

Title: Estimates of Innovation and Science, Tuesday, March 7, 2000
 00/03/07
 8:09 p.m.
 [Mrs. Gordon in the chair]

Subcommittee D – Innovation and Science

Gordon, Judy, Chairman
 Renner, Rob, Deputy Chairman
 Amery, Moe
 Broda, Dave
 Carlson, Debby
 Coutts, David
 Havelock, Jon

Herard, Denis
 Hlady, Mark
 Langevin, Paul
 Magnus, Richard
 Pannu, Raj
 Paul, Pamela

Pham, Hung
 Sapers, Howard
 Shariff, Shiraz
 Taylor, Lorne
 West, Steve
 White, Lance

THE CHAIRMAN: I'd like to welcome the committee to room 512. We will be dealing with the estimates of the Innovation and Science ministry. I would just mention that the other night we had a very good discussion with a lot of input the way Mr. Havelock, the Minister of Economic Development, did it. What happened, and you might wish to consider it, hon. minister . . .

DR. TAYLOR: I've already considered it, Madam Chairman.

THE CHAIRMAN: Okay.

DR. TAYLOR: Certainly if the opposition wants to be co-operative and work in exactly the same fashion that Mr. Havelock worked, I am more than prepared to do that. I'm more than prepared to speak for 20 minutes at a time, too, and would take great pleasure in doing so and not answering any of their questions. But I certainly am prepared as well to go in the interactive fashion, which I personally found very successful and which Mr. Havelock utilized the other night, so it's entirely up to the members.

THE CHAIRMAN: Okay. Well, I guess we'll leave it with the members.

DR. TAYLOR: Can we use names here, Madam Chairman?

THE CHAIRMAN: No. This is the same as the Assembly.

DR. TAYLOR: Okay. Well, then, I apologize for using the hon. member's name.

THE CHAIRMAN: I think I did, too, so I apologize as well.

DR. TAYLOR: Yes, you started me on that actually. I was just following your example.

THE CHAIRMAN: I don't know whether it was necessary that you stood up and took a bow.

Anyway, we will start. Go ahead, hon. minister.

DR. TAYLOR: Well, are we going to go in an interactive fashion?

THE CHAIRMAN: You have to start with introductory comments, and then I'll ask the hon. members if they will.

DR. TAYLOR: Okay. I'll just keep my introductory comments very brief then, assuming that we're going to go in an interactive fashion. It says "Mr. Chairman" here, but I'm going to actually change my speaking notes and say Madam Chairman.

MR. HAVELOCK: That's good research by your department.

DR. TAYLOR: It's very good research by my department, as the hon. Member for Calgary-Shaw points out.

Anyway, I'm pleased to be here to talk tonight about my 2000-2003 business plan and in particular the estimates for 2000-2001. All of us know we have a rapid pace of change in our society, and it does make it more difficult to plan ahead. If I could just give you a little bit of a story, John Roth, who's the president and CEO of Nortel, talks in web years. In John's scheme of things there are eight web years in one year. He only plans three web years ahead because that's all he feels that a big company like Nortel can plan ahead, about three web years. So I guess the point is that with the rapid pace of change in society it does make it difficult to plan ahead, but I think the activities and investments that we outline in here this evening will help create a framework for sustainable prosperity for Albertans.

I believe one of the great keys to economic success in the future is innovation. I believe we have to embrace new ideas, we have to embrace new technology, and if Alberta is not going to be a perpetual hewer of wood and drawer of water, if we want to be leaders in the global knowledge-based economy, then we have to embrace innovation. I think a good example of how our government and my government is embracing innovation is the fact that we have just set aside \$500 million in Budget 2000 for the creation of the Alberta heritage foundation for science and engineering research. You're all familiar with AHFMR, which is kind of a nice acronym. We're going to have to get a good acronym for this, so it will probably be called AHFSEER. You know, we can have before and 'afser'. [interjection] Thank you, Denis.

So what we have is a foundation that is going to create a stable investment in science and engineering for research. This endowment fund will help Alberta universities attract top scientists, and we know this from our experience with AHFMR. Also, we know this from the brief experience that we have had with ICORE, the informatics circle of research excellence that we just created last fall. We committed to put \$10 million a year into that information and communications technology research excellence centre. They went out and started advertising. As you know, these people are very difficult to attract because of high salaries and so on. It was very interesting the way they did some initial advertising, because one of the personality profiles of these people indicates that they like extreme sports. They like the mountain climbing. They like the skiing. They like the mountain biking, hiking, and so on. So ICORE went out with some advertising with a big picture of mountains on it and then extreme computing over the top of the mountains. I thought it was a really creative way. That was just, as I say, created last fall.

I can tell you that as of today we're negotiating with two leaders in the world to come to Alberta to be part of ICORE. One is from Europe, and one is from the northeastern United States. Now, they've approached us after seeing what we're doing. Whether we'll

ultimately sign a contract I can't say, but it looks very, very hopeful that we have these two leading individuals already taking notice of what's happening in Alberta with appropriate government funding for research and development.

So I believe that's what we can do with this, and that's only \$10 million a year. You can imagine what we can do with a fund that starts at \$500 million, and they tell us that you can spend approximately 5 percent of an endowment fund every year. So it will start this year with a \$25 million investment, and then as that fund grows at a minimum of \$100 million a year for the next five years, it will reach a billion by 2005, or it might even reach it before then, depending on budget conditions. Perhaps we might even be able to put \$500 million in next year and reach the billion dollars next year. Certainly that's something that we will investigate, depending on budget conditions. I mean, this is all predisposed on a solid and healthy economy and a solid and healthy budget.

So I think, you know, we can create the right environment in Alberta for the top science to be here. Once you have the top science and the top scientists, the top graduate students, you get business here as well. The high-tech business will locate where the top science is, where the science they need is. Also, business will spin out of the science.

Just one quick example and then I'll conclude so I don't use too much time here and we can get into questions. One quick example is Silicon Graphics. They spun out of Stanford University in 1982 or 1983, and they have between 30,000 and 40,000 employees today. That is in a period of 17 years. That's the kind of business that can spin out of top science, and we can look at any number of businesses in the high-tech area. I mean, you can go back to the early one that everyone is familiar with, which is Hewlett Packard, which spun out of Stanford University. You've probably seen their commercials with the old garage and they're going back to the skunk works type of projects, or at least that's what their commercials say.

There are a number of huge businesses that have spun out of top science, so the goal is to create the top science. The goal is to get the best scientists here, and then the rest will follow. There's good evidence for that all over Europe and all over North America. You can look at North Carolina. You can look at Boston. You can look, as I said, at the Palo Alto area, and you can look around Oxford. You can look at any number of those areas. Where you have the top science, you get all kinds of business opportunities.

So that's what we're about. We're in the business of trying to get the best science we can here in Alberta, and from there the rest will happen.

I'll stop there rather than taking my full 20 minutes so that we can go on in an interactive fashion.

THE CHAIRMAN: The hon. Member for Calgary-Buffalo.

MR. DICKSON: Thanks, Madam Chairman. Good evening, Mr. Minister. It's always fun to ask questions of a minister who is so obviously enthusiastic about his portfolio. What I propose to do is ask some specific questions and afford you an opportunity to respond. Perhaps we can see how that goes in terms of time. As I say, I recognize your enthusiasm for your portfolio, and there's lots of information, so let's just see how it goes in terms of the back and forth.

Let me start off. I'll mention to you that I've got a number of questions that arise from responses you'd given on March 29 last year. So maybe while we're chatting before I get to that, you may have somebody here from your staff who will have that handy, because we'll loop back and discuss some of your expectations from a year ago.

Before we do that, just the one administrative thing I want to be clear on. Dan Bader, your ICT fellow, had been reporting to two ministers: health and public works, supply and services. Has that sorted itself out in the intervening time?

DR. TAYLOR: Actually, Dan is no longer with us. He's a deputy at Municipal Affairs, so it has sorted itself out.

MR. DICKSON: Okay.

The further question I wanted to take you to is in goal 6, specifically the whole information . . .

DR. TAYLOR: If you've got a page number, it would be helpful.

MR. DICKSON: Page 195 of the business plan book.

DR. TAYLOR: Okay. Thank you.

MR. DICKSON: What I wanted to ask you about, Mr. Minister, is what strikes me as some of that silo building that I thought we were trying to move away from. I'm referring to sort of the whole business of information management, information technology. We have Municipal Affairs in one corner, which is responsible for the administration of the Freedom of Information and Protection of Privacy Act. They have officials that they co-ordinate in every single public body, not just government departments. They have been building up some expertise, some experience in that area. Then we have Government Services, and we heard from the Minister of Government Services the other night. They're busy doing a bunch of planning in that area. Then we have the Chief Information Officers' Council, which is yet a third entity which is scurrying around looking at ways of marketing information, managing information, exploiting technology. Then we come to your department. So I wonder if you could just take a moment and help me understand how we're able to fully exploit the technology, the commercial opportunities of the technology when we've done such a great job of fragmenting responsibility in so many different areas.

8:19

DR. TAYLOR: When we started, as you know, we did undergo major restructuring, and the restructuring is continuing. What we are doing in my department is that we are going to be policy and strategy; all right? So we are moving out of the department anything that is transactional because, quite frankly, that is not where we are. So the transactional things we are moving out. The Imagis is in the process of being moved out, we have some data centres that we will move out, and all the transactional pieces, if I can call them that, are going to be handled in Government Services.

We will be the group that sets strategy, sets government policy through our chief information officer, who is part of us. Next year you will see that my staff complement will be substantially smaller than it is this year because we will have moved out a number of positions to either the private sector or to Government Services.

So we're trying to focus Government Services. The focus will be transactional bits, the paying of cheques and all the different transactional things. The focus of our department will be policy and strategy. If I can give you an example of that, one of the things we have in government, as we sit here and speak, is four different e-mail systems. Well, does that make a lot of sense? Not really. So what we are doing, the policy we have established is that we will go to a common e-mail system. Our policy is to move to common platforms across government. That's the policy and strategy bit. Then it will be up to the departments to implement that policy and strategy, and

we of course will help them implement the policy and strategy.

Another example I might give you is desktops. I mean, we've got desktops all through government that don't talk to each other. So the question is: does that make sense? Well, not a lot. So we are through my department the policy and strategy is to go to a common desktop, go to common software throughout government. Now, that will take some time. Obviously we're not going to go out and buy everybody new desktops tomorrow, but as you know, the renewal period on these things is two to three years. So over a period of three years we'll move to common desktops, common software, and common platforms. Although we won't be in the business of operating all of those computers in each individual department, we will set the policy and strategy.

MR. DICKSON: Okay. If we had an archivist sitting here, they'd probably make the observation that optimal planning involves dealing with every single file from the point of inception to destruction, treating that as a continuous stream instead of sort of pods of information in different areas of government. What you haven't had a chance to address for me yet is an understanding of how you conceptually ensure that your information management is focused, co-ordinated, tight. I'm talking about systems. When you have the balkanization and the tension I see there, I don't see it being resolved just by focusing your department's energies on policy and somebody else doing information management.

DR. TAYLOR: The files that would exist in Municipal Affairs will stay in Municipal Affairs; okay? My department is not interested in taking over the files from Municipal Affairs or Health or anywhere else. All we're interested in is creating the common policy, the common strategy so that if somebody from, say, Health needs something from Municipal Affairs, they can easily access that information from Municipal Affairs.

MR. DICKSON: The challenge I see though, Mr. Minister, is that if you look at your business plan – it's the final bullet under goal 6.

Continue to streamline and simplify access to government information through the 'One-Window Access to Services' project, jointly with Government Services.

Well, surely that's driven by the kinds of information each one of those departments collects, the way they record it, the way they store it. This has been the problem, frankly, we've had in Alberta, with respect. There's not been enough integrated thinking that encompasses all government departments. The thing about FOIP, love it or hate it, is that it sure exposes the weaknesses in an information management system.

DR. TAYLOR: But you cannot have one-window access until you have common systems throughout government. So Government Services and my department and several other departments – we had a meeting just about two weeks ago; I can't remember the various departments that were there – are working on one-window access, but you can't have that until you've got a common platform. Once you have a common platform, you can access any department, anything you absolutely want from one window, but that won't exist until there's a common platform.

MR. DICKSON: Okay. Let me shift to a related but collateral area. We see what's going on in other provinces around Bill C-6, the fact that provinces like Ontario, Saskatchewan, and B.C. have developed, co-ordinated pangovernment positions on Bill C-6, the way they involve their electors in that discussion: public hearings and so on. It's not clear to me in this province. Is it your department that's responsible for co-ordinating the response to Bill C-6?

DR. TAYLOR: Actually, it's Municipal Affairs. I don't know if Municipal Affairs has had its time at the table yet, but you might want to talk to Municipal Affairs about that. We are advising Municipal Affairs, but it's their responsibility.

MR. DICKSON: Is there some plan for some operational integration of the information branch in Municipal Affairs with what you're doing in the current budget year?

DR. TAYLOR: Well, as we move to one-window access and common platforms, you will have that operational consistency throughout government, but you can't do it without.

MR. DICKSON: Okay.

The other question then. This is one that came up during the three-year FOIP review last year. How do we ensure that the chief information council and the chief information officer are able to take full advantage of what the information branch in the Municipal Affairs department has developed in terms of inventorying, cataloguing the kinds of records and data that the provincial government has, and so on?

DR. TAYLOR: Once the inventory, the data, is electronic, anybody can access it. We can't access it now because it's too darn much work if it's just in files, but once it's electronic, anybody with the appropriate clearances will be able to access the data inside government. So the chief information officer will be able to access data in Municipal Affairs. He'll be able to access data in Energy. That's what the chief information officer will be able to do with a common system. He can't do it now, and it will take, as I said, two to three years, maybe quicker. The CIO says that he can do it in 18 months, but he's perhaps being a little optimistic. We can do it, but it will take some time.

MR. DICKSON: Just before I leave this area, let me ask you this. In terms, then, of that whole business of the protection of privacy in the nongovernmental sector, the policy leadership is coming from Municipal Affairs and not from the chief information officer and the chief information council in your department?

DR. TAYLOR: That's correct.

THE CHAIRMAN: No. I'm sorry; we can't do that here.

DR. TAYLOR: Okay. The management of FOIP is Municipal Affairs, but we will work with Municipal Affairs in helping them to develop effective systems of management of information.

MR. DICKSON: Right. I'm trying to just identify where the locus is of decision-making.

DR. TAYLOR: Municipal Affairs.

MR. DICKSON: Not in terms of the existing policy. I've been listening to you carefully, and your future focus is contagious. I'm trying to look to 2000 and 2001 and 2002, and I want to be real clear in terms of where the leadership is coming from in terms of that issue of privacy protection in the nongovernmental sector.

8:29

DR. TAYLOR: Municipal Affairs.

MR. DICKSON: Then let me come back and ask you a couple of

follow-up questions from last year. There had been an expectation – and this was the *Hansard* . . .

DR. TAYLOR: Make sure you read them clearly, because I can't remember that long ago.

MR. DICKSON: Well, Mr. Minister, that's why we expect you've got all of your capable staff here at your elbow practically.

If you look at page D36 in *Hansard* from March 29 of '99, the reference was the number of requests that you were expecting to get for funding. You were talking about the \$60 million to \$70 million, Mr. Minister, that you would see advanced in the current fiscal year, and I'm wondering if your projection was realized.

DR. TAYLOR: I'm going to have to answer that through a written response. I don't have last year's figures in front of me. I can tell you that we will spend between \$90 million and \$100 million strictly out of my budget this year on research and development in this province. That will be this fiscal year because we have that in our budget as we speak, so that's what we will spend this year. But as to the exact total dollars that we spent last year, I don't have that at my fingertips. We can provide you a written response for that.

I think it would be fairly close to that. We would have spent about \$22 million or \$23 million out of the science and research fund, and then we would have spent probably about the same amount out of the I2P2 fund, so there's \$45 million. I'm just going by memory. Then we would have had the research excellence envelope, which would be about \$4 million, and we would have had one other pile of money too – I've forgotten the official name of it right now – which would have been another \$4 million or \$5 million. So we would have been close to there, but for the exact figures I'll have to get you that information.

MR. DICKSON: Another item just following up from last year, page D36 and continued on page D37. You were musing that the government might commit \$3 million to \$5 million a year from the science and research strategic initiative fund. You were expecting substantial dollars to be raised in the private sector. How much money has in fact been raised from the private sector?

DR. TAYLOR: If I can say non Alberta government sector, for every dollar we invested our average last year was 3.88 to 1. So for every dollar we invested out of the science and research fund, other sources – and some of them are private sector, some of them are other government agencies, some outside Alberta, some are federal government, some are the national institutes of health, and some are companies. So it's \$3.88 to \$1.

If I could just give you one quick example of what's going to happen with the private-sector investment, we've been working on a deal with the major research-based pharmaceutical companies, and we announced last fall that they are committing a minimum of \$150 million over the next three years to Alberta to sponsor and support research in Alberta. That's the kind of partnerships you can obtain if the government steps up to the plate first and says: yes, this is important for us; we will invest. So, as I say, that's just one example that I can recall offhand.

MR. DICKSON: Just reverting to goal 6 for a moment. The item I didn't raise was the whole business with health information, Wellnet. In fact, I remember last year that you talked about the importance of having Mr. Bader reporting to the minister of then health, and that was specifically to tie in the Wellnet project. Given the size of Wellnet, the minister of health in 1997 was projecting

\$300 million to be involved in health information technology. How are you making those links? How are you co-ordinating? What's happening within your goal 6 area with the many projects that are going on through Health and Wellness and through Wellnet?

DR. TAYLOR: Specifically in regards to Wellnet, Health and Wellness determines the strategies, the policies, the priorities. We are the technology suppliers. So Health says: "Can you do this? Is there technology to do this?" We say yes or no, and that is the relationship between us and Health. Of course, Mr. Bader responds now, I would assume, to Municipal Affairs and to Health.

It would be ideal from my perspective – and it's not necessarily a government position; this is my own personal opinion – that Wellnet have its own chief executive officer, because obviously Mr. Bader is very busy as the Deputy Minister of Municipal Affairs. I personally will encourage the appropriate people, and have done so, to establish a chief executive officer for Wellnet that is separate from a deputy minister in this department. That person could then interact both with my department and with Health.

MR. DICKSON: I know there are others who have questions, Madam Chairman. How much time would I have left?

THE CHAIRMAN: You have a minute and 35.

MR. DICKSON: A minute and 35?

THE CHAIRMAN: Yes.

MR. DICKSON: That's fine. I'll forgo the minute and 35. Thanks. Thanks, Mr. Minister.

THE CHAIRMAN: The next person who has indicated that they wish to speak is the Member for Calgary-Montrose.

MR. PHAM: Thank you. Thank you, Mr. Minister. Your department certainly is a very important department because of what you do, and the policy that you create today will not only impact us but will also impact future generations of Albertans.

Since the creation of your department under the former minister, the hon. Dianne Mirosh, things certainly have changed a lot in some areas, and in some areas things haven't changed that much. One of the areas that has not changed that much is the question of how you would get co-operation from different government agencies. You can certainly create the policy, but having the best policy doesn't mean that you will get the best result. It is the first step, but certainly it is not sufficient to get there.

Your goal 6, trying to get access to all government programming and data through one window. Certainly you have to get co-operation from different government departments to make sure they are on the same platform and using more or less the same technology so that somehow they can hook up and talk to each other. One area I have been following and have a keen interest in and haven't seen much progress on is the area of how government data is being stored, if we have been successful in creating a common database for all the information that is needed by different government agencies.

One important thing that we should always remember is that the way we do business may change. Twenty years ago we did things most of the time by hand. Most of the time we did it manually. Now we do most of our stuff on a computer. So the way we do things can change, but the one core thing that has not changed since the dawn of history is the data. Whether you store your data on paper or whether you store your data in the computer, you still store more

or less the same data. That's critical if we can have a strategy of how to get all these data under one roof and have a master dictionary defining which field to be stored and which environment they will be stored under and who will be the custodian of this information. Having that, we will make a significant advance in achieving goal 6 for the department.

8:39

Another area I want to touch on is the partnership with the companies and the nongovernment agencies out there. Certainly your department cannot influence all the success in science and technology by yourself. You have to look for partnership. The creation of the endowment fund is a very, very positive step, and you have worked very hard to create that. I commend you for that. However, as we move further and further into the 21st century, information technology becomes increasingly important not only for companies but for the average Albertan as well. I am still not a hundred percent sure that we have all the right stuff to create and foster these partnerships, especially in the education field. I think your department already has a close relationship with the Learning department, but I think your department should have a very important role in shaping what kind of education system we should have in Alberta to take advantage of these opportunities and also to explore all the potential for our youngsters in Alberta.

I know that you care very much about knowledge-based industry. For the last few years you have fought tirelessly for the benefit of this industry. We have to compete with many other players not only in Canada but internationally as well, and Alberta is a relatively small player. How do you feel about our advantage compared to the other jurisdictions in terms of attracting and retaining these top-notch players in the knowledge-based industry? I know the endowment fund was created to move in that direction, but is that enough? Do you have any wish-list items that you would like to achieve in terms of tax breaks, for example?

One of the other areas I wanted to touch on as well . . .

DR. TAYLOR: If I could just perhaps respond.

MR. PHAM: Okay. You can go ahead.

DR. TAYLOR: I've got four major points here. I'll respond quickly to them. Thank you for your comments.

Let me just start. The initial question you asked was about co-operation between internal government agencies. Certainly this whole department that we have been built on co-operation and a working co-operative relationship with other departments. For instance, Economic Development: we share staff. We've got 10 staff, I believe it is, that we share with Economic Development. The Minister of Economic Development kindly pays fundamentally a third of their wages, and we pay two-thirds of their wages. So we have co-operative relationships. Our relationship with Health and Wellness, you know, where they do strategy and policy, and we provide technology. So there are a number of co-operative working relationships.

There are also official kinds of relationships that exist. For instance, today if departments are going to purchase new software, new hardware, new information and communications technology systems, they have to be cleared through the chief information officer. That's not to say that we're going to stop things, but there is a clearinghouse new purchases have to go through so that we can move. If there were no clearinghouse, you know, we would not be able to move to common systems, common platforms. So there is that clearinghouse. There's the co-operative effort that's voluntary,

and then there's the kind of official relationship. Each department has its own information officer. They have regular meetings with the chief information officer. Ultimately purchases of new information technology materials – software, hardware – go through there. Those are a couple of the ways we get interdepartmental co-operation.

With regard to data storage, it's very interesting. We have masses and masses of data out there on paper right now that would take years to convert electronically. But as we move forward, it is my goal to have more and more of our data stored electronically. There is some resistance to this, because we have to be very careful. A member earlier talked about FOIP. We have to be very, very cautious of FOIP requirements. There is some resistance by – I was going to say the Ethics Commissioner – the FOIP commissioner, same guy, and his office.

MR. PHAM: The Privacy Commissioner.

DR. TAYLOR: The Privacy Commissioner. Fair enough.

MR. HAVELOCK: You should know him on a first-name basis.

DR. TAYLOR: I know him as the Ethics Commissioner, not the Privacy Commissioner. Thank you for your comment, hon. member.

The Privacy Commissioner has some concerns. We have to work through all of those concerns as we move into electronic data storage. So it is a huge issue. Of course, it needs a culture change too. We've been storing data on paper for so long, and you know how significant it is to change cultures in a major business, a major government. In any big organization culture changes are slow, but we are working on it.

With regards to education, the importance of our being involved. Certainly at the universities, SAITs, and NAITs we're heavily involved because we have the control of the research dollars. We work very closely with Learning on this in terms of the direction research goes, so we are very closely involved with Learning on that.

Where we are not so involved is in K to 12. One of the things we are presently working on with Learning is what I would call a science awareness program. One of the difficulties we have right now in Alberta is that we don't have enough kids coming out of grade 12 that are skilled and that have the right sciences as they come out, especially females. We lose our females mostly, it seems, between grades 7 and 9, when they lose their interest in science. So we've got a whole population out there of females – and I know from my own personal experience of having a wife and four daughters that girls are smarter than boys – and we're missing a huge talent base.

What we're doing right now with Learning is developing a science awareness program that we will hopefully start this fall in the schools to bring the awareness particularly to young females and the opportunities in science to all people, but in particular young females, as they progress through the system. How will it work? I don't know. We won't know for a few years how it works until we see if there are more people, male and female, coming out of grade 12 with a stronger emphasis on science. In regards to our relevance to K to 12, yeah, we're relevant, and that's the way we're moving.

In regards to knowledge-based industries, you mentioned a number of issues there. From my meeting with several hundred of these over the last several years, the things they require most are not tax breaks. What they require are two things: venture capital and people. Okay? That's what they all tell me. We have today as we sit here about 1,500 vacant spots in the information and communications technology business in Alberta. In fact, last fall Nortel put out an advertisement, I think for 30 computer engineers, and got zero

response. I mean, these are jobs that start at \$45,000 to \$50,000. These are not \$20,000 jobs.

8:49

The problem is that we're not graduating enough people out of high school; we're not graduating enough people out of university. The big companies like Nortel will tell you very openly that unless we have a critical mass here, they can't expand any further. The small companies need the people as well. Now, really, I don't suspect that Nortel needs venture capital, but the small companies need venture capital.

We have a significant problem in Alberta. Depending on who you read, we have between 13 and 15 percent of the economy, we have 9 percent of the population, and we have 3 percent of the venture capital in this country. So we need to create an environment that will cause venture capital to locate here. What we know about venture capital and venture capitalists is that they will only invest their dollars in about a 50-mile radius of where they exist. In fact, in Silicon Valley that is even shrinking. Right now some venture capitalists are putting up their own buildings. If you want their money, you've got to be in their building, so that radius may even shrink. The radius used to be that, on the whole, venture capitalists would invest in a radius of 100 to 120 miles. Research is showing us now that, on the whole, venture capitalists only invest in a radius of 50 miles of where they presently live and work. So that's a big issue for Alberta.

There is venture capital in Alberta, but it tends to be oil related. People who have dollars, the angel investors, tend to invest in what they know. Since most of the angel investors are oil related, they tend to invest in the oil patch as opposed to some of the high-tech areas.

Another thing that I believe is going to help companies in Alberta is the Canadian Venture Exchange, that's been created in Calgary. That is very clearly talking about high-tech companies, but you have to be at a certain level before you can go public, so we still need that intermediate investment from the small company when they're supporting it on their own, out of their own pocket, mortgaging their houses and so on, to the venture capitalists. We need that stage in there, and right now we don't have it to the level we should.

MR. PHAM: Thank you. I will continue with my line of questions. One of the things you mentioned in your answer is the fact that the high-tech companies cannot find qualified employees to fill the vacant positions they have. I think many young graduates are facing today the cycle of not finding a job because they don't have the experience and not having the experience because they can't find a job. I encourage your department and the human resources department to come up with some kind of special program geared to help graduating students, especially in the high-tech area, to find the first job they can after they graduate.

Another area your department certainly paid attention to in the past – and I don't know how successful it has become since then – is the idea of marketing technology that we have in Alberta to the outside world. I think my colleague sitting right next to me, the MLA for Calgary-Mountain View, is chairing the committee. I certainly am interested in hearing any successes you have had in that area and what plans you have to further sell this technology outside of Alberta, because certainly you can market them and you can have more resources to do further development.

The area you talked about earlier that deals with the amount of information and the sensitivity of changing it from paper to electronic: certainly your answer is bang on. I hope the members of the opposition parties take notice of this. I remember last year, when we

tried to pass Bill 40 in the House, and the amount of opposition and the amount of public outcry that we heard. It seemed like civilization would have ended at that time, but several months after here we are. We still haven't heard of any major screwups yet. The people are happy, and the system is turning very smoothly.

THE CHAIRMAN: Calgary-Montrose, I'd just mention to you that there are fewer than two minutes left in this segment if you want the minister to answer.

MR. PHAM: Okay. Thank you. Mr. Minister, if you didn't have time to answer, you can certainly ask for unanimous consent to extend your time.

DR. TAYLOR: Just in terms of marketing technology we have a team effort there. Certainly Economic Development is very, very helpful with marketing technology. The member you mentioned is chairing a committee on technology commercialization and marketing, and of course the Alberta Research Council is very active and actually selling marketing technology. For instance, they're just in the process of doing a joint venture with Singapore, and the Singapore Technology Corporation is interested in Alberta technology, because they apparently have access into Chinese markets. There are a number of ways that this is happening, and we will get better at this. We've got a long way to go just in terms of technology commercialization.

Another thing that is happening is that the technology commercialization wings of UTI and ILO – those are the two university tech commercialization groups – ARC and AHFMR are meeting. They're going to bring in Olds College. They're going to bring in some private-sector technology commercialization folks and develop a real strategic plan to do that.

THE CHAIRMAN: Okay. Shall we move on? There are only 24 seconds left.

The hon. Member for Edmonton-Mill Woods.

DR. MASSEY: Thanks, Madam Chairman. I think the enthusiasm for the activities of your department have been pretty well documented in *Hansard*.

DR. TAYLOR: I've got enthusiastic staff too.

[Mr. Renner in the chair]

DR. MASSEY: Even the opposition has been enthusiastic. The AHFSER project, the bill before the House, I think, has been very well received.

I had today – and I suspect that you may have too – an article sent over to me by Ken Norrie, the dean of the Faculty of Arts at the University of Alberta, on the invisible partner in Alberta's knowledge-based economy. He goes through and raises some questions. While he applauds the investment in science and technology, he makes a plea and makes the case in terms of the humanities and social sciences and indicates that technology is not enough.

You have objectives throughout your documents talking about creating a science and technology culture, trying to get more students interested in science, trying to make this a centre for people to come to, and his proposition is that the chances of that being successful are less and in fact in the past have not been successful unless it's accompanied by an equal emphasis and thrust in the social sciences and humanities. He talks about the importance, for

instance, of languages. If you're going to operate in the world economy, then you have to go to them on their terms, and that includes languages as one part of that and understanding of cultures. He talks about the lag in our knowledge of social institutions, and you see it with the health care system, knowing where the aging population is going, accommodating for that, things we haven't done in the past.

He also talks about not being able to establish that community that you would have unless we have the Winspear Centres and the MacLab Theatres and the art galleries, because that is an important factor in the quality of life and, in fact, what helps draw . . .

DR. TAYLOR: And the football stadiums.

DR. MASSEY: Well, that too. Those are very important factors, yet as you look at the funding for advanced education, postsecondary institutions, and you look at the creation of Innovation and Science, your department, and the folding of postsecondary in with K to 12 and the underfunding of postsecondary – I think the minister in estimates the other day . . .

DR. TAYLOR: Well, I think if you want to talk about funding postsecondary, you're in the wrong place. That is the Department of Learning. I mean, I'll debate with you right here and now if you wish, if you want to make political statements about education being underfunded, postsecondary education being underfunded. I can be as political as you want, but I didn't think that was the purpose of this. I thought we were here to have some honest exchange and honest ideas. If you want to get into the political BS, I'll do it.

8:59

DR. MASSEY: If you'd let me finish, I have the question.

So my concern is the balance and to create the kind of culture and subculture that you talk about in the business plans. How much concern is there about the other part of that, the balance in those two kinds of investments?

DR. TAYLOR: Well, first of all, I haven't seen the article, but I will start by disagreeing with him when he says that you can't create a successful science culture without some of the things he's talking about. I would say that the AHFMR has created a very successful science culture in this province. We have attracted the top scientists. We have the best science in the world. We are recognized as a leader in medical research. If you are prepared to spend your money on research and science, you will do it.

That is not to say that those other things are not valuable. For instance, we have the Department of Community Development, that spends millions of dollars on these other issues. Now, I'm not familiar with the budget there, the exact dollars. We have the Alberta Foundation for the Arts and the millions of dollars that it spends yearly on some of these issues you're talking about. We have other kinds of foundations like various theatre societies that are funded by Community Development. As I say, I don't know what Community Development's budget is, but it is a huge budget. I don't know if anybody here knows what it would be.

MR. HAVELOCK: It's bigger than mine.

DR. TAYLOR: It's bigger than the Economic Development budget.

So what I would say is that we are already doing that. We are already creating the balance. We are already funding the arts; we are already funding culture.

I would point out that we fund professional arts, and we have no problem funding professional arts, but for some reason we have a

problem funding professional sports teams. It seems to me to be a little bit of hypocrisy here.

You know, what I'm saying is that we are creating the environment through Community Development, the millions and millions of dollars that Community Development spends. So we do recognize it as a balance, and this government recognizes it as a balance and are spending appropriately. In fact, some of us might argue that we're spending too much.

DR. MASSEY: It's good to have that on the record.

When you look at the performance measures that you have, are you really responsible for these measures?

DR. TAYLOR: For some of them we are, and we're working on developing better performance measures. For example, the number of dollars that universities bring into the province in terms of research dollars: we encourage that by stepping up to the plate first and creating the right environment. Ultimately, you know, we don't control it. So there are a number of performance measures that are measures of the general science culture in our province that we don't control, but I think they're important measures to have, because if we don't report them, then where do they get reported, even though they are not performance measures that we definitely have absolute control over.

We are working towards other measures that you will see in our business plan this coming year that are more directly relevant to us, but these other things are important to know. If you look at some of the measures, some of them are StatsCan data. I don't know what page it's on right now. For instance, 1997-1998 is the last data that we can get from Statistics Canada. So how appropriate is that? On page 279, Total Sponsored Research Funding: it's all Stats Canada data. The last data we can get from Stats Canada is 1997, but we do know, for instance, what the government of Alberta is doing over this time period.

So one of the things we are working on with Stats Canada is to get them to have more appropriate data. In fact, there was an article in the *Globe and Mail* this past week, and it talked about StatsCan now looking at new ways to measure the new economy. We've certainly been instrumental in encouraging Stats Canada to do that. So as they improve their data collection, we will have better information, and in the future you will see provincial numbers in here. They'll have to be in a separate chart, but they will be provincial numbers based on our provincial dollars and the data that we collect, but for the rest of the country we've got to go with StatsCan.

So we need to do a better job of collecting data. We need to do a better job of developing performance measures, but these are still important measures to notice, even if we don't control them.

DR. MASSEY: It's encouraging to hear that you are going to have some other performance indicators in some of the other objectives. Really, if you look at these, if any one of these were to sour, I would wonder if you could rightly blame your department.

DR. TAYLOR: No. That's what I say. Most of these are rather the measures of what I would call the innovation system in Alberta, if I can call it that in that kind of broad term. Measures of the innovation system. We need to have that information, but as a department we need to develop measures that are specific to us as well.

DR. MASSEY: Okay. You talked about silos. In the creation of the department, with science and technology being hived off into the department, and postsecondary education, universities and institutes – are you concerned at all about having those activities located in two centres?

DR. TAYLOR: Right now I'm not, but it's something that we have to be constantly aware of. We do that through our business planning process. I'm familiar and my staff is familiar with Learning's business plan and business planning process, and they're familiar with ours. There's very good staff communication, a very good working relationship from the deputy minister on down. So although there's no formal process, there is a very close working relationship, a very informal process so that you don't see duplication in government.

Then, of course, we have the Government Reorganization Secretariat, which examines all the organizations inside the departments to make sure there's no duplication. We have the Member for Medicine Hat chairing a committee on agencies, boards, and commissions, looking at all the agencies, boards, and commissions of this government to make sure there's no duplication and, where there is duplication, suggesting that they be merged or something disappear.

So we have, I believe, not only the informal controls, but I believe we have the formal controls through the Member for Medicine Hat's committee on agencies, boards, commissions and also through the Government Reorganization Secretariat.

DR. MASSEY: Thanks.

THE DEPUTY CHAIRMAN: That's it? Okay.

Then we will move to the Member for Calgary-Lougheed.

MS GRAHAM: Thank you, Mr. Chairman. Mr. Minister, this morning I flew up from Calgary on the same flight as Sherry Cooper, the chief economist for Nesbitt Burns. I think it's quite well known out here in western Canada of late. I know she's a big proponent of fiscal policies that would support a high-tech economy. She points to countries such as Finland and Ireland, which have achieved a great deal of success in developing their high-tech economies. I'm wondering if your department has analyzed what those countries have done in both their fiscal policies and other policies to promote this and if we are looking at doing some of the same sorts of things to achieve the big successes that those countries have achieved.

DR. TAYLOR: We've looked at successes all over the world, in France, Palo Alto, and looked at different methodologies of achieving success. As I said earlier, the big things that companies need is money and people and a competitive tax environment. When we move to the 11 percent flat tax – and the Treasurer might be able to tell this more accurately than I can – I believe that for individual taxes we will be comparable with the lowest taxed jurisdictions in North America. There may be one or two states that might be lower than us, but overall we will be comparable. So I think that individually we're moving in the right direction.

One of the things that these people look at individually of course, because they make big dollars – these are not poorly paid people. They look at individual tax rates and where they do well economically. In fact, if you take the fact that we only have to pay – I don't even know what it is. Say that it's \$800 a year for a family for health care. Dave Buffet from Nortel, who just moved up from Dallas, told me that he'll be as well off here once we move to the 11 percent as he would have been in Texas when you start looking at the health care premiums and so on that he would have had to pay in Texas. So we will create the right environment for individuals.

9:09

Then in terms of corporations, you said that we need to have a competitive tax environment, and I personally believe, personal

opinion now, that we need to lower our corporate tax rates. If we do that and have the people and the venture capital here, the industry will be here. There's no doubt in my mind, and all kinds of big companies have told me that. John Roth, the president of Nortel, has told me that. Small companies have told me that. We need capital in Alberta. We need people in Alberta, and if we can do that, they will be here. But we're not there yet.

MS GRAHAM: What do you suggest we should do with our corporate tax rates then? What is the magic number?

DR. TAYLOR: Well, the Treasurer would know more what the magic number is than I would, but I think we need to move them down. I can't tell you exactly what the right rate is because we haven't got into that detail on research. But we do need to move them in that direction.

MR. DAY: Agreed.

DR. TAYLOR: Oh, good. The Treasurer is agreeing. Can I ask the Treasurer a question? Where do we need to be?

THE DEPUTY CHAIRMAN: Well, it's certainly up to the member who has the floor right now. There's a 20-minute allocation, and when the 20 minutes are up, we'll be moving to another speaker.

DR. TAYLOR: Oh, okay. Well, perhaps at some future date.

MS GRAHAM: Lorne, I'm happy to use my time to hear the Treasurer on this topic.

DR. TAYLOR: Okay.

MR. DAY: I'll leave it up to the members of the opposition. I don't want to do anything upsetting.

DR. MASSEY: If we can't talk about advanced ed, you certainly can't talk about Treasury.

MS GRAHAM: Fair enough.

All right. I'll move on to another area. I know that there's legislation that, if it hasn't already been introduced, will be introduced to amalgamate AOSTRA and a number of other agencies under your ministry's jurisdiction, and I understand that the new agency that will be created will be to promote and research and develop various sources of energy. I'm wondering if wind power will be one of those sources of energy.

DR. TAYLOR: Yeah, legislation has been introduced. What we're doing is changing the structure so that AOSTRA, AERI, and the Forest Research Advisory Council will be responsible through ASRA, because the Alberta Science and Research Authority is the science policy-setting body for this province legislatively. So it's necessary that these other agencies understand what the overall science policy is for the province.

Now, in regard to AOSTRA, of course that is the oil sands group. In the legislation we are drastically changing its mandate. It will disappear as AOSTRA and become the energy research council, because under their mandate AOSTRA could only work in the oil sands area. It will be the energy research council. They will have their own board, and that board will determine where the dollars are spent in terms of energy research. They will determine it on the basis of excellence of science. So if there's a wind research project

that displays excellence of science, I'm sure that board will very seriously consider funding it, because we want to really expand the mandate beyond just traditional energy sources such as oil and gas.

We might look at fuel cells. I mean, the board might get an excellence-in-science project on fuel cells. That would be something that would be within the mandate of that board. So the energy research council will have a very broad mandate. The projects they fund will be based on excellence of science, and the board will make those recommendations.

MS GRAHAM: All right. Thank you for that.

Would it be fair to say, then, that under the current proposed budget there aren't any specific dollars allocated to the development of wind power energy per se?

DR. TAYLOR: It would be illegal today for AOSTRA to have dollars specified for wind power because it's outside the AOSTRA mandate. As soon as we get the act through and their mandate changes, then it will be up to AOSTRA to determine how their budget will be spent, and if they wish to allocate some of that budget for wind power research, it will be up to the board to do that.

MS GRAHAM: But as things stand now, there's no other venue or agency that could . . .

DR. TAYLOR: No. Theoretically, a good research project could come to the science and research fund very easily. There's nothing to preclude a wind power project from coming to the science and research fund, and it would be handled as any other project that we see: go through peer review, and then a decision would be made based on the peer review.

MS GRAHAM: But it would be something that would have to be proposed from outside. It's not something that government is promoting.

DR. TAYLOR: Oh, yes. The only group that really generates research in that way would be the Alberta Research Council, which is sometimes more directive in their research.

Now, this is a very interesting issue actually. It's one of the issues that we're dealing with now with the creation of the new science and engineering fund. It's going to have, say, 5 percent this year, so that's approximately \$25 million this year, but obviously by the time it gets up and running, it probably won't spend that. That's going to create some freedom in my budget, because some of the projects that were coming to the science and research budget will now be going to the science and research fund.

Now, do we as a department and as the Alberta Science and Research Authority become more proactive with the freeing up of funds in the direction of the research that we want done? That's an interesting discussion that we haven't had yet but that we will be having as we move down this road. How proactive do we want to become in suggesting that a scientist or a group of scientists submit a project in wind power, for instance, or fuel cells or some kind of biomedical area? How proactive will we become? That's a very good question that I recognize as a question and don't have an answer for but recognize that we will be discussing it as we move down the road on this.

MS GRAHAM: A positive problem to have.

DR. TAYLOR: Yes.

MS GRAHAM: Thank you, Mr. Chairman. Those are all my questions.

THE DEPUTY CHAIRMAN: Thank you.

The next member who has indicated he wishes to have some questions is Edmonton-Glenora.

MR. SAPERS: Thank you. Thanks, Mr. Minister. I have lots of comments and questions for you this evening, and as usual I'm sure we'll have a good discussion.

I want to start, though, by talking about the scope of what it is that your department is up against. I read a statistic the other day that claimed that eight years ago there were only 50 pages on the Internet. There were 50 pages posted on the Internet eight years ago, and the estimation is that today there are 50 million. If that's not a bit of a wake-up call to anybody that's wondering about why it is that government has to pay attention to innovation and science technology and to IT in particular, I don't know what would be. Even the Prime Minister – I was reading notes from a speech by the Prime Minister, and he said that when he first became Prime Minister seven years ago, e-commerce was a typo. Of course, now we're looking at multibillions of dollars being exchanged in that way. [interjection] I didn't mean to provoke the Treasurer with that comment.

I mention these things because as we've talked over the last couple of years in debates on legislation sponsored by your department or in budget debates, I've talked about the absence and what I will claim to be a continuing absence of a comprehensive, pangovernment policy on science. I will say that you're getting closer. I think that the initiatives that will be bringing energy and agriculture and other research functions under one umbrella take us closer.

9:19

What I was really looking for in your business plans – and I have to comment just briefly on the exchange between yourself and my colleague from Mill Woods. Budgets themselves are very political documents, so of course there are politics involved in this discussion, but I think the essential point was: where are the linkages? Nothing in asking that diminishes the importance that our caucus attaches to appropriate science policy, including our celebration of the newly announced foundation. But building on that exchange, what I was looking for, to see evidence of real movement towards this across government co-ordination, would be some performance measures or even some strategy statements that said: these are the linkages.

[Mrs. Gordon in the chair]

We understand what our relationship is with Learning or with Justice or with Treasury, for example, and here are some strategies that we're going to put into place, and here are some performance measures so we'll know whether or not these strategies are appropriate. For example, I'm thinking of things in Learning, some joint performance measures. Same measure, same strategy, both departments looking at research inputs and outputs. We don't see that.

We don't see joint planning in terms of student retention. The goals and the strategy statements that I read – for example, under goal 1, "Increase the number of K-12 students who consider technology as a viable career opportunity." That's a great objective. Linking it to some of the strategies – unfortunately, the only performance measure that I can find in your business plan that links to it is the one that says:

Develop a measure showing the number of grade 12 students who have completed course requirements for entry into science and technology programs at the post-secondary level.

Now, that's a surrogate measure. I don't think it's a very strong one, and it's different again from those in Learning in terms of student retention and technology and career streams.

There could be some joint plans with Treasury. There is a brief discussion about tax policy. You know, certainly there are some things that this province could do that could be more aggressive when it comes to tax policy. So, again, to give evidence of that linkage and that sensitivity across government and that awareness that it has to be strategic and across government, I would have liked to have seen some things that say: yes, these are the tax-based initiatives.

In the last federal budget, for example, we saw a reduction in capital gains taxes. We saw a reduction in corporate taxes. There's been talk here in Alberta about perhaps reducing the small business tax or raising the threshold which defines what a small business is. Maybe we could look at some performance measures and initiate some things out of this department that would truly leverage the federal initiatives and build on what's possible, what's in the control of the provincial government, and put those right in the business plan in terms of targets.

We could also turn to Justice, which may not immediately come to mind as a department that you should be doing some joint planning with, but I would argue that with e-commerce comes e-crime with the challenges in terms of policing. We've just seen internationally some of the largest e-commerce sites in the world threatened and challenged by, we're told, a 15-year-old kid from Montreal, if we are to believe the FBI reports. Certainly electronic security, electronic signatures, fingerprinting, strategies in terms of enforcement, perhaps even definitions of crimes or interjurisdictional co-operation statements are all things that I would expect to see again that would give evidence of this awareness that it has to be right across the government. So when I offer the criticism that I'm still not seeing this, those are the kinds of things that I'd be looking for.

Let me ask you a question about goal 6.

DR. TAYLOR: What page are you on?

MR. SAPERS: Actually, before I get to goal 6, let me try to do this in some kind of order. I kind of mentioned goal 1 when I talked about the qualified workforce and some of the student initiatives, the K to 12 initiatives.

I look at goal 2, one phrase, one sentence. It's on page 192 of the big budget book. If you go down to the third bullet under Strategies, it says, "Leverage investment in the Alberta Research Council." That's a strategy tied to the objective of Alberta having "a quality science, research, and information and communications technology infrastructure." You've heard me talk about being a fan of ARC in the past, and that position hasn't changed, but I didn't quite understand what this meant. So if in your comments you could tell me what exactly you mean by leveraging investment in ARC. I know that ARC has its own business plan and its own set of strategic goals and objectives, but this wasn't really clear to me, and it didn't become clear as I read through the rest of your business plan.

Goal 6. I heard some of the previous discussion, and there was a good line of questioning from at least two other members of this committee in looking at goal 6, but what I heard I'm sure is not your intent. If it is, then it's new to me. My understanding has been that Innovation and Science is not simply the supplier of bits and pieces, that it's not a matter of just sort of being the public-sector CompuSmart. I could have picked Future Shop or any of the other suppliers, so I'm not putting in a plug here for one vendor or another. You're not simply a hardware or software consultant to

government. You know, it's much more than that. It's really presenting a leadership capacity. In fact, I think those words are used in your strategy statements. The question about the role of the department when it comes to providing technology to other government initiatives is, I think, much more than simply responding to requests for hardware or software advice. So if I misunderstood your comments, maybe you could elaborate on them a little bit and talk a little bit more about that leadership role that I believe is really behind goal 6.

Goal 7, "Albertans recognize the benefits of innovation and science." One of the key performance measures there is to "continue to develop measure on public perception of the benefits of innovation and science." The first thing I thought of was Tang. You know, when NASA was challenged years ago as to what the space program has contributed to everyday life in America, I think the answer from one of the administrators at the time was Tang, that they developed a powdered orange juice. You know, it seems to me we've come a long way since then, so when I see that one of your key performance measures under such an important goal is to "continue to develop measure on public perception" – I guess what I'm asking for is a progress report.

If I can jump from there to some of the other performance measures. Because so many of your performance measures in the business plan are really under construction, maybe you could give us performance report updates as these measures are being developed and as they're being field-tested. You know, I haven't counted them up – and we could do that exercise – but I believe that a majority of the performance measures are under development, and I understand that. I understand that it's new and it's new to this government. Maybe you could let us know what ideas you're testing, how they're being tested, where you're getting feedback on performance measures, and what you're using as baselines for comparison. At some point you're going to have to present the data, so you're going to have to say: here's where we started, here's where we hope to go, and this is the measurement of difference and how we know we got there.

I could make the same comments, you know, as I said, for so many of the other goals. I would hope that next year we're going to get to the discussion of performance measures and will be able to actually look back and say: "Okay. Here's where we met or didn't meet or exceeded the goal, and this is how we know. This is how we're going to change it."

Also, Mr. Minister, I have some questions for you based on the consolidated income statement for your ministry.

9:29

DR. TAYLOR: What page is that?

MR. SAPERS: I'm looking at page 197, again in the budget book. It's the consolidated statement. It's not in the budget detail. I have some questions that I'm sure are easily explained, but the answers weren't that obvious to me at first reading.

If you look in terms of transfers, the internal government transfers . . .

DR. TAYLOR: Is it page 297 or 197?

MR. SAPERS: Well, it's 197 in the spiral-bound book. I think it's called *New Century: Bold Plans*. It couldn't say "maintaining the balance" anymore because that was too close to the Liberal plan, I think; wasn't it?

DR. TAYLOR: I've got it. Okay.

MR. SAPERS: Okay. If you look at internal government transfers, I think I understand the difference there. There's a pretty big variance between last year and this year, but what I don't understand is the variance in transfers from the government of Canada. Budget 2000 is showing zero expected transfers in that line item. The forecast is \$150,000, and it's predicted to go up to \$1.6 million in 2000-2001. So I'm just wondering why that big swing and if there's some assistance that we can offer in terms of letting the feds know that maybe they've ignored Alberta in one regard or another. When I see a million dollar swing in transfers, I want to know why.

Also, the investment income. I'm wondering why there's about a million dollar difference there as well. When we look at the energy, research, and development expense, it seems to be a pretty huge variation as well, and then it continues to go down. I would have thought that with the consolidation that line item actually might go up.

So those are some general questions I have. I don't know how much time I have.

THE CHAIRMAN: We're down to about four minutes.

MR. SAPERS: We're down to about four minutes? Well, the minister could always take 20 minutes now. He could be the next person recognized, because we don't really have a global agreement on this within 20 minutes stuff. I would hope that he'd have a chance to respond to some of those questions, and since I only have a couple of minutes left, I'll leave it at those initial ones.

Thanks.

DR. TAYLOR: Great. I made some notes here as you were going through, so I will follow through with them. If there are things that I miss, if you would provide us some written questions after, we will get you answers for them.

Let me respond. First of all, you talked about goal 2 on page 192, "Leverage investment in the Alberta Research Council." You asked a question about that. From my department to the Alberta Research Council goes approximately, roughly, \$26 million a year. The question is: what is the leverage that we get out of those dollars to the Alberta Research Council? Unfortunately, Red Deer-South was supposed to be here this evening, but he got a stomach flu and was unable to attend. So I will comment on this a bit and then refer the question onward to him.

Last year the Alberta Research Council better than doubled the dollars that we gave them from private sources. That's one form of leverage. Also, there is the necessity for what I would call public-good research that the private sector will not support. I see that fundamentally right now in Alberta that is one of the roles of the Alberta Research Council. They have to have some funding to do that public-good research. There are a number of areas one might want to look at, maybe some environmental types of research that are so far away from commercialization but are necessary to be done and that a private-sector group will not sponsor, will not be a partner in it. So there is a necessity for public-good research.

With the science and research fund we average, as I said, \$3.89 for every \$1 that we invested last year, but that does not mean we're necessarily looking for that kind of leverage from the Alberta Research Council, because of the nature of the council and because of the fact that there needs to be this what I call public-good research being done.

I'll pass this on to the Member for Red Deer-South, who's the chair of the Alberta Research Council, and we will get him to provide a further response to you.

Goal 6. I think you mentioned us just being suppliers of technol-

ogy. I was referring to that in the sense of Wellnet only. For Wellnet we are only the supplier of technology. Health and Wellness determines policy and priorities for Wellnet. They come to us and say: can it be done? Okay? So we are the suppliers of technology only for Wellnet.

On the broader government perspective we are the group that provides the strategic direction and the policy, through the chief information officer, to all of government. The chief information officer is the leader in that area in providing policy, providing strategy, providing direction. He's the ultimate the buck stops with him guy when it comes to this particular area. As I said earlier, there is the Chief Information Officers' Council. Each department has a chief information officer, and they meet regularly to solve and deal with the issues. So it's not just him arbitrarily saying: this is going to be the policy; this is the way we're going to go.

THE CHAIRMAN: Excuse me just a minute. I'm at the will of the committee here. We did make some decisions at the beginning of this. Is it the wish of the committee to let the minister continue before I recognize the next speaker? We were sort of going back and forth, hon. Member for Edmonton-Glenora.

MR. HERARD: Yeah. Let him go.

THE CHAIRMAN: Okay. We'll start the clock again, and you finish off, hon. minister. Then I'll recognize Calgary-Egmont.

DR. TAYLOR: Okay. Thank you.

Goal 6. I think I've answered your question there.

The issue dealing with transfer of funds between the federal government and the government of Alberta. I would say that the federal government has not had a major presence in Alberta, for instance, with the National Research Council. They virtually have zero presence. In fact, I met with Art Carty several months ago, and on the advice of and after meetings with the university we had a very, very tough conversation with him. Art is the head of the NRC. Just this very evening, earlier – I think you were at the same function as I was at over at the Shaw Conference Centre – I had the opportunity to sit with Anne McLellan, who has been a good supporter of the science and research initiatives. The federal government is putting out a huge initiative in what they're calling genomics, what we're calling proteomics. They're going to establish five centres across Canada. After Toronto, we are recognized across Canada as the second leading centre in genomics in this country. Will we get one of the five NRC centres? I don't know.

9:39

I had the meeting with Ms McLellan tonight, and that was the topic of our conversation: how can you help us work with John Manley, work with Art Carty, to get one of these five centres here in Alberta. Now, she is very co-operative, recognizes the value, and has said that she will do that. But up to now, up to today, the federal government for whatever reason has been very slack in supporting science and research initiatives in Alberta.

I give you the example of the cyclotron which is going into Saskatchewan. I believe the federal government is putting \$60 million – I think it's \$63 million – into the cyclotron or synchrotron in Saskatchewan. I mean, it doesn't make sense for it to be in Saskatchewan because the science isn't there; okay? Maybe it should be in Toronto, maybe it should be in Vancouver, maybe it should be in Alberta, but it doesn't make scientific sense for it to be there. But that's where it's going. So there are political decisions made at the federal level on science policy and science investment.

What we need is some real action on behalf of the feds to see that we get one of these five centres, and I would encourage you, I would encourage Ms McLellan, I would encourage all of your colleagues to talk to your federal colleagues and say: "The science is here. We're recognized as the second in Canada. The science is here. This is where probably the second major centre should be." Because the centres apparently, from what we understand, are going to be funded at different levels. Now, if they give us the fifth centre, the fifth-funded centre, the lowest funded centre, it will be totally inappropriate to do that to us. Now, will they do it? I don't know. They funded Saskatchewan and Manitoba farmers. They didn't give us a cent for our farmers. So who knows where the federal government will go.

MR. SAPERS: But you don't want to make any political statements.

DR. TAYLOR: No. But I will encourage you to by all means encourage your federal counterparts to be sure that we get either the first or second funded centre in the country. That has to be in Alberta, because I can tell you that the synchrotron in Saskatchewan cannot exist without Alberta money. Saskatchewan has made it very clear to us that unless Alberta comes in and buys several light beams in that centre, they can't exist. They'll go broke. There will not be operating costs. The question is: how do we co-operate with Saskatchewan on the synchrotron? How does Saskatchewan co-operate with us on the genome project? I hope Saskatchewan recognizes the value of co-operation, and I hope the federal government recognizes the value of co-operation as well.

So those are a number of issues that we are dealing with. In regard to performance measures, there are a number of measures that I think are important simply because, as I stated earlier, they indicate the state of the innovation system in Alberta. We do not control those. For instance, the number of scientists and engineers in the province is very important. We actually have a chart on that someplace in here. I can't remember where it is offhand, but it is in here. We have more per capita engineers than any other province, more per thousand, I believe it is, than any other province in Canada, and that's an important measure of the innovation economy, because the innovation economy needs engineers. If you don't have the engineers, in particular – and that's computer engineers, electrical engineers, all kinds of engineers in various specialties – you will not have the science and the jobs in Alberta. So certainly there are some general measures in the innovation system that are important to note, although we do not control them.

I mean, we do not control in this department the number of engineers that come out of the University of Alberta or the University of Calgary. Hopefully we can provide young people with information so that they become more interested in science. But even as we go into the science awareness project which will start next fall – I mean, you did ask about that. We are presently drawing together, as we speak, the various organizations in Alberta having to do with science awareness, so that will include the Science Alberta Foundation, it will include the Alberta science hot lines. I don't know if you're familiar with those or not, perhaps if you have younger children; I don't have them anymore. The hot lines are where kids can phone up . . .

MR. SAPERS: Headquartered in Glenora.

DR. TAYLOR: Oh, perfect. You know all about it then, so I won't have to describe it.

There are private-sector groups – for instance, APEGGA has a science awareness program. So we're just in the process of identify-

ing all of the science awareness groups in the province. We will pull them together over the period of the next several months and develop a science awareness program.

Now, does that mean that more kids will actually take engineering at university? I can't say. Maybe they will. Obviously we cannot force kids, as much as we want science awareness. Even if kids are very aware of science, we cannot force them and say, well, you're going to do engineering, or you're going to do a BSc in biotechnology, or you're going to do an MBA in technology management. All we can do is make young people aware of the opportunities, make them aware of the excitement around science. For instance, this summer there's a science camp down in the Drumheller region at Dinosaur park. I think it's called Dinosaur park science camp or something along that line. We are funding that science camp this summer because it brings young kids in from Alberta and theoretically it gets them excited about science and what science can do for them.

Does that mean more of those young people will do engineering or a bachelor of science? I don't know. Even if they don't, it doesn't make it a nonvaluable program. Simply because they don't go into it from a professional perspective does not mean to say that it's not valuable. It's like being aware of the arts. Because I'm not a professional artist doesn't mean that I can't go off to the Citadel Theatre and enjoy the Aberhart play, that has just concluded.

MR. SAPERS: Did you see it?

DR. TAYLOR: Yeah, I did see it and very much enjoyed it. I must say that I did buy the tickets at the ticket wicket there on the very day of the play, so I bought them perhaps a little cheaper than I should have. Always being a fiscal conservative, you see, I try and do things as cheaply as possible.

Just because I'm not a professional artist doesn't mean that I can't go and enjoy the arts. Just because a young person isn't a professional scientist or doesn't go into science and engineering doesn't mean he can't be made aware of and understand and enjoy the benefits of science. I guess that's what I'm saying, but we still need to have measures of the innovation system, even if we do not control those measures, even if we do not control those outputs.

Now, cross-government. In fact, we are working with other departments. We have a management committee that meets with Learning's management committee as we speak, just starting to meet with them to develop measures to develop cross-government initiatives. Now, that's the first one that we're starting. We will start and obviously are going to work with the departments that are closest to us initially, so Learning is the obvious one to start with and get it up and running, see how it works, experiment with it, and see what we can do with it.

Certainly Justice is a very important department, as you pointed out correctly, as we move into security issues. I know that the Justice minister – I've had a number of conversations with him about security, and one of the issues we're dealing with that Justice will be closely involved with is electronic signatures. How do we use electronic signatures in this province and make sure they're secure, make sure you can access information through your electronic signature and that only you can do that and not me? We're going to need legislation on electronic signatures eventually. So it's a very, very important concept, and certainly Justice needs to be involved with that.

9:49

In the various areas where different departments are involved, we will certainly be working with the various departments. In terms of

Economic Development, we work very, very closely with Economic Development. As I said earlier – I'm not sure if you were here then – we have 10 staff that we share who work for both departments. It's a very unique relationship inside government, where you have staff who are co-operatively working for two departments and two deputy ministers. I'm not sure of the official title. It's a technology commercialization group headed by Mel Wong, and Mel Wong and his 10 staff members work for both departments. When the Minister of Economic Development needs to move forward with technology commercialization, that staff is there to help. So we have a very close working relationship with Economic Development as well.

So there are a number of cross-government initiatives already happening, and more will happen as we work through this.

You must remember that this department was just created in May of 1999. At that stage the Alberta Agricultural Research Institute was brought into this department. We are in the process of developing very close working relationships with the department of agriculture because some of the staff is still housed in the department of agriculture. Agriculture still has the research stations, so the question arises: what is the relationship between the Alberta Agricultural Research Institute, which is a research funder, and a research station, which is a research doer? It becomes a bit like the relationship with ASRA and the Alberta Research Council. The Alberta Research Council is a research performer. The Alberta Science and Research Authority is the group that determines science policy. That relationship has worked out, and it works very effectively.

As soon as we get a new organization like this AARI, then we're working on a new relationship. You know, what is the relationship of AARI to ASRA? What is the relationship of ASRA to the department of agriculture, of AARI to the department of agriculture? We can say the same thing about the Energy Research Council. What is the relationship of it to ASRA and to the department of energy? Just two weeks ago we had another group added to us, the forestry research council. We haven't even started, in a sense, thinking how the forestry group is necessarily going to fit in. Those are the questions we're dealing with. What is the relationship between the forestry research council and ASRA? What is our relationship to the department of forestry and the forestry research council? How does that relationship fit together so we have a system that is seamless and a system that works?

THE CHAIRMAN: Hon. Member for Calgary-Egmont, do you have a couple of questions?

MR. HERARD: I have a couple of observations.

DR. TAYLOR: Could I just ask a question? What is the time frame we're working on, Madam Chairman?

MR. SAPERS: We've got all night.

DR. TAYLOR: Oh, no.

THE CHAIRMAN: It's, give or take, around 10 o'clock. When those that want to ask questions have finished.

DR. TAYLOR: Okay. Well, if anyone wants to submit written questions, we will provide written answers.

THE CHAIRMAN: Calgary-Egmont.

MR. HERARD: Thank you, Madam Chairman. I remember when

the department was first started and there was no budget, there was no staff, there were people seconded from the research council, I believe, and here we are today. In sort of political/government terms not very much time has elapsed, because there are things that take forever to change and this is not one of them. So I want to congratulate you, I think, for being able to pull this off and to have brought some initiatives to this province that I think will pay tremendous dividends in the future. When we're in our rocking chairs, we can think back upon these years, and perhaps it'll be one of the more important things that have got done. I'm talking about the \$500 million endowment fund as well as the ICORE initiative and so on.

I want to go a bit further on what you brought up – I didn't realize you were involved in this – with respect to trying to attract our youth to consider careers in innovation and science and information technology, in particular the girls. Your deputy minister will have heard this speech about six times now, and I hope that one of these times he'll take it upon himself to get it done. I really believe that you can attract kids by using the technology that you are trying to be a proponent of, and I'm talking about, you know, a web site that would turn kids on to careers in information technology and science and math and so on. I don't know how many times, like I said – the deputy minister says that it's 10 times. I really believe that it's important to do that, because most of our students don't know what is available in this province. If we could celebrate the tremendous opportunities that are available in this province, showcase them on a site and turn kids on, as you said, in junior high or even earlier, then I think we could attract more kids to those sorts of careers.

I think there's even a more important aspect to all of this, and that's the mentorships that we could establish via the web with professionals in those particular careers who are willing to take on the mentorship of our youth all the way to the postsecondary system. What you've done, then, is you've established a relationship with those young people who are probably then going to have some loyalty to you and in fact perhaps even produce a brain gain instead of a brain drain. So I think it's extremely important to use the tools that are there and to start using the web. Because let's face it; we have to be able to reach every single student in this province, and you're not going to do that with a little program here and a little program there. So I'm just appealing to you and your deputy to think about this one again. I know that there are corporations out there who have made overtures to me that they're prepared to mentor in this area and establish relationships, so I just want to encourage you to maybe look at that.

DR. TAYLOR: Could I just quickly respond to that? I have just in the last month – it'll be quick, Madam Chairman – challenged my communications director, Val Mellesmoen, with this task. So that's how recent this is. Certainly, as I said, we are going to pull together everybody, all the different organizations, and we have started to develop a kids' web site. It's just in its initial stages. It started during Science and Technology Week, and it is focused on careers, but as I say, it's just in its initial stages. So we need to flesh it out and keep going. As well, we have an ASRA web site that is quite creative. But this whole awareness issue that you're talking about we are just starting to discuss now, and we need to move forward with it, which we will do.

MR. HERARD: Good. That's exciting. Thank you.

THE CHAIRMAN: The hon. Member for Medicine Hat.

MR. RENNER: I was going to move that the committee rise and report.

MR. SAPERS: Well, I have a couple more questions.

MR. RENNER: Well, my understanding was that we agreed that we would rise and report at 10 o'clock. It is 10 o'clock.

MR. SAPERS: There's no standing agreement on that.

MR. RENNER: Well, I moved that we rise and report.

MR. SAPERS: I think you're being recognized out of order if we go back and forth.

THE CHAIRMAN: Hon. member, we have for the last two hours worked very well going back and forth. I think everybody that indicated to the chair or the vice-chair that they wished to speak has done so. The minister did say that he'd put it in writing, that he would get back to you. You will have the opportunity in the House. The minister I think spent considerable time answering everyone's questions, and I think it's been good dialogue and good back and forth tonight. Let's leave it on a high note.

9:59

MR. SAPERS: It's not a matter of it being a high note or a low note. The fact is that it has been a useful discussion, and there's no particular . . .

THE CHAIRMAN: The point is two things. Everyone that identified they wanted to speak has done so and has had the appropriate time.

MR. SAPERS: I raised my hand and you didn't recognize me.

THE CHAIRMAN: I'm recognizing the Member for Medicine Hat. He is the one that is recognized, and I'm going to go with that.

Hon. member, do you want to repeat what you just said?

MR. RENNER: I move that the committee rise and report.

THE CHAIRMAN: All those in favour that the committee now rise and report?

SOME HON. MEMBERS: Aye.

THE CHAIRMAN: Opposed?

SOME HON. MEMBERS: No.

THE CHAIRMAN: Carried.

[The subcommittee adjourned at 10 p.m.]