A Conversation

Leveraging Best Practices In Petro-Canada

Jim Pantelidis and Tim Partridge

In 1976, the Canadian government sponsored the creation of Petro-Canada as a vehicle for Canadian oil and gas policy and, as it put it at the time, „a window on the oil and gas industry in Canada." Since then Petro-Canada has grown into the second-largest oil company in Canada, with assets worth C$6.5 billion, principally by acquiring the Canadian subsidiaries of multinational oil companies such as Fina, BP, and Gulf. In 1985, the government abandoned interventionist policies and deregulated the energy sector. In 1991 and 1995, the government equity in Petro-Canada was reduced through public share offerings to 20 percent.

The performance of the company has improved dramatically over the past several years. From 1990 to 1995, the operating cash flow of the company rose from C$294 million to $640 million, thanks to a series of cost reductions, asset rationalizations, and strategic realignments. Having lagged behind the other major oil companies in Canada (the Canadian subsidiaries of Exxon and Shell) for years, it now matches their performance in some areas and even outperforms them in others. Retro-Canada's stock has increased substantially over the past year and now is the first choice of most securities firms for integrated oil companies in Canada. Most recently, Petro-Canada has acquired the oil and gas assets of Amerada Hess in Canada for some C$780 million.

Petro-Canada is divided into an upstream, exploration and production sector and a downstream refining, supply, and marketing sector. Jim Pantelidis is the Executive Vice President responsible for the downstream sector, which is composed of four business units: three regional (Western, Central, and Eastern Canada) refining, supply, and marketing business units and a separate nationwide lubricants business unit. Each of the four business units has its own refinery and is organized on a stand-alone profit-and-loss basis. During 1994, with assistance from Arthur D. Little, the downstream sector fundamentally redesigned three critical business processes in the petroleum refining and, supply functions in each of the business units. The savings to date are substantial; beginning in 1997 they are projected to approach C$60 million/year before taxes.

In a recent interview, Tim Partridge, who was Arthur D. Little's project manager for the work, asked Jim Pantelidis a number of questions regarding the business process redesign initiative undertaken by the downstream sector of Retro-Canada.

Tim Partridge: Can you tell me what interested you in doing business process redesign?

Jim Pantelidis: Well, let me give you a bit of history As a company, we came out of a very rough financial environment in 1991 and realized that we had to make a major transformation. For the next two years we rethought our refining and supply business from square one, which led to a significant restructuring designed to get the maximum value out of our assets. By the end of 1993, we had shut down one of our five refineries and converted another one to a „lubricants only" refinery, enabling the other three refineries to run at maximum utilization. But, despite the success of the strategy, as the business environment continued to deteriorate we came to the realization that at least two of our four remaining refineries were still uncompetitive and would not likely be sustainable in the long run without farther improvements. However, we could not justify the capital expenditure that would make these refineries substantially better. All we had to do was look at the poor returns on capital investment in the refining industry in North America during the last five years; we weren't going to get caught in the same trap.

So we asked ourselves whether there was an opportunity within the current structure of the refineries to do substantially better than we were doing. As a management team, we came to the realization that there was tremendous opportunity in our human assets if only we could get everybody working together and get maximum productivity from our resources. We realized, however, that this would mean looking at the business processes that we were using in our refinery and supply functions. We knew that these processes were different in every one of the four refineries across Canada. (Petro-Canada was formed as the accumulation of a number of different companies, so each had processes and cultures from prior companies.) Further, we thought that the existing processes were likely to be sub-optimal, so we wanted to develop a best-in-class process that could be applied across the board. That's what led to the business process redesign (BPR) project: ultimately, it was driven by our need to survive.

TP: Were there other reasons why you needed to have uniform best-in-class processes across the board?

JP: I knew going into this project that we did not have the luxury of having more than one version of a process, for at least two reasons. One was that we had trimmed down our staff to the point where our functional expertise, although very capable, was incumbent in a few individuals. That knowledge somehow had to be extended across four refineries, and we could not afford to have experts in each facility. Secondly, we were developing a new,

common information system for our refineries; we could not afford to have four versions of this bridging to four different processes. We were moving into the latest generation of technology and creating a competitive advantage from the combination of technology and new process development.

TP: Once you had decided to do the project, how did you kick it off?

JP: We started by debating extensively a number of objectives. One was to get buy-in from the organization to undertake the change, which was going to be a significant challenge. We were convinced from the outset that the only way we were going to be successful was by getting buy-in right down to the grassroots of the organization. It wasn't sufficient to get buy-in just from the executives. We had to get it right down to the hourly staff – and we needed a strong endorsement from our unions.

Another objective was agreement on a common approach. There was quite a bit of opposition to this at the beginning. People in the different business units all had rationales for why their way of operating was the best. But if all four business units took that approach, we would have had a real problem on our hands. So it was a major hurdle to overcome, and that's where the BPR process helped. We had to break down the belief that every one of our facilities was doing it the best way and the other ones had to adapt. The only way to do that was to go external to our own processes and show people that other companies did the process differently – and better – than we did.

Because the project was potentially so large, our concept was to launch the project in two of the refineries and use them as prototypes to build support, then launch it in the remaining two refineries. We included union executives and head office functional experts from all four refineries in the initial diagnostic team. We also decided very early in the process to bring in a consultant – Arthur D. Little – although initially we had debated the need for a consultant. We chose to engage a consultant for two reasons. First, the consultant could give us the process discipline that we didn't have. Second, and probably just as important, the consultant could give us a view of the outside world. Arthur D. Little also added industry expertise to the Petro-Canada team.

TP: *You* will recall that we developed a three-stage process of diagnosis, redesign, and implementation for the project. Can you tell me something about what happened during the diagnosis and redesign phases and what results were achieved?

JP: We needed first to agree on which processes were likely to give us the most leverage. We identified some 26 major processes. Our goal was to try to narrow those down to the three biggest processes with the highest leverage for the business. The three processes we identified were refinery operations, refinery maintenance, and supply operations.

Just as important as identifying the highest-leverage processes was realizing that it was possible to find or create better processes than were currently being used by any of the four refineries. And by involving a cross-section of the organization, we were able to do that successfully.

The diagnostic phase took about three months and the redesign another six months. It was fairly frustrating initially, because of the length of time involved, the energy and effort required, and the lack of any obvious solution hitting us in the face early on in the process. I still think however, that we needed that time to build buy-in from the organization.

We had estimated that the initial benefits would be about C$20-$30 million a year before tax for the two refineries. As early as next year, the reengineering effort will generate about C$60 million a year of benefits, before tax, across all four refineries (Exhibit 1). As we talk here today at the end of May, we have 75 percent of this year's projected benefits already accounted for and reflected in our bottom line.

After the initial diagnostic phase, an interesting evolution happened. We started off with the concept that we would pilot two of the refineries and then roll the redesign out to the other two. After the three-month diagnostic phase, as we started to get a sense of what was possible, the management team almost unanimously said, „Why wait for the pilot work to be completed and then roll out? Why don't we do the whole thing now?" It was so obvious to us that the potential was there, and the staff at the field level reacted so positively to the first phase.

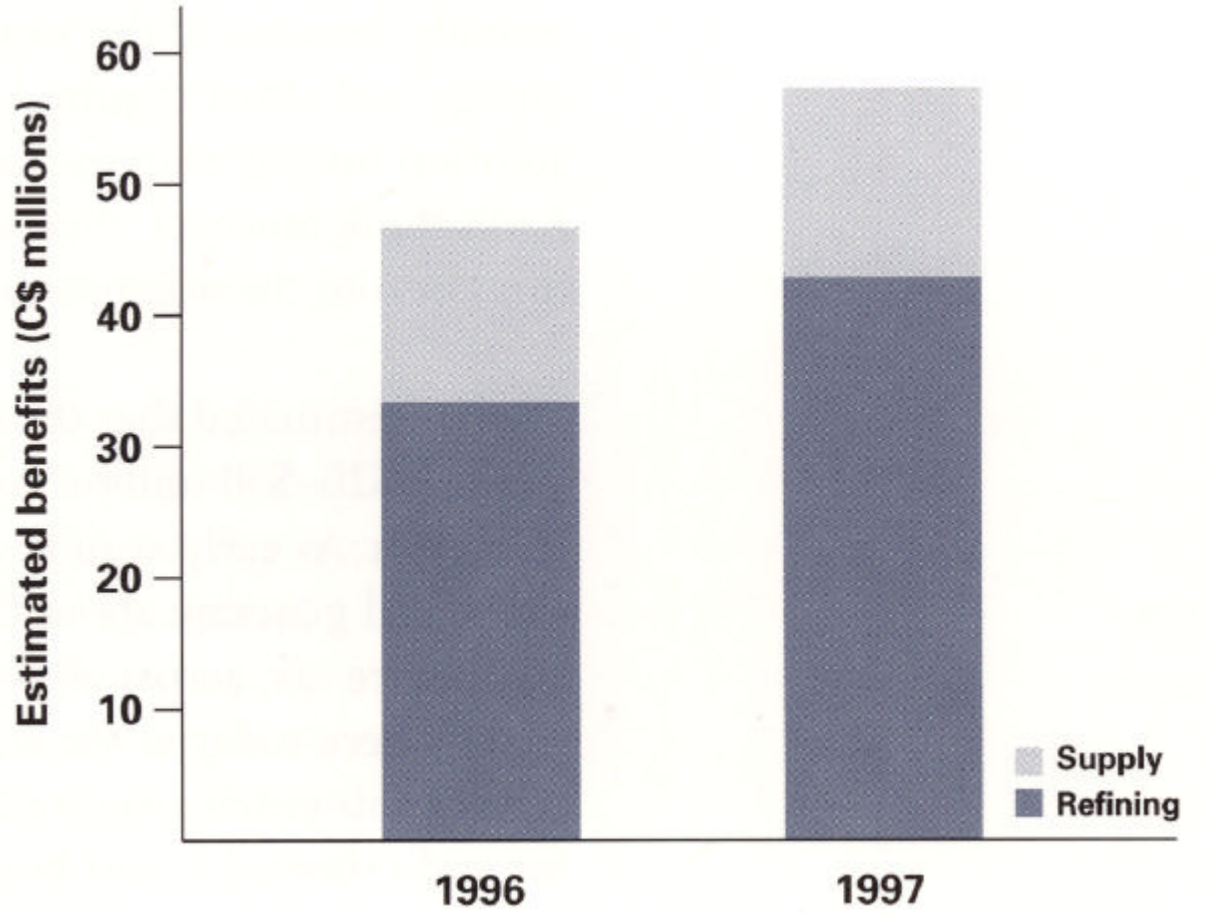
That decision posed a dilemma for us: how to get the other refineries to catch up with the leaders, which had completed the diagnostic phase and were starting the redesign stage? We needed to shorten the diagnostic phase for the other two refineries so that all four facilities were starting the redesign stage simultaneously. It was a bit of an ad hoc process, but it worked because of the willingness of senior management to go with the commonality approach.

We quickly formed teams at the other refineries and exposed them to what had already happened in the selection and diagnosis of processes in the initiating refineries. They then did a quick vetting as to whether those processes were just as critically in need of redesign for them. Once there was agreement that the three processes were the right ones and it was determined what the benefits would be for their refineries, they were able to participate on a

cooperative basis to do the redesign with the teams that had led the initial work.

Exhibit 1

Projected Benefits from Reengineering at Petro-Canada



The beauty of the process was that because we allowed the teams in each of the lagging refineries to diagnose their own processes, they were able to convince themselves of the need for redesign at their own sites. They also improved on the prototype redesigns developed by the leading refineries. At one time in this activity we had 10 redesign teams operating – a substantial number to coordinate. The coordination and buy-in was made easier by seeding the new teams with members of the original diagnostic team and by using a „national core team" consisting of members from the original diagnostic team. To make a long story short, at the end of the redesign phase all four refineries had basically agreed on common redesigned processes.

TP: Despite the significant effort to develop redesigned processes, there was still a lot of work to be done. Could you describe how Petro-Canada implemented the redesigns?

JP: The implementation phase was a very structured activity put together by the refining and supply staff. The fact that we had used a cross-section of staff in developing the processes allowed us to put in place implementation teams who had knowledge of what had been agreed to and what had to be done.

The teams developed very detailed schedules. Again, we involved a cross-section of the organization, right up to the executive level. The employees knew that, at a very high level in the organization, we felt this was extremely important, and that they had tremendous support in terms of resourcing the implementation of this project. We established very specific milestones and a fairly detailed performance measurement system to track progress along the way. Also, because we were talking about such a tremendous change in the organization's culture, there needed to be indications of executive willingness to support meaningful changes in the organization. I'll give you a case in point.

One of the big issues we had with the refinery maintenance process we developed was the belief that, if we were to get the efficiency we were looking for, we were going to have to hire maintenance staff into our refineries at the expense of contracted maintenance, for a net reduction of overall work force. This was a big point of contention, because we had convinced ourselves over the previous 20 years that the best way to maintain the refineries was with contract maintenance. However, the new process that we developed suggested that we could get productivity leverage by selectively hiring some maintenance staff into the refineries. The union, which had participated in the redesign, needed verification that we were serious about our plans to hire, so we went ahead and hired maintenance staff into the refineries, as had been agreed. That enhanced a unity of effort between the union and staff and supported a change in culture from the confrontational relationship that had existed in previous years.

TP: You've mentioned an issue often raised in business process redesign: a lot of people think that process redesign is simply about cutting heads. How do you respond to that?

JP: At the beginning of the diagnostic phase, cutting heads was one of the major concerns, particularly among the union executives. We had to alleviate that fear before we could proceed. My position at the time was that there was no doubt we were looking for productivity improvements. I was not going to kid anyone. If we couldn't improve productivity, we couldn't achieve our initial objective of taking these refineries from being on the margin to becoming sustainable long term. But there are many ways to increase productivity. While we added maintenance staff, we actually reduced full-time equivalents via the reduction in contract maintenance. So that's how we got that productivity increase. Once the staff and hourly workers realized that this was not a project simply to cut Petro-Canada staff, we got enrollment.

We also started a policy of routinely including union executives in management meetings to help them understand what made the business profitable. That communication had never existed before in the refineries. Now, when I review company performance with refinery employees, they can understand what is actually driving the business, to the point that we got them enrolled as part of the change effort in making sure the refineries remain profitable long term. So now the union executives can better communicate with the people they are representing about what we are trying to do.

I've seen a transformation in our union-management relationship unlike any I've seen in the 30 years I've been in this business. It's a genuine improvement that's built on common interest in the long-term well-being of the refineries. Some of the union members who were our biggest detractors in the past have interestingly enough become some of our greatest supporters. This was both a surprise and a source of satisfaction to me. But you know, having said that, the relationship still remains fragile.

This isn't the sort of project that ends and then you go on to the next project. One of the things we found out about the process of reengineering is that once you get the best-in-class process implemented, then it's an ongoing process, an ongoing new way of doing business.

You can't lose sight of it. You find out that you've created a new standard of participation, with all levels of the organization involved, and you have to continue participating at that level.

TP: Could you describe the major organizational changes that were advocated as a result of the process redesigns?

JP: There was a major organizational change at the field level in the refineries. We went from a functional organization to an area team concept, which leveraged the cross-utilization of capabilities by including all the essential skills, as a more efficient way of running the refinery. A lot of the benefits that have been created to date have resulted specifically from that part of the organizational change. But the organization didn't get created first: we first developed the process and then developed the organization that would best deliver the desired result.

TP: *You* did quite a bit of relocation of individual groups, particularly in supply. Can you talk about that a bit?

JP: One of our biggest wins was the creation of a „war room" where we can get proximity between the planners and operations staff. In our three refineries where the problems created by geographic separation of functions were greatest, we implemented the war room concept, combining supply operations, production, and sales. I've visited these war rooms in each of the refineries and I'm encouraged by the tremendous amount of enthusiasm in those areas. Invariably, whenever I visit those areas I get unsolicited examples of opportunities that have surfaced that our previous structure would never have been able to address. When I walk in and go from desk to desk, people will tell me, „*YOM* know what we managed to do last week?" It is actually quite amazing.

TP: As you know, Arthur D. Little strongly supports the concept of creating a learning organization as a means of ensuring continued competitiveness. Do you see the change program you've led at Petro-Canada as part of an evolution toward a learning organization?

JP: I believe creating change is an essential component of the learning organization, because two things happen. First, once you've gone through the process and you've been successful, you eliminate the fear of future change. The second thing that happens is that you create a capability within the organization. The organization learns how to create change and process improvement. For instance, now that we've almost completed implementing the first three processes, people are looking to bring forward the next three processes from the original list of 26 we had identified. You get immediate enrollment. There is almost excitement: „How quickly can we get to this?" The resistance typical of organizations no longer exists, because people have seen success and are looking forward to the next success. Change is no longer threatening. In my mind, that's how you build a learning organization.

Jim Pantelidis joined Petro-Canada in 1984 as Vice President, Marketing and Development. He has served in a number of senior management fashions in both the Resources Division, where he was responsible for all aspects of the company's production business, both nationally and internationally, and the Products Division. He was appointed President of the Products Division in 1991 and Executive Vice President of Petro-Canada in May of 1995.

Tim Partridge is a Vice President of Arthur D. Little of Canada Limited and is responsible for the firm's hydrocarbon management consulting practice in Canada. With more than 25 years of industry experience, he specializes in organization and strategy development for oil companies, both in Canada and internationally.