The Role of Chief Economist in a Major Oil Company

*By Peter A. Davies**

This paper is being presented as part of a session on the role of Chief Economists in oil companies. Many would query why the session is being held, but it appears to address a number of questions that continue to be asked within the energy economics profession:

1. Why have corporate energy economists become a dying breed in recent years?
2. Does energy economics have value in the 'real world'?
3. How do large organizations work and how do economists fit into this apparently opaque world?

In addressing these questions this paper is structured as follows:

1. What are the trends in the use of economics in oil companies?
2. How is it used in practice?
3. How is it organized?

Trends in the Role of Economists

Modelling the Predictable World

In the 1960s the world seemed predictable. Growth rates were relatively stable, allowing for periodic cyclical recessions. Economists found modelling easy: more of the same in most cases. The models seemed to work.

The macro models were supplemented by linear programming models to optimise the industry's flows: refinery runs, supply sources, etc. The number of economists increased.

Analyzing and Forecasting the Uncertain World

But this world was not to last. The straight lines were not straight for ever. Oil prices quadrupled in 1973-74. The world economy lurched into a new, less predictable era. The models broke down.

This was not the end of the economists, but it led to a new period that was to last 5-10 years. Two new approaches emerged:

1. The building of new more complex models that attempted to simulate the behaviors of key players in the oil market – especially OPEC. 'World Oil Models' were built that considered OPEC capacity utilization, OPEC finances and future non-OPEC production. They tended to claim that they could explain the recent past volatile behavior and could forecast future oil prices and volumes. I think they all failed – many spectacularly.
2. Scenario Planning became a favored process. It was acknowledged that the future was uncertain and unpredictable. But it is possible to analyze and understand driving forces, key uncertainties and specific 'givens'. This allows an assessment of alternative futures. Strategies and projects can be tested against such scenarios. The process of their compilation enhanced understanding of the way the world or specific markets worked and allowed the decision maker to understand which case was prevailing at a particular time.

These were predominantly phenomena of the 1980s. Unfortunately the new models generally failed to predict the 1986 oil price decline and to analyze meaningfully the new post-1986 era. Scenario planning was more successful initially, but in many companies its use in decision making was felt to be limited. It often didn't help to 'pick winners'. In many instances the main weakness was that the scenarios were not used properly. Central cases dominated, with occasional downside testing.

Cutting Back

As the industry struggled to adapt to lower oil prices and low profitability in refining, the resultant cost pressures did not escape the economists. Economics departments were cut and merged into other groups. In many cases they were scrapped completely.

Contracting out became the name of the game. It was cheaper to buy in a reputable forecast from an external supplier than to employ even a small number of economists in-house. If predicting oil prices is impossible, why employ economists to try and do it? It was easier for senior management to pick a cautious number and run the company on that basis. Many did.

The New Paradigm?

Is this where we are today? Or is there a different, more constructive role for economists in the oil companies today? I think that the answer is, "yes", but that does not mean that we have forgotten all the lessons of the past:

1. We cannot predict oil prices accurately. We shouldn't try. But this does not mean that we cannot increase the understanding of current and future trends in oil and other energy markets. This allows better decisions to be made.
2. Scenarios are not an all embracing method of understanding the future. But again, the process of considering driving forces and key uncertainties can help better decision making. Insightful analysis of external forces is key to good decision making.
3. Contracting out is very often efficient. It permits scale economies in collecting non-proprietary information: we shouldn't all count the number of boilers or calculate inventory levels. It also gives access to the best information. But there are areas where it does not work, not least where the company is an active participant in a particular market.

I believe there is a form of new paradigm for economists in energy companies. The revised role involves three core elements:

1. Accessing best information,
2. Providing sound analysis of that information, and
3. Communicating the analysis effectively to those who need it to assist in ensuring that better decisions are made.

In all cases the key is aiming to get better decisions and getting rid of bad ideas and myths.

The Role

Within BP, economists have four relatively distinctive roles:

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Energy Analysis

The economists lead the company's analysis of oil and other energy markets. An understanding of energy market developments and prospects is key to good decision making at both the macro strategic level and the more micro project level.

We aim to do this in a number of ways:

1. We aim to access best information. We act as informed buyers to access the best sources available externally. We supplement this with our own proprietary information from our activities. In addition we aim to access 'privileged information'. These are insights that we obtain from our relationships within the industry: from our partners, customers, suppliers etc.
2. We aim to provide insightful analysis. I believe that this requires employing only first class economists. There is nothing more dangerous than a poor economist.
3. We aim to communicate effectively. This used to mean having good writing skills. Verbal presentation skills then grew in importance. Today the skill set is more complex and involves many IT skills: not just graphics but use of the Internet and intranets and increasingly, video linkages and multimedia. Decision makers must have the best analysis accessible when they need it and know how to obtain it.

Energy analysis will remain at the core of the economist's role in oil companies. The role is not an attempt to predict the oil price with any accuracy. It is much more understanding, predicting and communicating energy market structures and trends. Again the aim is to lead to better business decisions.

Macroeconomics

Macroeconomics is important for oil companies. Economic growth drives energy consumption. Petrochemical markets are critically influenced by economic cycles and trends. Longer term economic forces influence future markets and growth opportunities.

But it is not necessary for oil companies to develop leading edge macroeconomic skills to the same extent as in energy analysis. We do not need to be able to predict next quarter's GDP with pinpoint accuracy. In practice this means that we can be informed buyers of most of the macroeconomic analysis that we need. In many cases we do not know the answer to many issues – but we know somebody who does.

Our job is to find the best source of macroeconomic information for our needs. It requires us to be able to identify what information is required. It also requires us to be able to provide it in the form that is needed within the company.

Applying Economics to Business Issues

The application of economics and economic analysis to business issues has become increasingly important. It has become understood that economists have strong analytical skills that allow them to assess an issue in a different, and often more structured and insightful way than those with other disciplines.

The list of areas where practical economics is applied is wide and ever changing. Within BP, for example, it has included, in no particular order of importance:

- environmental economics
- corporate level strategy
- country risk analysis
- analysis of industrial structures
- financial economics including issues such as the cost of capital
- value chain analysis
- national economic issues such as competitiveness and the single European currency
- economic impact studies e.g., the impact of a major oil or gas development on a country or region

The key is the best information, good analysis and effective communication to ensure better decisions.

Stakeholder Interactions

Economists seem to be unable to keep their attention exclusively on internal company issues. To some degree this is because economists are one of the key sources of external market intelligence. They have to look outward. They bring the external world into large corporate structures which have an inevitable tendency to look inwards.

Economists are also used to interact regularly with stakeholders: shareholders, customers, suppliers, partners, governments, communities and financial markets. Why? There appear to be two main reasons:

1. Stakeholder relationships involve the sharing of information. This is usually focused on the company's views and understanding of the markets in which they operate. This involves sharing to ensure that better decisions are made where companies interact with stakeholders. It is also a case of due diligence: is the company making soundly based decisions? The economist's role is often to share and communicate the company's understanding of the markets in which it operates.
2. Secondly economists are often used to communicate the company's views to decision makers – often governments. The aim is thus to get better decisions outside the company as well as inside.

How Does the Chief Economist Fit into the Organization?

The working of a large corporation is usually a source of wonder, incredulity and confusion to those who are outside. The sort of questions that are asked by economists who are recruited into the company include:

- which department do you work in?
- who do you report to?
- how do you determine your priorities?
- how do you communicate your messages to ensure better decisions?

Within BP the economists have, over the last decade, sat within a plethora of corporate structures. We have been part of a Corporate Planning Department, reported directly to the Chief Executive, been free standing, part of a wider executive support team and a number of combinations thereof.

There is no 'ideal' structure. The role has to depend upon the structure and operating culture of a particular company. In general, the group has to be positioned centrally as many of the issues that economists address are at the level of the corporation and are important for more than one business operating unit. The main need is to ensure that the work of the economists has an impact. It has to be listened to and respected. It has to be rigorous, high quality and objective.

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If that is the case, the particular location and reporting lines are essentially irrelevant.

Finally, there is the issue of priorities. An economics team can charge for its services or it can be block funded. Our experience has been that the transactions costs of cross charging are too high and make it impractical. Within BP we will not make a cross charge of less than £100,000 - US$160,000. This precludes many of the economists' activities. If no cross charging is made, the price of the service is zero and demand tends towards infinity. The problem is enhanced as our role is expected to be both proactive and reactive. How can the time of economists be allocated efficiently?

We have found that the most effective process is that of annual performance contracts and quarterly performance reviews with our key customers. The annual contract defines broad objectives and milestones. The quarterly reviews assess performance against these objectives and permits resolution of priority conflicts. Such processes fit well within the wider BP performance oriented culture.

Conclusions

This paper has tried to set out the key elements of the role of the Chief Economist and economists in general within BP. The role has changed fundamentally over the last decade as the oil industry has restructured and reoriented itself. There are less economists - but there are still some and the role is still valued. They are more focused in their tasks and more performance oriented. Contracting out is now commonplace, but has not completely replaced in-house economists.

The role of economists is to produce better decision making. This requires the best data, first class analysis and state-of-the-art communication skills. Only first rate economists have a role in successful oil companies.

An Evolutionist Analysis... *(continued from page 20)*

newcomers to enter.

[3] Nevertheless, the counter shock of 1985-86 can be interpreted as the realization by Saudi Arabia that OPEC could only hope to resume its dominant position if it succeeded in doing away with the differentiation strategies of other competitors by an aggressive cost strategy.

The International Petroleum Industry - Its Influence on South African Oil Companies

*By Jacques Magliolo**

South African petroleum companies are faced with a fundamental economic and political paradox. Economic sense suggests that the time has come for the local industry to face a complete demise of tariff protection for listed Sasol and State-owned Mossgas. Yet local politicians continue to promote commissions and task teams to assess deregulation, but ultimately do little to seriously undertake a radical restructuring of this industry.

The State's hesitation to remove regulations, in particular the Service Station Rationalization Plan (called Ratplan) and the Petroleum Products Act, may be related to political agenda. The Ratplan is essentially a government control on where service stations are opened, or closed, how these are operated and whether self-service can be implemented or not.

The African National Congress led South African government says that scrapping Ratplan would result in massive station closures and, therefore, unemployment. Our estimates are that, at most 150 stations would close in the entire country, causing about 1,500 retrenchments. That is hardly likely to increase South Africa's 40 percent unemployment rate out of a population of 39 million people.

The Petroleum Products Act relates to the State's control and taxing of fuel prices. A removal of this Act questions the ANC's belief that companies should operate under a free market system. Perhaps, it is more relevant that government would lose the 45 percent fuel tax it receives from every petrol user.

To confuse matters further, Mineral & Energy Affairs minister Penuell Maduna recently said the State's oil-related assets could be consolidated and listed on the JSE. Does this mean that the industry is to get some clarity on the State's position for the future of the industry? Or is there some other agenda in place?

To understand these issues, it is necessary to look at present and future international oil trends and to assess how South Africa fits into the global arena.

The International Arena

Throughout the world, geologists agree that low cost (known) petroleum production resources of the Middle East should be exploited first. These hold 63 percent of global proven, recoverable reserves of crude oil and natural gas. Yet, oil prices and supply imbalances created by OPEC in the 1970s have prompted heavy investment in new, high cost fields. Today, 75 percent of international oil and gas investment is being spent in expensive OECD countries, which have only 6 percent of proven global oil reserves.

In addition, OECD reserves are being depleted much faster than in other countries and there is a growing commercial and political alliance between the Commonwealth of Independent States (CIS) and the Gulf region, which could see the creation of a considerable economic and political force against the rest of the world.

Could these factors lead to a rapidly diminishing supply of international petroleum? does the CIS/Gulf alliance mean

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oil prices will continue to be manipulated in the future? In terms of South Africa, a diminishing world supply would put credence to the State's lack of action to rid itself of storage facilities created during the Apartheid years and, secondly, the State could have an argument to keep the Petroleum Products Act in place to maintain a reasonably steady oil price for South Africa.

An assessment of international reserves and trade provides a better understanding of difficulties associated with the instant and complete deregulation of the South African petroleum industry.

Reserves

Globally, proven oil reserves are continuing to rise with new finds and re-evaluations of existing fields. In 1996, there were notable additions to reserves from Angola, Argentina and Colombia. Successful oil exploration along the Southern coast of South Africa (Oribi field now supplies 6 percent of South Africa's daily consumption), has resulted in a profitable government contract with Phillips Exploration International, Energy Africa and Sasol to explore for oil along the Eastern coast of South Africa.

At the 1996 production rate of 70 million barrels per day, proven global reserves could meet demand for 40 years. International experts vary in their forecasts, but our conservative estimate shows that by the year 2015 consumption of oil products should reach 100 million barrels per day, but that production will easily meet this demand.

In addition, there are twice as many new oil finds globally as in the Middle East, which indicates that mid-east reserves are expected to diminish relative to world reserves within 20 years and, therefore, the supply of petroleum will not diminish much in the long term. South Africa has no reason to keep storage facilities.

International Trade and Prices

The Middle East controls 52 percent of total exports and the United States, Western Europe and Japan are increasingly becoming more dependent on oil imports. However, the OPEC cartel has been unable to manipulate prices for at least the last 10 years. This was amply displayed on May 12 this year when market forces pushed the price of crude up by one dollar a barrel.

The movement was due to a series of international events that had nothing to do with OPEC's control or ability to disrupt crude flows. Two of the world's main oil exporters, Iran and Colombia, suffered earthquakes and a major North Sea oil terminal in the Shetland Islands was blockaded by fishermen over payments disputes arising over claims that fishing had been affected by an oil spill.

Essentially, forecasts for the next two decades are that crude prices will remain steady, ranging between US$19/bl and US$25/bl, with worst case scenarios pushing the price up to US$36/bl. A stable crude price removes the State's argument that it is important for them to smooth out fluctuations through the Petroleum Products Act.

Consolidation and Listing of Oil Assets

If there is no real reason to keep these Acts in place, why not remove them? And why consolidate and list State Assets? The first answer possibly lies in Pik Botha's inability to wade through the Government of national unity's (GNU) red tape in 1994 and 1995. Maduna's reasons are slightly different. Now that we are near the run up to the 1999 election, the ANC cannot afford to have problems with its Alliance partners, even if unprofitable service stations should be closed. After all, a deregulated industry would hurt downstream operators like black empowerment companies of Naledi, Afric Oil and Bombanani.

So what is the answer? Petroleum is recognized by all African States as the single most important product that could lead this continent into an economic renaissance. For sub-Saharan Africa, the Southern African Development Community (SADC) is the preferred avenue to access this R350 billion industry, which could grow by 56 percent between 1996 and 2015. This would be dependent on an improved infrastructure to access, exploit and deliver crude. Without this structure, production of oil could grow by only 10 percent, which will turn sub-Saharan Africa into a net importer of oil.

Therefore, it is logical to create a mechanism to access this forecast growth. Under a listed scenario, the free market would fund expensive exploration into the interior. After all, the ANC could then turn its alliance partners and black empowerment groups into shareholders and force them to close unprofitable service stations.

If you don't understand an industry, remove yourself from it, but be perceived to be undertaking sound economic principles. Either way, the State wins.