crook or may have been something else, I do not know, there was nothing wrong with attempting to build a stainless steel car with the technology at the time. Northern Ireland and DeLorean, even, were not to know that steels were being improved to the point where you could make thinner and thinner ordinary steel that would not rust, and also that others were using aluminum. That is just the way the world works. If he had said that he wanted to research stainless steel cars and got money for that, we would never have seen anything wrong with that. How you chose what to fund is part of how you calculate that risk.

The other current example I want to highlight is Nortel, which grew up from what started in the 1990s as a simple cable manufacturer. It grew because it put \$3 billion of turnover into research. One of our board members at the time was the technical director. It has fallen back to \$1 billion, but that is still pretty big. It would not have been here otherwise. Not only that, every research team that I know that was there is back here in Northern Ireland.

One of the most important units in Weavers Court is Intune Networks; there are three of them here in the science park, in Bytemobile and a couple of other companies. One of them was called Intelliden and is now part of IBM, which has now acquired another company in Belfast, so IBM corporate is growing in Belfast. Was that a failure? Was anything that we gave to Nortel a failure? It has regrown now as three global companies and several that may well turn into global companies. There was an announcement that Hermann Hauser, one of the biggest technical investors in the world, has just become a board member of Intune Networks. When you call something a failure, you often put that label on too early; you have to wait and take the bigger picture. That is the other dimension that we need to get round.

Mr Frew: I have one further question; I will try to be brief. Some of our SMEs would tell us that they are just so busy doing what they do on a daily basis that they cannot develop the R&D side of things, nor can they pursue funding, because, for them, it means hiring a new employee or a team of employees to do that. Is there a danger that small companies could sell their soul to try to get money, and, in so doing, lose sight of what they are trying to produce? Is that something that we should be aware of and concerned about?

Dr Apsley: I am not sure that I know enough to answer that precisely, but you are absolutely right: a small company — even a small science park — spends much of its life trying to stay alive. There is no doubt that that is what dominates. A company will only take a risk on R&D if it perceives a bigger risk of losing the whole company as a result of something else. The Cherry family's company took a risk by turning a concrete pipe maker into a recycled plastic pipe maker. They are balancing those risks all the time, but what they are telling you is that, in normal daily life, just staying alive is the dominant thing. Then, of course, there are trade associations and bigger groupings whom we could listen to and work with, and so could the universities.

As I also said, we do have really good schemes, such as the knowledge transfer partnership. However, there is another thing that we could do. We tend to put publicity into the scheme and say, "Do this and do that and you will get 50%". Not one single piece of publicity was created out of the success of Cherry Pipes, for example. The year before, a knowledge transfer partnership in Ulster was the country's best; it had no publicity, to the extent that I do not even know which company won the award, I just know that because Vince Cable said it when he made the announcement. We could report the success of all the projects so that others can learn from that, and it can help them to balance risks.

Mr Frew: Yes, I understand.

Dr Apsley: We are trying to do it by barracking at them and telling them that they are not doing enough R&D, but they are working really hard to stay alive. You have to give them a bit of inducement the other way.

Mr Dunne: Thank you very much, gentlemen, for your presentation. I apologise for being late. I want to make a couple of points, although they have mostly been covered in other members' questions. How do you market your products and services in Northern Ireland? I am relatively new to this Committee and to the Assembly, and I was not very aware of the good work that you are doing. It is important that you go out and sell yourselves a bit more, especially to the larger manufacturers and to the SMEs that we have talked about, telling them about the services that are available and the opportunities that are there.

We are all impressed by what we have seen and heard from you today.; your professionalism has come through. You talked about having 2,000 staff and 110 companies. How is that managed? Are they going in and out of those companies? I understand that the companies are located here. Can you clarify that for me?

Mr Hewitt: I will kick off, if I may. I will put my hands up now and say that we probably have not marketed ourselves as aggressively as we should. At the moment, we are putting together a programme that will substantially raise our profile. In the start-up phase of the science park we were focusing on building, so we were not achieving the levels of success that we are currently enjoying. In the last two to three years, we have had such a level of interest shown by companies coming here, as evidenced by the fact that we are full at the moment, that we have not had a need to market ourselves with the objective of filling space.

The marketing challenge for us is really a Northern Ireland marketing challenge. It is being part of the product offering and part of what Northern Ireland has to sell to international companies. We have worked quite closely with Invest NI to ensure that, where it is talking to science-based companies, the Northern Ireland Science Park is part of what it markets. I will give you an example of that. Just after the initiative of Secretary of State Clinton and her envoy Declan Kelly, a number of US companies came across to Northern Ireland. The First Minister and deputy First Minister hosted a number of those at

Stormont. As a direct result of that, Dow Chemical came along to us and said that it would like to locate in the Northern Ireland Science Park, and it is still here.

We are still slightly disappointed — I am certainly disappointed — that we have not got the awareness through to public representatives like yourselves at the level that I would like to see. That said, there are very few Ministers in the Executive who have not been here on a number of occasions. The ones with whom we work closely, such as Minister Foster, are here regularly. We have also had visits by the junior Ministers in the Office of the First Minister and deputy First Minister. We have embarked on a programme that, hopefully, within a matter of months, will mean that there will be very few of your Executive colleagues who do not know a little bit about the Northern Ireland Science Park.

We are a very small organisation with very limited funds. You are looking at about half of the team beside me here. We do not have a big team. We are in the process of recruiting a new public relations and communications agency. You will undoubtedly see a lot more publicity on the Northern Ireland Science Park in the coming months and year.

It is a difficult concept to explain. I hope you will have got to understand a bit more about it this morning, but, if you had not been here and seen it, touched it and felt it for yourselves, it would have been difficult for you to understand exactly what the Northern Ireland Science Park is about. It is difficult for us to convey that. Although we have articles in newspapers and so on, and we always make sure that visits to the park are highlighted in the media — no doubt you will find pictures of yourselves in the papers in the next few days — it is still a very difficult thing to get across. The last thing I will say — I have to be careful about how I say this, for obvious reasons — is that I feel that the media does the Northern Ireland Science Park, and, indeed, the Northern Ireland economy, a disservice.

Mr Dunne: And the Assembly.

Mr Hewitt: I could not possibly comment on that. My feeling is that — I know this from other positions that I have been involved in — it is very difficult to get the Northern Ireland media interested in the positive aspects of what is happening here. If a company closes you can bet that there will be a reporter from UTV or BBC standing outside the company announcing the fact that there have been 200 job losses or whatever. To try to persuade the media to cover positive stories remains a serious challenge for us. If it is complicated, as the Northern Ireland Science Park is, that makes it even more difficult for us to interest them. That said, we have noted more interest from the media in what is going on. I think there is an intrigue factor: there are things happening here that they probably were not aware of.

The Chairperson: I am just thinking of the headline: "DETI Committee visits science park on the 100th of March without incident".

Mr Hewitt: It could be even worse if you were photographed standing alongside the Thompson Dock.

Dr Apsley: Can I comment on the 2,000 staff? They all belong to their own companies, and you are going to meet some of them. What Frank said is absolutely true, but, at the same time, the lion's share of credit goes to those companies that are all in growth. That is the other wee bit of the balancing act that we try to do when it comes to the media. You are going to see SAP later, and SAP will show you the future of the internet. To be honest, that has been available for the press to come and see for some time. I am disappointed in the fact that we do not have a technical press that would try to make stories out of that or out of any of the other good news stories that are around, because that would all help and add grist to the mill. We have to be conscious of the resource, as Frank said, and that is the one thing that is maxed out. We have not got a single desk that we could let at the minute.

Mr Dunne: That is good.

Dr Apsley: No, it is not good. That is not how a science park should be; it should always have something empty to make way for expansion. That is part of the rule book.

Mr Dunne: You need to extend.

Dr Apsley: We cannot get the finance to do that.

The Chairperson: Is that in the sense that you want people to be moving on and more people coming in?

Dr Apsley: There is a lot of churn. The science parks were representative of the fact that the world changed. When the concept started in California in the 1950s, it was because science-based companies were anathema to the property industry of the day, because they had dirty, nasty things, they needed a lot of power and they involved chemicals and so on. Therefore, the university had to take a handle of that and build something that could cope with it. However, it also had to cope with the fact that they were volatile and that they grew quickly or they died quickly. Therefore, they were like gypsies in the sense that some stayed and some did not want to know. That is where the concept came from, and it is still valid. Just before we came here, I signed a lease for a small but exciting company. However, they may be gone next week or another one may be replaced. The big companies are the ones that sign, but even then they sign for five to 10 years, not the 25 years that would be wanted in the centre of town. There are differences like that.

The Chairperson: That brings our questions to an end. Thank you very much for a very interesting session. We are delighted to be here, and we will look around the science park after the meeting has ended.