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Chair

Mr. Brent St. Denis

Standing Committee on Industry, Natural Resources, Science and Technology

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● (1535)

[*English*]

The Vice-Chair (Mr. Werner Schmidt (Kelowna—Lake Country, CPC)): I call this meeting to order.

Pursuant to Standing Orders 110 and 111, we have the certificate of nomination of Pierre Coulombe to the position of president, National ResearchCouncil Canada, referred to the committee on Friday, December 10, 2004.

We have Dr. Coulombe before us this afternoon. Before we hear Dr. Coulombe, I have a couple of housekeeping items.

There is a motion to pass the budget for consideration of Bill C-9. We need to have a quorum for that. We also need a quorum, which is seven members, for the adoption of a motion after Dr. Coulombe has made his presentation and the questions have been asked. For those two items, let's make sure we have that. We don't have seven members now, but we do have four, which gives a quorum to hear witnesses. We will do that now.

Welcome, Dr. Coulombe.

By the way, I should tell you why I'm here and Mr. St. Denis is not here. You're probably all wondering. Mr. St. Denis is fogged in. He's in Sudbury and the airplane will not take off in the weather that is surrounding it, so that's why he's not here. If he can get here, it will be toward the end of the meeting, but I understand that he's still on the ground, so the chances are he will not be here for this meeting at all.

I'd like to now invite Dr. Coulombe to make a few opening remarks, and then I'd ask Mr. Duncan to ask the first set of questions and carry on.

Dr. Coulombe, if you don't mind.

Mr. Pierre Coulombe (As Individual): Mr. Chairman,

[*Translation*]

Honourable members of the Committee, I am pleased and honoured to appear before you today in order to answer your questions regarding my certificate of nomination to the position of president of the National Research Council of Canada.

This is the first time that I appear before a standing committee of the House of Commons. However, during the time I spent with the Quebec public service and over the course of my mandate as chairman of the board of the Centre de recherche industrielle du Québec, I had several opportunities to accompany the minister for Science and Technology in his appearances before the Quebec National Assembly's parliamentary commissions. I must say that I have always found these types of meetings to be very stimulating and I am sure that today will be no different.

I would like to use the brief time that I have been given today to give you a summary of my experience in the area of science and technology in Canada and to explain how that experience will serve me in undertaking the duties of president of the NRC.

First, my scientific and technological expertise is varied. I have a bachelor of science in physics engineering and a doctorate in experimental medicine. I spent a two-year post-doctoral training period pursuing my scientific studies at the Albert Einstein College of Medicine in New York and at the Faculty of medicine at the University of Minnesota. I was a fellow with the Medical Research Council of Canada, today known as the CIHR, and I was an assistant professor of medicine at Laval University. My years in research gave me the opportunity to understand and to assess the nature and scope of scientific research as well as the role it plays in the economic and social progress of countries and communities.

I left research in 1981 to work with the senior public service in Quebec where I participated for more than seven years in the development, implementation and management of the majority of the Quebec government's policies and programs in the area of science and technology. For example, besides the endeavours I listed in my curriculum vitae, I developed programs for cooperation with France and I participated in the development of a national science and technology policy involving the ten Canadian provinces and the federal government. If my memory serves me well, this policy was approved by the ministers of health and technology in 1986 in Vancouver.

My years spent in the senior public service in Quebec have helped me fully understand the success factors as well as the relative barriers involved in the development and implementation of public policies, particularly in the area of science and technology. More recently, as a recent member of the board of NSERC, and also as a member of the Canadian Biotechnology Advisory Council, I have had to think about science and technology development strategies for Canada, and analysed Canadians' perceptions about science and technology development.

[*English*]

In addition to serving the Quebec public administration, I have been president and CEO of CRIQ, a crown corporation providing industrial research support to Quebec SMEs. Each year CRIQ offers valuable services to more than 2,000 companies, as well as to public and private organizations. CRIQ is also a founding member of APRO, Association of Provincial Research Organizations. I was chairman of the board of APRO in 1996. In addition, CRIQ and NRC have maintained a productive collaboration in delivering the IRAP program to Quebec innovative companies.

As president and CEO of CRIM, Computer Research Institute of Montreal, I have defined and implemented basic and applied research programs involving both universities and industry. CRIM is a very good example of collaborative research projects having resulted in a significant transfer of technology to the benefit of its members, the Quebec and Canadian IT community.

[*Translation*]

Finally, for more than seven years, I was the president of a biotechnology company that was established following the research that was done by Dr. Michel Bergeron's team at the Centre de recherche en infectiologie at Laval University. During that time, I was responsible for the funding activities of the company, I established a board, recruited researchers and developed the research programs that led to the registration in both Canada and United States of two products that have radically changed the diagnosis of infections.

Over the past two years, I have lent my support to the establishment of a very broad population genetics project in Quebec, as well as the start up of technological companies based on technologies developed in universities.

[*English*]

Since 1916 NRC has played a strategic role in the development of science and technology in Canada. For more than eighty years now, NRC discoveries have contributed to improving the competitiveness of our country as well as the well-being of Canadians. Today, NRC is Canada's largest science and technology agency and it plays a major role in advancing Canada's innovation strategy.

Over the last 30 years, I have been involved with the three major NRC stakeholders—universities, government, and industry. I am convinced that my diversified knowledge and experience will be a significant asset to NRC.

I would like to conclude by saying that I am honoured and proud to appear before the standing committee. Today's competitiveness and our well-being are more and more based on knowledge. I strongly believe that NRC is a strategic asset to Canada. Therefore, I assure you of my complete dedication to the council's objectives as well as to NRC's outstanding people.

● (1540)

[*Translation*]

Mr. Chairman, members of the Committee, thank you for the time you have given me today and it would be a pleasure to answer your questions.

[*English*]

The Vice-Chair (Mr. Werner Schmidt): Thank you very much, Dr. Coulombe.

It was indeed a pleasure to hear from you. Your experience and academic qualifications are both wide-ranging. As you indicated, NRC is Canada's largest science and technology research institute, so we are very anxious to make sure that the president of this august group is in fact the best person we could possibly have for the job.

I would like now to turn the questioning over to the various members.

Would you like to start, please, Mr. Duncan?

Mr. John Duncan (Vancouver Island North, CPC): Thank you very much, Mr. Chair.

Mr. Coulombe, I want to take a tack related to your vision of where NRC might go under your presidency. In your comments with regard to educational institutions, you referenced the universities. My perception and that of people in the post-secondary field is that indeed the federal government in basically all things, including much more than NRC, focuses almost entirely on the university level and does almost nothing with the increasingly important college level. I was wondering if you have any thoughts on that.

I noticed a commitment certainly from the government to try to develop a research and expertise capability that would be translatable to small business. I think the universities are uniquely poorly qualified to work with small business as compared to our college campuses, so this is one area I'd like to see just what thoughts you might have in that direction.

Mr. Pierre Coulombe: It is an interesting question. The role of colleges in science and technology, and in transferring knowledge to small and medium-sized companies, is something I tackled when I was in Quebec, as a matter of fact.

I must say, first of all, that I am not well aware of the situation of colleges around Canada, but I do know that in Quebec, colleges play a more and more important role in supporting SMEs in the various areas of the province. Some of them are undertaking some research and development programs.

I also know that NSERC is preoccupied with the situation of colleges and the role they can play in R and D. If I'm right, they may have a program to sponsor college initiatives, which I believe is also true for CFI. I was on the CFI reviewing board last year, and if I recall correctly, we had a program for small universities and colleges.

Regarding NRC and colleges, and interaction between the two, I think colleges can play a role in terms of the clusters that I think NRC has established in various communities around the country. They can be one of the partners, like universities, depending upon the knowledge they can bring to the table.

I do recognize the fact that more and more colleges are actors in delivering S and T activities and services, and I would agree with you on it being primarily with small and medium-sized companies. I had to deal with the situation of colleges when I headed CRIQ. Most colleges had these offices for the transfer of technologies, and they were doing quite a significant amount of work with industry, specifically outside the Quebec and Montreal areas.

One thing we concluded at the time was that it was better to partner with these guys than to fight them. We found out that in, say, remote areas outside Quebec and Montreal, they would know better how to deal with the small companies in these communities than we would. Therefore, we initiated collaboration with them. It works quite nicely.

● (1545)

The Vice-Chair (Mr. Werner Schmidt): I'd like to just interject briefly, and then we'll have some more questions.

We do have quorum now, and there is something we need to do on almost an emergency basis. We need to approve the budget for the study of Bill C-9.

Mr. Lynn Myers (Kitchener—Wilmot—Wellesley—Woolwich, Lib.): So moved.

The Vice-Chair (Mr. Werner Schmidt): You'd like to hear the motion?

The motion reads:

> That the proposed budget for the study of Bill C-9, An Act to establish the Economic Development Agency of Canada for the Regions of Quebec, in the amount of $13, 850 for the period of February 9, 2005, to March 31, 2005, be adopted and that the Chair present the said budget to the Budget Subcommittee of the Liaison Committee.

(Motion agreed to)

The Vice-Chair (Mr. Werner Schmidt): Well, thank you very much, John. Please....

Mr. John Duncan: I thought you were going to tell me that my questioning was out of line or something.

The Vice-Chair (Mr. Werner Schmidt): No, no, your questions were perfectly in line, and you can ask many more. We just had to get things going here. I'd noticed that Paul had left, and I didn't want to lose the opportunity of quorum.

Mr. John Duncan: Thank you.

I'd like to pursue the vision questions a little bit further with you. We have this business model for NRC right now where you would have four vice-presidents reporting to you, one of whom was recently named and is responsible for something called renewal. A lot of people have some difficulty grasping what this vice-presidential appointment was all about; indeed, there's very little clarification on the NRC website as to what his or her job description is all about. Presumably, it would have to do with the mission statement or with where the organization's heading. So I guess I would view that as being a primary responsibility of the president.

My question is two-pronged. There was a five-year plan called Vision 2006, with five strategic outcomes, the first two of which were quite specific in terms of talking about assuming a leadership position in at least three new vital domains of scientific and engineering research, and establishing or contributing to innovation clusters in at least ten Canadian communities. The other three were basically written in such a fashion that it would be very difficult to gauge progress or not—though this may be an inappropriate comment to make.

Is the four vice-presidents business model and the direction the NRC is currently pointed in the direction you would retain, or would you like to see it go quite differently?

● (1550)

Mr. Pierre Coulombe: That's not an easy question for me to answer because, as you know, I'm not yet president of NRC. But what I could say is that I usually would like to have a necessary number of vice-presidents to make sure the job to be done is carried out correctly, be they four, five, or six vice-presidents.

The NRC is a large national organization, as you know. Personally, I don't think three vice-presidents is enough. I think the complexity of the workload of these people is quite large. I would like the vice-presidents to be leaders in their own areas and to make sure that the institution or responsibilities focus on leadership, accountability, and performance measurement. So I would imagine and expect that the vice-presidents, whatever their numbers might be, will deliver on these results.

Mr. John Duncan: Thank you.

The Vice-Chair (Mr. Werner Schmidt): I think we probably have to move along here.

Could you make your questions probably a little shorter, and the answer perhaps a little shorter, as well.

Serge.

[*Translation*]

Mr. Serge Cardin (Sherbrooke, BQ): Thank you, Mr. Chairman.

Good afternoon, Mr. Coulombe.

Mr. Pierre Coulombe: Good afternoon, Mr. Cardin.

Mr. Serge Cardin: There is in fact a Vision 2006. You were not around when it was established, but I am convinced that you will be able to join. You will probably make any necessary adjustments, in your future functions.

Let us assume that you will work with the spirit of this program called Vision 2006. However there will also be a post-2006. You are probably aware of the direction this plan is taking. I would like to know though if you have already started thinking about a post-Vision 2006, given the global context, the economy and the current need for innovation and inventions?

Mr. Pierre Coulombe: Thank you, Mr. Cardin.

First, I would like to say that the action plan for Vision 2006 is for the most part excellent.

It is very important that Canada have a large public research institution that is able to provide technological leadership within those scientific and technological niches that are in Canada's interests. I think that the key words here are “in Canada's interest” and “scientific leadership”. Within that context I don't think it is necessary to make the distinction between basic, applied or commercial research. Depending on the particular sector, that research may be basic, for example in the area of nanotechnology. Research may also involve the development of technologies and even commercialization, for example in the construction or productivity areas.

I think it will be very important that future NRC action plans provide leadership. The NRC must be a leader in the niches it will select. These niches have to be relevant for Canada, and when I say relevant for Canada I am not saying they should simply be relevant for Canadian industry: relevant can mean for Canada as a country. Let's take for example what is often called big science projects. These projects are of more interest for Canada than they are for Canadian industry. The NRC has to set its priorities according to these criteria.

Regardless of the plan we choose, we also need performance measurement tools. We need to be able to obtain results and compare them with those of similar organizations. This is called benchmarking. We also have to be accountable.

I would like to develop the NRC's future action plans according to these broader principles. Of course, I am also interested in the whole area of governance because for several years now this has been an issue of common interest and of accountability towards shareholders, in both the public and private sectors in Canada. In the NRC's case, the shareholder is the Government of Canada. We must therefore be accountable.

● (1555)

Mr. Serge Cardin: We know that the NRC has a sizeable budget. The NRC, of course, is here to serve Canada.

How do you think its mandate should be broken down? Should it be by province, by area of research, or even by region, given that particular regions have particular areas of industrial interest, whether that be in the area of health or otherwise. Do you think the NRC's mandate should be broken down differently than it is today?

Mr. Pierre Coulombe: First, as you know the council is present in all Canadian provinces. There are already institutions there. I don't see why they would be closed or why their activities would seize. I think that a regional spread of the NRCs activities is important. I come from Quebec and when I was a civil servant, I was very much in support of regional distribution. I think that this is important because knowledge is not only located within Canada's national capital, it is spread throughout the Canadian territory.

Secondly, there are areas that are more conducive to doing certain types of research than others. Take, for example, research in the area of marine science or oceanography. Downtown Toronto would not be the best choice for that. I would think that the maritime provinces, the eastern or western provinces that border on the ocean would be a better choice than downtown.

There are other sectors that may involve industry in the future and in those cases we might be better advised to locate our infrastructures where the future industry will be located; that would make collaboration with those people easier. In other cases, we may choose to go where the academic expertise is located.

I don't think there should be a religion. It should be based on a business plan and on the advantages of having infrastructures and programs in one Canadian community or another. I certainly think that the council's Canadian role is important.

Mr. Serge Cardin: Mr. Chairman, do I have any more time?

[*English*]

The Vice-Chair (Mr. Werner Schmidt): You have time for one short question.

[*Translation*]

Mr. Serge Cardin: Earlier you were talking about pure, applied and perhaps commercial research. Do you think that the NRC may be increasingly asked to do the type of research that will lead to applicable results, especially results that could be commercialized, for the industry and enterprise to stand out.

Mr. Pierre Coulombe: I think that when you are considering the activities of a research centre as important as the NRC, you need to see it as a serie of assets under one management. From that point of view, I would obviously not recommend that 100% of the council's activities be basic research, because I don't think that the benefits for Canadians and for Canadian industry would be significant enough to keep the industry's support. I prefer to look at this in terms of sectors. I think that the bulk of the council's activities should be in the area of research and experimental development, with a view to transferring those technologies relatively quickly to the relevant industrial sectors.

However, once again, I think the issue is where we are in terms of our expertise. If you were to ask me if we are in a position to commercialize today in the area of nanotechnology, I would tell you that there is nothing ready for commercialization because we are still developing our expertise in this area. We are at the same point in nanotechnology today as we were in biotechnology 25 years ago. This area holds great promise. The advantage today compared to 30 or 40 years ago is that technology is progressing very quickly and, in some industrial sectors, we can move very quickly from basic research to a commercial product.

[*English*]

The Vice-Chair (Mr. Werner Schmidt): Mr. Myers.

Mr. Lynn Myers: Thank you very much, Mr. Chair.

Dr. Coulombe, first of all, I want to thank you for appearing today and for your opening comments. I found them very instructive. Based on those and based on other knowledge I have of you, I want to congratulate you in terms of your long and distinguished career, not only in the public service, but in the private sector as well. You should know that you can be very proud of your many accomplishments and achievements.

I happen to agree, Mr. Chairman, with those people who say Dr. Coulombe is very well suited for this position, based on his experience and expertise and background.

I wanted to ask you, sir, whether or not you thought the NRC, which I consider to be a very important body in the country, is getting the kind of funding required. Is it getting the kind of money and resources needed in a day and age when, it seems to me, that is a very important area that is of note and worthy of support? I'd be interested in those comments initially, and then I'll have further comments and questions.

● (1600)

Mr. Pierre Coulombe: It's difficult for me to give a precise answer to your question, because I am not on the job yet. From what I can recall from past years, I believe NRC's budget has been increased from time to time by the Government of Canada, specifically for the cluster initiative. Something that I read on the website as part of the public information is that NRC has been able to implement a lot of technology clusters across the country, almost fulfilling its objective of establishing one in ten different cities in Canada.

The right amount of money that NRC can get to fulfill its missions is always a difficult question. I think it comes back to relevancy. Is NRC proposing to the government programs that are relevant to Canada, and do these programs provide leadership for the country? These two words are very important.

If the plan of action is relevant, I would imagine industry across Canada would most likely be supportive of that initiative. Therefore, it's very important for the council to have close links with industry and the various stakeholders in order to make sure that what it is proposing to the government makes sense, and that it makes sense to the community and will therefore contribute to improving the wider competitiveness of Canada's industry or the leadership position of Canada as a science and technology country, either nationally or internationally.

Does it require *x* amount of millions of dollars or *y* amount of dollars? For me at this point in time, it would be difficult to answer your question correctly. What is sure, though, is that we are moving in an economy that is more and more based on knowledge, and we have to face that situation. Otherwise, our competitors will gain market share from us. It's as simple as that.

I believe the government understands that position, and if I were to quote what has been the position of the government over the last years, I think it has been very supportive of research and development in the country. So I would hope that by bringing to the governance office sound proposals that require increases, then increases will be given to the council.

Mr. Lynn Myers: Dr. Coulombe, let's talk about relevancy and leadership for a minute. I'm not interested right now in the short term, because in the short term I suspect there will be a bit of a learning curve for you. But in terms of medium-term and long-term relevancy and leadership, where do you see yourself taking NRC?

Mr. Pierre Coulombe: As I said in my introductory remarks, I think that NRC is a strategic asset to Canada, specifically taking into account, as we have observed in this country over the last two or three years, that there's a slight decrease in the proportion of research and development that is carried on by industry.

It's a funny situation Canada's in. It has improved over the years, but it's a situation we have been facing for almost decades. At NRC, in that sense, the vision is more medium and long term. It means that you have to involve NRC in enabling technologies that will last more than two or three years. By doing that, new areas such as nanotechnologies, biotechnologies, manufacturing, optics, and so on are areas where you can develop enabling technologies that in the long run will benefit the industry. Maybe not today, maybe not tomorrow, but in the mid-term and long term, they will benefit the country.

It does come down to the previous question. Does NRC do basic fundamental research or applied research? I think it's irrelevant. If NRC chooses to be in a sector, it has to be in the sector where the science is. Again, with nanotechnology the science we have is the state of the science. In other areas of NRC activity we might very well be in the area of developing, implementing, transferring the technology to the industry. As a matter fact, that developing of basic research is as important in the long run.

So I would say NRC must maintain a balance. To use an investment comparison, it's like a portfolio. You don't want all of your assets in one share type. You want to be diversified in a large spectrum of technologies or activities so that the return to the country is not measured in terms of 5% or 6% ROI, but in terms of what it is that we have accomplished, so that we help improve the competitiveness of the industry in Canada or contribute to training highly qualified personnel or improving the leadership of Canada internationally.

That's the way I see NRC being able to solve immediate problems of the industry—by being well prepared and being in advance of the immediate needs of the industry, so that once these needs come, answers will be provided. If you're not preparing for the future, once it is the present you're not ready to solve the questions anyway, so you have to go somewhere else. I would not like that to happen at NRC.

● (1605)

The Vice-Chair (Mr. Werner Schmidt): Thank you very much, Dr. Coulombe.

We'll go on to Mr. Chong now, please.

Mr. Michael Chong (Wellington—Halton Hills, CPC): Thank you, Mr. Chair.

Thank you, Dr. Coulombe, for appearing before our committee. I have a number of questions. If you could keep your answers somewhat brief so I can get them all in, I would appreciate that.

My first question has to do with governance, and in particular with the relationship of the Governor in Council to NRC. In last year's Auditor General's report one of the deficiencies that was pointed out was that the Governor in Council acted too much like an advisory body, or an advisory board, as opposed to a Governor in Council. I'm interested to hear from you what your plans or your ideas are with respect to changing that, so that the Governor in Council is more of a Governor in Council, has more of a hands-on role, and that the relationship between the Governor in Council and the NRC is more clearly delineated.

Mr. Pierre Coulombe: Yes, thank you. I can answer this question quite rapidly, as a matter of fact. I've been involved in governance issues in the past. I sponsored studies on governance at CRIQ, for instance, and even the small companies—I was a CEO—would like to have a governance structure very close to public companies. So I would support that. I really don't know what the governance issues are at NRC, but I will make every effort for governance issues to be clear. At a large organization like NRC, we respond to criteria that we see in public organizations.

Mr. Michael Chong: The other question I have has to do with big science projects. One of the criticisms out there over the last number of years is that there isn't a single presence, a single point for big science projects to deal with in terms of coming to the federal government for funding, whether that be at the startup phase, capital costs, or for ongoing operational costs. It's my understanding that there's currently a framework being developed by the NRC and NSERC to come up with a solution so there will be a single point of contact for large science projects to come to for funding and to have a single point for approval and what not.

I'd be interested to hear what your ideas are on this, because it's something you'll probably be tackling when you take on your role.

Mr. Pierre Coulombe: I'm sorry, but I'm not aware of this document. Although I am on the NSERC board, it has not been discussed on the board.

I would support initiatives by which big projects would be handled under one umbrella. I think once we decided to get involved in big science, it is important that we handle it correctly. I don't know what the best of way of doing it is, but I think it has to be done.

● (1610)

Mr. Michael Chong: The other question I have has to do with the commercialization of research. In the government's throne speech last year one of the priorities highlighted was for the NRC to better engage in this small business of the commercialization of research. In other words, small business did not have the resources to conduct research and development and the NRC would fill this gap by conducting that research and commercializing it on behalf of small businesses.

Any ideas as to how that mandate could possibly be carried out?

Mr. Pierre Coulombe: I'm not sure I understand. Do you mean that small and medium-sized companies will transfer their research and development activities to the NRC, where they will be realized?

Mr. Michael Chong: I think it's more that small businesses simply don't conduct research at all. Many of them don't have the resources to even have an R and D program. It's a gap that needs to be filled.

One of the items in the throne speech was to have the NRC fill that gap by funding research, or by conducting it itself on behalf of small business, with an eye to commercialization.

Mr. Pierre Coulombe: If I am right, the NRC is already funding research and development in small companies by the IRAP program that provides granting for SMEs to conduct research themselves or to use the expertise of third parties to do it.

Mr. Michael Chong: Related to that, I'd be interested to hear what your views are on the Technology Partnerships Canada IRAP program for the small to medium-sized enterprises, and what strengths it has, what weaknesses it has. Would you see anything changing in the IRAP program?

Mr. Pierre Coulombe: First of all, IRAP is a program that has been going on for more than 60 years. Coming from the industry and having worked at CRIQ, where we hosted the majority of people responsible for IRAP on our premises, I think IRAP is a well-received program across the industry community, specifically with small and medium-sized companies.

Maybe there are changes that could be made. I don't have any suggestions at hand that I can provide to you. But from the industry point of view, I must say that IRAP is a well-regarded program. I have a tendency to say it's not broken, so don't fix it, or something along those lines.

Mr. Michael Chong: My last question for you is just a very general and broad one. What broad ideas do you have for the NRC in terms of what you think should be emphasized and what should be de-emphasized over your five-year mandate?

Mr. Pierre Coulombe: Well, it's difficult for me to say what should be de-emphasized at this point in time. It is possible that some activities are less relevant and should be replaced by other more urgent needs.

I don't see the NRC as something that has to be fixed because it is broken. I think it's a very good organization, after all. I'm fascinated by the discoveries this agency has made over its long history. One comment I might offer is that this is not well known. A communications strategy may be in order so that Canadians realize that the NRC is doing great things for them almost on a daily basis.

Therefore, I don't see the NRC as an organization that is moving upside down and needs to be fixed. I think you need to adjust the focus from time to time, and put the emphasis where the action is, without getting out of areas that may be not in the current newspapers or very popular but may be needed for this country.

The Vice-Chair (Mr. Werner Schmidt): Thank you very much, Mr. Chong.

Do you have another question?

[*Translation*]

Mr. Serge Cardin: I would simply like to congratulate Mr. Coulombe on his nomination.

Thank you, Mr. Chairman.

[*English*]

The Vice-Chair (Mr. Werner Schmidt): The next questioners will be Mr. Savoy and Mr. Pickard.

Mr. Andy Savoy (Tobique—Mactaquac, Lib.): Thank you very much, Mr. Chair.

Thank you for coming, Mr. Coulombe.

I have a couple of questions.

In doing our industrial strategy exercise, we know that we face a serious deficit in terms of productivity with the U.S. We're not bad globally, but in terms of the U.S. we face a deficit. I think we're doing a fair job, at least on the R and D side with the R and D tax credit and IRAP, which is very supportive, especially of our small and medium-sized enterprises, and with TPC, which certainly offers incentives on the R and D side. We know that we face an investment problem in terms of R and D from our private corporations in Canada, but it is something on which we are making movement.

But when I look at productivity, I look at two types of innovation. One is our academic R and D type of innovation and the other is shop-floor innovation. I've always been a very big fan of empowerment and quality circles and looking at continuous improvement on the shop floor. It is something we may not be tapping into in terms of the innovation of our employees on the shop floor, or grassroots innovation basically. I don't think of this just in terms of products, but also in terms of processes. Those on the shop floor are the ones who know the processes; they are the ones who could certainly help improve them.

Do you have any thoughts in terms of what types of incentives, programs, or even advice we could provide our private sector in terms of fostering an environment of grassroots innovation and quality circles empowerment?

● (1615)

Mr. Pierre Coulombe: Thank you for your question.

First, I must say that when I was president of CRIQ, we had a large division responsible for implementing in the small and medium-sized companies all kinds of the activities you mentioned, *kaizen*, productivity and quality circles, and so on. What I can say is that in the country already a lot of private sector activities are going on offering various services, quality circles, ISO certification, quality management programs, and improvement in manufacturing. There is a lot of private expertise in this area in Canada and consultants of all kinds are offering these services to industry. So I don't foresee large organizations like NRC being involved deeply in that, because you would rapidly face the problem of competing with the private sector, which we don't want to do, basically speaking. I fought that issue for five years when I was in Quebec. Public organizations were pioneering work in the seventies and eighties and introducing these productivity management tools to the private sector, which catch up very well as a matter of fact.

So I don't know what we could do to help. From the research and development side, I think we could work on productivity issues based on manufacturing techniques, using new technologies for manufacturing products cheaper, faster, at lower manpower costs, with just-in-time technology, and so on. I guess the institute for advanced manufacturing should be tackling that at NRC. This is another area where you can improve productivity by providing better manufacturing tools based on new technologies.

But for quality circles, *kaizen*, and ISO certification, what I would call the soft items of productivity, there is a lot of expertise around the country that can help. Whether the government can play a role in that is another question.

Mr. Andy Savoy: My issue is how do we promote grassroots innovation on the shop floor? Quality or ISO is a totally different thing; an ISO 9000 or ISO 14000 is different from empowerment of employees, whether that be through unions or corporations. I'm talking about the concept that employees are one of the most valuable resources we have, and how do you empower them to engage in the process, improve the process, and improve productivity? I'm talking about this whole concept, as opposed to quality, which we've come through with *kaizen* in the seventies and eighties and with Deming in Japan in the forties and fifties, which the U.S. brought on. So I know the history of *kaizen* and total quality management.

But there is an untapped resource, if you will, in terms of our employees. Getting them motivated and engaged in productivity improvements and process improvements on the shop floor is critical. How we could do that would be interesting. That's a debate for another time, but how we can do that I think is a challenge we have to meet as a government.

You talked about clusters and the necessity to reinvest in clusters. I'll go back to IRAP because I feel it works as it deals with the shop floor in a lot of instances. Do you see more involvement of IRAP or increased funding as a necessity? What is your vision of IRAP and the role it will play in the future within NRC?

● (1620)

Mr. Pierre Coulombe: First, I think IRAP is playing a very important role altogether. Unless I'm wrong, it may be the only non-reimbursable contribution a company can get to develop a research and development program besides tax credits, which you get afterwards. I think IRAP is a very important program. As I said before, it's a program that is very well respected in the community. Industry likes IRAP very much. They like the assistance, not only the dollars but the assistance the ITA guys provide to the SMEs in guiding them in the research and development programs and suggesting this and that to improve the process.

I don't know if IRAP needs more money today, because frankly I don't know how much was spent last year. Did we need more money? Could we have responded to more companies but because of a lack of money we had to retreat? I don't know, but I would think IRAP is one of the best programs for supporting SME research and development in Canada. I would be supportive of increasing the budget of IRAP if need be, which I personally don't know because I haven't looked at the numbers.

Did we lack money last year? Did we return money to the government? Did we spend everything that was allocated to IRAP? I just cannot answer this question at this time, but quite frankly, if there were more demand than we could satisfy, I would support an increase in the IRAP program as well.

The Vice-Chair (Mr. Werner Schmidt): Thank you very much.

I think I indicated Mr. Pickard, but Paul, you indicated you'd like to come in the order of rotation. You should be in there, so Mr. Pickard could follow you.

[*Translation*]

Mr. Paul Crête (Montmagny—L'Islet—Kamouraska—Rivière-du-Loup, BQ): Good afternoon, Mr. Coulombe. I would like to hear your views on a situation faced by people in the regions. By way of example, I am going to speak about a region which lies near Quebec city, Chaudières-Appalaches. Officials from the Economic Development Agency of Canada for the region of Quebec told us that this region is amongst those with the greatest need for investment in technological research due to the fact that it already has sound manufacturing infrastructure. However, without investment, this infrastructure could well become obsolete, if it is not already the case.

Do you think that the National Research Council of Canada, in partnership, of course, with CFDC, Industry Canada and so forth, could target regions such as Chaudières-Appalaches, which have specific needs? I know that we already have IRAP, and that it is producing results.

Within the context of your future mandate, can you tell me whether this issue will be on your agenda? I have used Chaudières-Appalaches by way of example, but this is a reality faced by several other regions in Canada as well.

Mr. Pierre Coulombe: I think that I mentioned earlier that the National Research Council of Canada adopts a thematic approach. This approach involves helping communities to develop science and technology activities. I come from the Quebec region, which is why I am familiar with the Chaudières-Appalaches region that you mentioned. In terms of industry, it is a thriving region boosting diversified businesses. Some of these businesses carry out a great deal of research and development and innovation while others, which are more like the type of business that we were discussing earlier, are small manufacturing businesses which, in general, do not undertake research. For these smaller businesses, a program such as IRAP can be a good first step.

Furthermore, in the Chaudières-Appalaches region, as in all of the greater region of Quebec, there is a great deal of research infrastructure already in place. Amongst others, it can be found at Laval University, at the National Optic Institute and in the colleges that we mentioned earlier. The Lévis-Lauzon Cégep, for example, is very involved.

Could the Council itself take concrete measures? That remains to be seen. In Chaudières-Appalaches, as in any other region, it would have to be determined what resources are available in the community. It would be particularly important to determine what knowledge resources were available. Is there a university? Is there a dynamic and thriving college? Are there businesses which would be able to implement the technology and work out how it would be best used. As we all know, laying down the bricks and mortar does not guarantee success.

To start with, we could have people in the regions explaining what the NRC has to offer. That would be an achievement in itself. I firmly believe that the NRC's work is not well enough known in Canada. There is certainly work to be done in terms of communication. People from IRAP could serve as excellent communication tools, as could those from the Economic Development Agency of Canada.

There is a need for partnership, but that will not always result in infrastructure.

● (1625)

Mr. Paul Crête: I apologize if some of my questions have already been asked. I had to step out of the meeting.

In light of the globalization of markets, and in particular with the development of China and India, do you think that, within around 10 years, the National Research Council of Canada will become involved in ensuring that our businesses remain competitive? Although they may not be competitive in terms of salary, they could be by other means such as niche markets, computerization, and automation. Would it be possible to take on such a role within the scope of your mandate?

Over the past 10 years, a lot has been accomplished in terms of the new economy through groups such as Technology Partnership Canada and so on. However, some traditional sectors seem to have some momentum but now need a serious boost.

Do you foresee possibilities on that front?

Mr. Pierre Coulombe: You raised an important question. There is no doubt that the rising start of countries such as China, particularly in certain industrial niche markets, is hurting not only the Canadian economy but also the European and American economies. It is a fact of life. It is difficult for us to be competitive with the Chinese in a number of industrial fields. It is clear that, for the Canadian industrial sector, our strength lies in knowledge, research and development, and implementing new ways of using technology in more traditional sectors. This gives us an edge which countries such as China do not yet have. However, we cannot kid ourselves, they will soon catch up.

I feel, therefore, that the Council has an extremely important role to play, nor only in the new economy and nanotechnology, but also in the traditional sectors of the economy. Something that I did not mention earlier is that, in my opinion, the notions of high tech and low tech are meaningless. It is old technology, and that technology has to be applied to the various industrial sectors. While the manufacturing sector may not require nanotechnology, it certainly does require sophisticated production technology of the sort that companies themselves cannot develop, but which the NRC, working for the community as a whole, can provide.

Mr. Paul Crête: If we broaden our horizons, the textile industry, for example, could become a partner industry to the biotechnology and geotechnology sectors. People are already talking about clothes made in textiles which could be drug products. I am sure you would be open to that.

Mr. Pierre Coulombe: In my mind, the notion of high tech and low tech is meaningless. It is about finding the right technology for the problem we wish to solve.

Mr. Paul Crête: I wish you a successful term in office, Mr. Coulombe.

Mr. Pierre Coulombe: Thank you.

[*English*]

The Vice-Chair (Mr. Werner Schmidt): Thank you very much, Dr. Coulombe.

We'll now go to Mr. Pickard, followed by Mr. Trost.

Hon. Jerry Pickard (Chatham-Kent—Essex, Lib.): Thank you very much for coming, Pierre, and for spending this time with this committee in order to give us a better idea of the direction in which we're going.

Coming back to some of the direction Mr. Crête was dealing with, I have a lot of difficulty with the fact that we're losing low-skill-end jobs quite dramatically. We're really not targeting those as Canada's future. We're targeting research and higher-skill-level jobs. They certainly are the primary goal of the National Research Council as I see it.

In looking at that, how do you see Canada moving into that higher research, that higher-skill-level job area, and what strategies can you use, as National Research Council head, to make Canada more competitive and move forward? Or do you think what has been happening in the National Research Council is at this point satisfactory to get us onto that world-competitive base?

Mr. Pierre Coulombe: Thank you for your question.

First of all, I think NRC has been very much instrumental in improving on the area you just mentioned, developing a new set of technologies, new areas to improve competitiveness in. The important thing would be to transfer this knowledge to the industry and have the reservoir to capture these new technologies and create jobs at the higher end of the spectrum—the new economy.

So there are a lot of jobs to be done to make sure that.... You know, it comes to the area of relevancy. If the activities of NRC are relevant, meaning being developed in collaboration with the industrial sectors, by working with the industry in collaborative research programs, for instance, you are almost making sure that what you are developing will be used by these industries. Once they use it they can start developing their own R and D and hiring more and more highly qualified personnel.

I saw it when I was at CRIQ in the 1990s. In the 1980s, CRIQ was basically doing all the research for the small and medium-sized companies. We were doing a great job. We were making a lot of money at that time. It was the golden age for that organization. But when we went to advertise the fact that these companies should start to hire engineers and scientists, they did precisely that. They hired engineers and scientists, and after a couple of years our revenue was going down. Why was that? Because these companies said, “Why go to CRIQ? We can solve the problem ourselves.” This was, as a matter of fact, a very good sign that the industry was catching up. They did not rely that much on our organization; they relied on themselves.

The problem was that we did not catch up with the industry. We continued doing much of the same thing, and we were losing ground. The companies didn't want to come to our organization; they said we could not provide anything substantial to them any more, that they knew more than we did.

That should not happen to NRC, for instance.

● (1630)

Hon. Jerry Pickard: In some ways I certainly agree with that. I see the auto cluster as the leader, moving forward in a set of technology, jobs, and clusters that make that industry a world leader. There are a couple of points in North America where they're very significant. Or I see the greenhouse industry, and their technology and science seems to be moving relatively independently of a lot of things. The cluster of Ontario and B.C. to Holland seems to be the connection.

How can we better develop those kinds of relationships? It may not be in the auto industry or the greenhouse industry, but what industry should we be focusing on? Where should we be moving in order to develop that cluster of knowledge that will help Canada to move forward?

Mr. Pierre Coulombe: Well, you've mentioned the automotive industry, but let's speak a little bit about the pharmaceutical industry in Montreal, the big cluster that we have. BRI has been very instrumental in developing that cluster. I come from this industry, and I've been in this industry for quite a while. What happened in Montreal was primarily the fact that BRI was there. A lot of foreign companies came to Montreal because of that very institute. They knew the knowledge they needed would be there and they could count on that.

So clusters are a very interesting way of tackling the problem. In Montreal we are gathered because you have four universities, you have a lot of pharmaceutical industries, and NRC has been very instrumental. You have an incubator there. A lot of small companies in the biotech area in Montreal were developed at NRC. Therefore, you have the instrument, you have the people, and you have the capital. You have the whole recipe for success there. What we must do is try to replicate that in other parts of the country in other areas in which Canada can play a leadership role in science and technology.

Obviously, in some of those areas the industry will be lacking. Take the example of nanotechnology. There are not that many nanotechnology companies today. But 25 years ago, in 1980, there were not that many biotech companies there when the BRI was created. So if we put in the infrastructure, bring in the capital, train people, and develop knowledge that can be translated in the industry into products, you will see this cluster grow.

Unfortunately, in science and technology, as well as in innovation, you cannot do these things over the weekend. It takes some time before you start reaping the results. You know, overall a cluster approach would take 10 to 15 years to materialize into significant and sustainable development. That's the reason you cannot invest for just two years, or five years, and expect great progress and great results. That's just not the way it works.

It would be nice if it were otherwise, but basically speaking, science and technology and innovation take time. It depends on where you are in the knowledge.

● (1635)

Hon. Jerry Pickard: I have one final question.

We have biotech and health. We have auto. We have—

Mr. Pierre Coulombe: Aerospace. We have manufacturing. We have—

Hon. Jerry Pickard: Do you see some new areas that Canada can enter into and be successful in that aren't the standard Canadian industries, or do you think that expanding the standard Canadian industries is the direction to go?

Mr. Pierre Coulombe: It's difficult for me to name a new area where Canada might be, because it's a more complex issue than I can provide answers for today.

Right now, in the petroleum industry, we see big changes. Twenty-five years ago collecting oil from sand was very expensive. You could not do it. Today, at $40 a barrel, or $50 a barrel, that makes sense. But in order to be sustainable in this area—getting petroleum out of sand—you obviously need to develop technologies. This is the only way you will improve on your output. You will be able to produce a barrel of oil cheaper, cheaper again, and cheaper again. Five or ten years ago, it cost $40 a barrel to get oil from sand. Today, I've been told, it costs $15. Tomorrow it may cost $5. But from $15 to $5 is going to rely on technology. We're going to have to improve that. That may be an area of interest.

A lot of the economy of Canada is based on natural resources. A lot of technology can be applied there, very fancy technology that you cannot imagine. Even nanotechnologies or biotechnology can play a significant role in the renewal of natural resources. That may be an area we can pursue, because it's based on our assets.

The Vice-Chair (Mr. Werner Schmidt): Thank you very much, Mr. Pickard.

Mr. Trost.

Mr. Bradley Trost (Saskatoon—Humboldt, CPC): I also want to congratulate you. Your résumé looks very impressive. I'm sure you'll do an excellent job at the NRC. I apologize if I cover a little bit of the same ground. My friend Paul and I were speaking on a piece of legislation in the House, but hopefully I'm not covering any ground that was covered earlier.

My first question would be, what changes would you implement at the NRC? I've broken it down into roughly four specific areas. What changes do you think possibly should happen in management, resource allocation, personnel promotion, etc....? We'll just go from there, with those three. I know you haven't taken the job yet.

Mr. Pierre Coulombe: It's a difficult question to answer.

Mr. Bradley Trost: At the outside, you will have some idea. Remember, this is only a couple-minute exchange of broad strokes, not details. I'm not asking specifically.

Mr. Pierre Coulombe: I have five principles that may factor into the answer.

One is leadership. Whatever we want, leadership is important.

Focus: NRC's activities must be focused on the areas we define, but we must define areas and focus on these.

Accountability: What's very important at NRC is accountability to Parliament and to this committee, as a matter of fact.

Performance measurement and benchmarking: I would say I believe that in the NRC organization, the executive directors of the institute have a leadership role to play because they are basically the ones present in the various communities where NRC has activities. Therefore, their leadership is basically responsible for the success or the failure of NRC. It's not only the president who can play a leadership role from St. John's to Victoria, Edmonton, Calgary, Winnipeg, etc. I certainly count on the leadership of the executive directors of the organization when we are present in the Canadian community. It is very important that these guys have leadership, they have focus, they are accountable, they do not object to performance measurement, and they deliver on the objectives.

Mr. Bradley Trost: I think that was fairly well answered.

● (1640)

Mr. Pierre Coulombe: Thank you.

Mr. Bradley Trost: It went right to the point of what I was going to.

I have another question. I'm sort of curious as to what relationship you view the NRC having or developing relative to where they are now with various outside interest groups, etc. I'm thinking about things such as universities, industry, scientific associations, etc. Maybe you think the situation is fine now. How would you like to modify? Are there specific groups you want to reach out to? With your broad experience, coming from two or three different directions, I wonder if you might elaborate on any views you have on that.

Mr. Pierre Coulombe: First of all, I think it is very important. Reading from a website at NRC, I understand that each institute and advisory board is very important, because these advisory boards are regrouping people from the industry, from the universities. But if you look at the spectrum of activities of the NRC, you very much need to be connected to the industry in Canada in order to make sure that what you are doing is relevant to that community.

On the other hand, I don't believe the NRC has the scientific capacity in-house to answer all of the questions that may be raised by the industry. Therefore, it appears to me that it is important that the NRC be connected to the university community around the country, in order to build up collaboration and maybe to transfer the needs of the industry to the universities, because the universities may be more capable of answering these questions. So at both ends of the spectrum, the NRC must be very much present.

And I would add a third party, which is the government. Government has needs regarding research and development. In my view, it is just as important that the NRC be in a position to answer in some way the needs of the government regarding its own needs in research and development, and maybe to use that to transfer to industry, which might very well be in a position to answer these needs. So I would certainly favour a very close collaboration and intelligence gathering with the industry.

Mr. Bradley Trost: So if I can summarize accurately here, you're saying one of the major roles of the NRC is to be a conduit between key players, bring them together, and help them to see each other's needs so that they can be fulfilled back and forth, am I right?

Mr. Pierre Coulombe: That's not what I meant. What I just said is that within the NRC activities, because the NRC is an operating body—it carries on research and development—in order for these activities to make some sense, you must be connected to the industry and you must know their needs. Make sure that if you are developing these technologies, they will use them. In order to do so, some of those needs may be based on science that maybe the NRC does not have in-house.

Four thousand people is a large number of people, but they cannot answer all the questions. I'm quite sure about that. Therefore, the NRC needs to develop research programs in collaboration with universities and take advantage of the expertise that is there, and bring these people into NRC programs so that at the end of the day industry will benefit. That's the meaning of my answer.

So at both ends of the spectrum, you must have intelligence gathering about what our universities are doing and what our industry needs. How can we develop our own in-house program to capitalize on what is there to solve the needs of these folks going down the line? That's basically the sense of my answer.

The Vice-Chair (Mr. Werner Schmidt): Thank you very much.

Did you have another question? You're done?

Is there anyone else who has a question? No one has indicated that they'd like to ask another question.

I have a couple of questions for you, Dr. Coulombe, if I might be given the indulgence of the committee to ask them.

Probably the most significant question in my mind is the one that centres around promotion from within the organization and bringing an outsider in to run the organization. Before your proposed appointment, Dr. Carty was brought in from the outside to run the NRC; now you are being brought in to run the NRC, and there was an interim president. With all these people and all these outside influences that you're going to have to coordinate, do you find that there might be some resistance within the organization? Or do you have some ways in which you might anticipate some of that resistance so that we will in fact have a smooth transition from someone who might have wanted your job from the inside, as compared to someone coming in from the outside?

● (1645)

Mr. Pierre Coulombe: It may be a good question, but it's difficult to answer.

The Vice-Chair (Mr. Werner Schmidt): Well, you have the very unenviable—or, if you like, enviable—job of taking over one of the most significant science and technology organizations in Canada. It's a tremendous honour to be considered for this job, and I really appreciate the honour that's being extended to you. I also know you could have some problems with it, so I'm sure you've thought about it at least once.

Mr. Pierre Coulombe: Oh, I'm sure I did. It's not the first time it's happened to me. It happened to me in the past that I came to an organization where I was an outsider, and I managed it.

In this particular case I do know that Dr. Carty is now the scientific adviser to the Prime Minister, so he's very much in the loop of science and technology within government. I'm going to replace him, and I'm very honoured, for that matter, I might say.

It's been a long process, as you know. I've been selected through, I would say, an independent process. What I try to do is not anticipate problems too much. I know there will be resistance. There is always resistance, but I am someone people like to work with. That has been the case in the past; I don't see why it should be different today.

But I will have to learn the organization. NRC is a huge organization, and it is present in all the provinces of Canada. It works in French, it works in English, and it has very distinguished scientists, who I respect very much. But at the end of the day, work has to be done and work will be done.

The Vice-Chair (Mr. Werner Schmidt): Thank you very much for that. I'm pleased with the fact that you're aware of the problems, because that's the number one issue.

The other question I had could take a very short or a very long answer; I'm not sure. It should be a short answer, I think. I think there was a move within NRC to review completely what NRC was doing, and then that was changed to something called the re-engineering of NRC. Could you help me understand what the difference is between a major "review" and a "re-engineering" of the organization?

Mr. Pierre Coulombe: Well, quite frankly, I don't see the difference. Re-engineering is basically looking at what you were doing before and trying to do it in the best way. When you do re-engineering—as an engineer I can speak about that—you try to modify your processes, buy new pieces of equipment, hire more qualified people, stop doing this, and start doing that. I believe re-engineering is part of any business.

Maybe I'd call it "refocusing" or studying what you are doing to make sure it is relevant to the community you're serving. In this particular case NRC is a public organization that serves industry. We must make sure what NRC is doing is relevant; otherwise, we may be doing nice science, but.... NRC is not a university, although it can carry out basic research.

The Vice-Chair (Mr. Werner Schmidt): Thank you very much.

Are there any other questions?

Thank you for that clarification. I had the same trouble with those two words. I thought, well, what's the difference between these two?

Mr. Pierre Coulombe: I don't see any.

The Vice-Chair (Mr. Werner Schmidt): I didn't see any either, but I thought, well, there was a decision to change it, to take one out and put the other one in, so I wanted to know why that was.

In that event, then, to the committee, there is a motion I'd like to propose, and that motion is that the chair report to the House that this committee has examined the qualifications and competence of Pierre Coulombe as president of the National Research Council of Canada and finds him competent to perform the duties of the position to which he has been nominated.

An hon. member: So moved.

The Vice-Chair (Mr. Werner Schmidt): Now, are there any questions with regard to that motion?

A voice: It should be “Dr. Pierre Coulombe”.

The Vice-Chair (Mr. Werner Schmidt): I'm sorry; it should be “Dr.”, you're right.

I did not wish to slight you at all, Dr. Coulombe. I understand it's “Dr. Coulombe”, but it doesn't say that here.

(Motion agreed to)

● (1650)

The Vice-Chair (Mr. Werner Schmidt): The only other business we have to conduct is to make an announcement with regard to the meeting on Wednesday, February 9. We'll be dealing with Bill C-9 and Mr. Saada will be appearing before the committee. Would you make sure that if there are any witnesses you want to present to the committee, you'll let us know who they are?

I'd also like to advise you that on Wednesday, February 23, which would be the following meeting of this committee, because that is the date of the budget, I believe, we will not have that meeting but that the meeting will be held on Tuesday, February 22. So we'll have two meetings, one after the other, one on Monday and one on Tuesday.

Are there any other questions?

[*Translation*]

Mr. Paul Crête: What about the budget?

[*English*]

The Vice-Chair (Mr. Werner Schmidt): Yes, that was approved while you were away.

[*Translation*]

Mr. Paul Crête: Have we got to the budget yet? No? Fine.

[*English*]

The Vice-Chair (Mr. Werner Schmidt): It's been done.

We're all done, then?

Then this committee stands adjourned.

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