Topic 7: Relationships in the Oil and Gas Industry

Topic Preview

The relationships between oil companies (the operators) and the service companies that supply them have changed radically in the UK over the last 20 years – and the changes are now beginning to spread around the world.

This topic of the course examines the historical relationship between the operators and the service companies, and considers briefly what was wrong with those relationships.

We then devote the majority of the session to examining what is changing, how it is changing and how these changes are progressing.

Topic Content

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1. Commercial Relationships in the Porter 5 Forces model

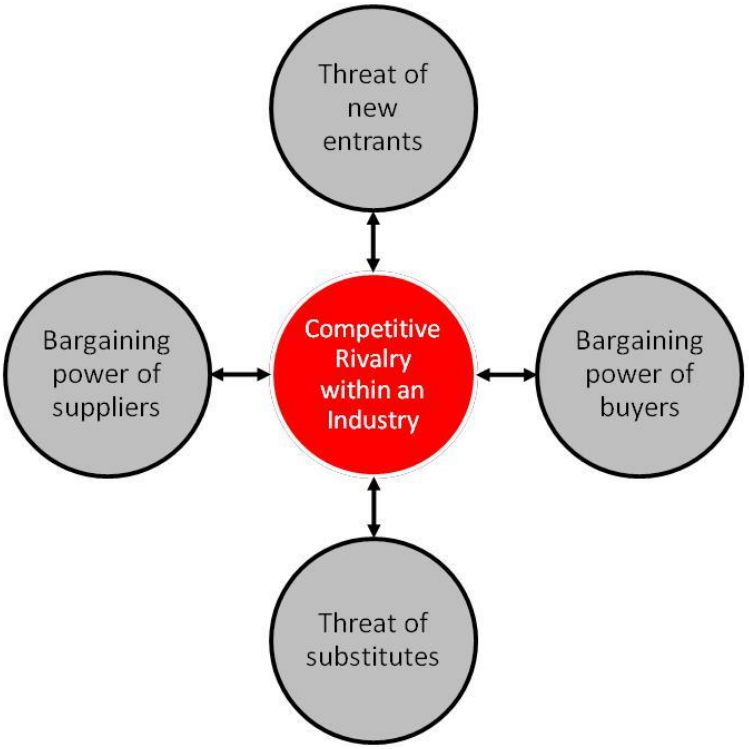
This section addresses the following aspects of the Porter 5 Forces model

- The market for the supply of the products and services that the oil and gas companies need to enable them to find and produce the oil and gas.

  This topic discusses the commercial relationships between the providers of the products and services (service companies, contractors and equipment vendors) and the "buyers" of these products and services.

In this market the "buyer" is the oil or gas company who seeks to produce oil and gas. The "sellers" are the thousands of oil and gas service companies that supply these products and services.

This aspect provide insights into the competitive rivalry in the industry, illustrated below :-



2. The relationship between operator and service company

2.1. Basis of the historic relationship

The fundamental relationship between operator and service company is determined by the magnitude of the risks, and the ability of the respective companies to tolerate that risk. In particular, the magnitude of the risks usually exceeds the capitalisation of the service company.

For example:

- A job on a well may involve a £150,000 contract.
- The service company carrying out the work may be capitalised at £10–20 million.
- The consequential losses if the well is damaged beyond repair include:
  - the cost of a new well, say £5 million;
  - the loss of perhaps 6 months' revenue before a replacement well can be drilled; at 10,000 bbls/day this represents £22 million.

Thus, the total consequential losses might run to £27 million, or 180 times the value of the original contract, or 1–2 times the entire value of the service company.

2.2. Allocation of risk

As a result, the operator has historically accepted the risk, and the buying process has evolved over time into a complex series of contractual arrangements.

2.3. Resulting market approach

This complexity found operators facing 30–40 subcontractors for certain parts of its business, e.g. drilling services.

The complexity in contractual arrangements was increased because:

- early contractors offered limited services;
- in difficult offshore environments, there was a large number of required services (often very specialised);
- the operators chose to manage and oversee all aspects of major offshore projects themselves.

Topic Activity 1
(Self-required)

What's wrong – and what's right – with the traditional approach?

Consider the traditional lowest bid approach to placing work. What is good and bad with it:

a. from the perspective of the oil company?

b. from the perspective of a company supplying the service or the product?

2.4. Associated problems

- A number of problems with the contractual relationships grew up against this background. There was a perception by operators that by keeping what were effectively short-term contracts – and either re-tendering or threatening to re-tender – a competitive low price could be maintained for many offshore services.
- There is much evidence that a 'low price' service environment was achieved – but not a 'best value' one.
- Contracts were primarily based on man-hours, with the contractor making more profit for every man-hour sold. This created a disincentive to seek to improve on an operation as more time equated to more profit. The contractor's objective was, therefore, basically to maximise the number of people or man-hours expended on a contract to maximise returns.
- The operator's objective was usually to achieve lowest cost – or most effective expenditure. This was a fundamentally different goal from that of the contractor.
- There was little or no emphasis on the overall objective (i.e . providing a good service), and no emphasis on performance or efficiency.

2.5. Implications

Some operators – notably in the UK continental shelf (UKCS) – have realised that the process is not ideal and that it reduces the prospect of economically developing future North Sea fields (which are marginal and cost sensitive) because:

- it removes resources from core activities;
- it creates a substantial administrative burden;

- it is difficult to encourage innovation.

As a result, some UKCS operators have (or are in the process of) revamped their contracting strategy.

Topic Activity 2
(Self-required)

Consider the traditional lowest bid approach and the above factors, and note down ideas on how companies might work differently together. Think of:

a. the 'soft' issues relating to people and team management;
b. the 'hard' issues, such as the commercial basis for any new relationship.

3. An introduction to partnering and alliancing

3.1. An overview

The contractual basis of 'partnering' or 'alliancing' contracts is that they are results orientated, in that they contain arrangements which separate payments (by the operator to the contractor) to cover costs from those payments, made according to results, which generate profit.

To some extent, there is a transfer of responsibility from the operator to the contractor to achieve the efficiency required.

Both parties (operators and contractors) are seeking a win–win situation.

These contracts have been introduced into a number of areas of UKCS activity, including with drilling contractors, offshore fabricators, offshore maintenance and engineering services.

The operator gains from more cost -effective services because of a reduction in unplanned events and a reduction in contingency requirements. Generally, the operators should be able to do more with their budgets.

The contractor maintains continuity of work, may take on additional workscope and has the potential to benefit through some incentive payments for work performed well in terms of either time or tasks/quality.

3.2. Partnering and alliancing in other industries

The following text is the first of two extracts from a paper by Dr Richard Green of The Offshore Management Centre. The paper is entitled 'Collaborative relationships between producers and contractors in the UK oil and gas production industry', and was first presented at the British Academy of Management Annual Conference at Lancaster on 13 September 1994. Although more than 10 years old, its commentary is still valid today.

This extract reviews collaborative relationships in other industries.

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Collaborative relationships

Some characteristics of collaborative relationships

In Japanese industry, the idea of customers and suppliers entering into collaborative relationships has been accepted for many years . Sako (1992, p. 55) outlines the structure of Japanese buyer supplier relationships and describes how in Japanese industry since the 1950s small and medium enterprise suppliers have been referred to as *kyoryoku gaisha* (co-operating company) to highlight the mutually co-operative atmosphere of firms working to a common goal.

Sako describes the main characteristics of 'obligational' (or collaborative) relationships and 'arm's length' (or adversarial) relationships.

Collaborative relationships may have the following features (from Sako, p. 11):

- The customer will have a single or very few suppliers of the service.
- Bidding may not take place before an order is placed for a new service. The choice of supplier is made more on the culture and working relationship than on price. Commercial details tend to be worked out after the selection of supplier has been made.
- It is expected that the relationship will last for a long time, and there is a mutual long term commitment.
- Contracts contain simple procedural rules, but substantive issues are decided case by case. Contracts may be oral rather than written.
- There is case by case resolution of problems with much appeal to the diffuse obligation of long term relationships.
- The supplier will start work on the basis of oral communication before written instructions have been received.
- The customer trusts the supplier's technical competence. There is little or no inspection or checking of the supplier's work by the customer.
- The customer will provide assistance and training to the supplier's staff without charge.
- Extensive multiple channels of communication between the customer's and the supplier's staff at all levels. There is frequent contact which extends beyond the immediate business into socialising.

- Customer and supplier share unforeseen losses or gains where the relative shares are decided case by case by applying some principles of fairness.

Sako emphasises that collaborative relationships are distinguished from other relationships by a high degree of 'goodwill trust', in addition to 'competence trust' or 'contractual trust' which are present in most relationships.

'Goodwill trust is of a more diffuse kind and refers to mutual expectations of open commitment to each other. Commitment may be defined as the willingness to do more than is formally expected. A commitment to accede to any request from a trading partner or to any observed opportunity is said to be open … Someone who is worthy of goodwill trust is dependable and can be endowed with high discretion, as he can be trusted to take initiatives while refraining from unfair advantage taking.'

Carlisle and Parker (1989, p. 14) provide a similar message on trust, and Macbeth and Ferguson (1994, p. 2) emphasise the idea of mutual obligation between customer and supplier in a collaborative relationship.

Some definitions used

Many definitions of collaborative relationships are available . They include:

- The American Construction Industry Institute (1989) gives a 'clinical' definition of partnering as 'Partnering is a long term commitment between two or more organisations for the purpose of achieving specific business objectives, by maximising the effectiveness of each participant's resources. The relationship is based on trust, dedication to common goals and an understanding of each other's individual expectations and values. The expected benefits include improved efficiency and cost effectiveness, increased opportunity for innovation, and the continuous improvement of quality products and services.'

and then a less formal statement that 'Partnering is simply a relationship wherein:

- All seek win–win solutions.
- Value is placed on long term relations.
- Trust and openness are norms.
- An environment for long term profitability exists.
- All are encouraged to openly address any problem.
- Innovation is encouraged.
- Each partner is aware of the other's needs, concerns and objectives and is interested in helping their partner achieve such.

- Overall performance is improved.'

Hornby (1992 states that 'Partnership sourcing is where customer and supplier develop such a close and long term relationship that the two work together as partners. It isn't philanthropy: the aim is to secure the best commercial advantage. The principle is that teamwork is better than combat. If the end -customer is to be best served then the parties to a deal must work together – and both must win. Partnership sourcing works because both parties have an interest in each other's success.'

A dispassionate view of partnering is given by Roxborough (1993).

'Partnering as a concept is ill-defined and imprecise. It appears to be intended to describe a different type of procurement relationship to the traditional adversarial contractor/client relationship. It can involve the following features:

- a full and frank exchange of information about projects including information on costs,
- an integrated team approach to working on a project,
- feedback on performance after each project
- a sharing of the risks and rewards in a project.

This different type of relationship can present itself in different ways, for example:

- a more careful selection of contractor, concentrating on qualities of co-operation rather than merely lowest price.
- a more co-operative and communicative way of managing a project.
- a different pricing structure with a major part of the price consisting of an incentive fee contingent on success, as opposed to a flat fee payable in any event.
- a method of developing and improving the skills and performance of supplier leading to improved performance on future contracts as part of an on-going relationship.
- an exclusive relationship with a supplier whereby all projects are provided to the supplier over a period of years.'

Development in the UK

The ideas of close collaboration of customers and suppliers originated in Japan with the development of networks of suppliers and a background culture of mutual obligation.

However, the idea of long term relationships of customer and supplier, where the customer helps the supplier to develop its processes to provide goods of the consistent quality required, has also been developing in the UK for many years. The relationships

of Marks and Spencer to its suppliers are a good example, and the UK car industry has developed much closer links with its suppliers as it has worked to match the quality and cost structures of its competitors.

Factors which make for successful collaborative relationships

In a recent paper (Kanter, 1994) Professor Kanter considers some of the factors which contribute to successful alliances between companies. The paper was based on a study of 37 companies and their partners from around the world.

Professor Kanter offers a categorisation of the continuum of co-operative relationships between companies and suggests that the strongest and closest collaborations are 'value-chain partnerships ' such as supplier–customer relationships. 'Commitments in those relationships tend to be high, the partners tend to develop joint activities in many functions, operations often overlap, and the relationship thus creates substantial change within each partner's organisation.'

One of the points made by Professor Kanter is that when setting up the relationship '…Third party professionals – lawyers, investment bankers, and their staffs – play their most important role. But if they dominate, the relationship can become too depersonalised and lose the leaders' vision. It is important to remember that outside professionals don't have to live with the results of their work.'

When discussing the implementation of a collaborative relationship beyond the few individuals involved in setting it up, Professor Kanter identifies four reasons why broader involvement threatens to undermine the commitment forged at the top:

- People in other positions may not experience the same attraction and rapport as the chief executives.
- Employees at other levels in the organisation may be less visionary and cosmopolitan than top managers and less experienced in working with different cultures.
- Usually only a few staff people are dedicated full time to the relationship. Others are evaluated on the performance of their primary responsibilities and therefore often neglect duties relating to the new alliance.
- People just one or two tiers from the top might oppose the relationship and fight to undermine it.

'…Differences between companies do not disappear because of an alliance, but they can be handled so they don't jeopardise it. Companies that are good at partnering take the time to learn about the differences early and take them into account as events unfold.'

'People will take the time to understand and work through partnership differences to the extent that they feel valued and respected for what they bring to the relationship. … Mistrust, once introduced, sets off a vicious cycle. It makes success harder to attain, which means someone has to be blamed for the lack of success. Because of their differences, outsiders are the most suspect – a fact which only increases mistrust. Respect that builds trust begins with an assumption of equality: all parties bring something valuable to the relationship and deserve to be heard.'

Macbeth and Ferguson (1994, pp. 134–180) of Glasgow University offer a framework for changing to a collaborative relationship between customer and supplier. Their recommended Relationship Improvement Process has five phases:

- Phase 1. Internal commitment and team building
- Phase 2. Partner selection
- Phase 3. Supplier commitment and joint team building
- Phase 4. Measurement and improvement planning
- Phase 5. Action implementation and progress review

In the description of measurement and improvement planning (Phase 4), Macbeth and Ferguson list the main elements of successful relationships:

- Customer strategy
  - Requirements: The targets/drivers the customer sets for supply in terms of quality, delivery, cost and innovation.
  - Attitude: Does the strategy and attitude that the customer adopts towards the supplier provide the basis for a close and effective relationship?
  - Systems: Does the customer have the right procedures in place to aid the development of the relationship and smooth the supply process?
  - People: Is the way the customer organises and rewards employees the right one to support more effective relationships with the supplier?
- Supplier capability
  - Profile/Strategy: How well the supplier creates the right conditions for a successful world class relationship with customers.
  - People: How well the supplier organises, trains and uses its people resource.

  - Process: Are the supplier's processes and techniques capable of meeting the customer's needs and is that capability effectively utilised?
  - Supplier Management: Does the supplier manage its supply base in the most effective way?
- Information flow; customer to supplier
  - Technical: Does the customer pass on the right technical information at the right time?
  - Involvement: To what extent does the customer involve the supplier in its evaluation, measurement and action procedures through the disclosure of information, to enable a closer relationship?
  - Business: Is the customer's desire for a more open relationship with the supplier reflected in the type of business information it communicates?
  - People: Does the customer effectively inform the supplier about its organisation and personnel?
- Information flow; supplier to customer
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4. Partnering and alliancing in the oil and gas industries

The following text is the second of two extracts from a paper by Dr Richard Green of The Offshore Management Centre. The paper is entitled 'Collaborative relationships between producers and contractors in the UK oil and gas production industry', and was first presented at the British Academy of Management Annual Conference at Lancaster on 13 September 1994.

This extract reviews actual experience of such collaborative relationships in the oil and gas industries.

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The growth of long term and collaborative relationships in the oil and gas industry

Operator/contractor relations in the North Sea

Oil production from the North Sea started in 1975, but the operators' relationships with their contractors started several years before that, as designs and plans for development of the fields evolved.

Until the early 90s, the relationships between the operators and their contractors has been adversarial. Some operators have had very long relationships with their contractors but the contracts tended to be re -negotiated each year. Such short contracts gave the contractors no security or continuity. They were forced to take a short term view and found it difficult to invest in staff development or research.

Contractors were often selected on a basis of the minimum cost tender. Contractors were put to considerable expense in pre qualifying and bidding for contracts which they did not win. During the course of the contract there was much conflict as the operators audited and challenged the contractors' charges and the contractors tried to claim additional charges for each modification requested by the operator. The reimbursable form of many of the contracts encouraged the contractors to spin out the work beyond its target dates and to increase the costs well beyond those originally estimated. When lump sum contracts were let, they often over ran their cost estimates leading to further conflict as the contractors requested additional payment and the operators tried to resist.

Most of the time, the operators held the whip hand: they were able to dictate to the contractors what the rates paid to their staff should be and what form the conditions of employment and industrial relations should take (Thom, 1989, and Keenan and

Thom, 1990). This meant that the contractors were forced to take a short term view, and to dance to the operators' tune.

In order to reduce their dependence on any one supplier the operators tended to deal with many suppliers of the same service . Even though an operator and a contractor learned together during a particular assignment, there was a deliberate tendency to engage a new contractor for the next assignment. In that way, all the joint learning was lost.

Often in large development projects, the design was carried out by one engineering company, the fabrication by another, the installation and commissioning by another and the finished platform was operated and maintained by staff of yet another company. This led to problems with communication between the companies involved. The design and construction was often carried out with a very short term view and no regard for long term operability or maintainability. Duplication of work and documentation between the project stages was severe.

The upshot of adversarial working was that cost estimates were padded out with large contingencies, and tender submissions were accompanied by complex terms, conditions and qualifications to safeguard the contractor's position. The operator had a team of people monitoring the work of the contractor and his charges, and the contractor had to have a team of people making sure that he could fend off the oil operator's challenges and could submit counter claims for variation of work scope. The costs and wasted effort arising from this adversarial process was not challenged because oil prices were high, and for many fields, costs could be set against income when Corporation Tax and Petroleum Revenue Tax were calculated. The effect of this was that the operators' after tax costs were only about 10% of the full costs.

In the years after the oil price shock of 1986, the operators started to review their costs much more carefully and to look for ways of taking cost and waste out of their business processes . The realisation that the returns from investment in the North Sea were no longer competitive with other investment opportunities in the world was a strong incentive to gain control of the escalating costs.

In order to obtain step change reductions in costs, new ways of working were required and it was realised that by collaborating with their contractors in long term relationships, the operators could reduce their headcounts, reduce their costs and gain access to the contractor's expertise and innovation. In turn, the contractors could benefit from the stability and continuity of the market and from their much closer knowledge of their customer's business.

Developments since 1990

The earliest references to collaborative relationships in the oil and gas industry seem to start around 1985 when there was discussion of the use of turnkey contracts for 'offshore hook up'. Discussion of incentive contracts in the drilling industry also seems to have started about this time. The Construction Industry Institute mentions a partnering relationship for engineering services in the USA between Shell Oil and SIP Engineering Inc. starting in 1984 (CII [Construction Industry Institute] 1989). In the late 80s, Britoil introduced the idea of 'integrated engineering' whereby one engineering company was involved with the development of the Clyde oil field from design through to commissioning.

Although several of the operators, and especially the smaller 'leaner and meaner' ones have had very long term relationships with their contractors, and indeed must have had highly collaborative relationships, the earliest mention of 'partnering' and 'alliances' in the UK offshore industry appears around 1990. BP's partnering with Brown and Root (Hazlett and Johnston 1993) and Shell's 'WIN 90s' innovative relationship with drilling contractors (De Wardt and Van Gils 1992) are early examples.

Since 1990, many relationships, labelled 'partnering' or 'alliance', have been formed between operators and their contractors . There are perhaps of the order of 200 to 300 such relationships now. The services obtained through long term relationships range from engineering and drilling to complete facilities management of a platform accommodation. In some instances, the operators have closed down entire departments and have outsourced complete functions to their contractors. In other cases, operators have retained most of their existing staff but have changed their style of working with the contractors and have moved to an incentive based compensation structure.

The choice of which services to procure through long term collaborative relationships has depended on the operator's individual views of their strengths and weaknesses, and on where they consider extraordinary performance improvements can be obtained.

Although many of the relationships are long term, alliances of an operator and several contractors have been formed to carry out development projects or major refurbishments which will perhaps last only three years. Some major successes are claimed (e.g. BP's Hyde Project (Rhodes and Finch 1993)).

Variety of collaborative relationships

The styles of the long term and/or collaborative relationships now in place vary greatly and depend on the style developed by each operator. Some have incentive payments, others have sharing of cost savings or over runs. Some relationships are very open and

collaborative, others are more formal. This can present difficulties for contracting companies involved in different styles of relationships with several operators.

Changes to the industry structure

The drive from the operators to reduce the number of their suppliers, to seek the provision of integrated services and to enter long term collaborative relationships has affected the contracting market place. The contracting companies have formed alliances between themselves to offer integrated or 'complete life cycle' services. There have been mergers and acquisitions in the contracting market and there are now some very large contracting companies in existence, particularly in the engineering design, construction and maintenance sectors. 'It is estimated that up to 80% of engineering is currently tied up in long term partnering contracts. This has implications for the smaller engineering companies whose available market share has become much smaller' (Grampian Regional Council 1994) The smaller companies, which previously dealt directly with the operators, now must go to the larger contracting companies to obtain their work.

There are also emerging examples of the operators setting up collaborative relationships between themselves to share services such as supply ships or helicopters. Although the operating companies have always been in partnership with one another in the ownership of licences to the blocks within which the producing fields are located, on the whole the relationships between them have not been collaborative.

Competition law

Although many of the existing relationships were set up before the advent of the European Union procurement regulations at the end of 1992, the operators have to be vigilant that their relationships with their contractors are in compliance with the regulations . For operators which trade in the United States, compliance with the US anti trust laws is also a concern.

To comply with procurement regulations, all the current relationships will have to be re-tendered when they expire. However, the high cost of unravelling the close links formed during a long relationship may militate against a new contractor being selected.

Research

Current research on collaborative relationships

The advent of partnering and alliances in the UK oil and gas production industry is relatively recent. Although there have been many conferences run on the subject and many papers given, there does not seem to be any overview of what collaborative

relationships are in place, how they are structured, how successful they have been and what are the factors which make for success.

There are several groups involved in research on collaborative relationships in general. Notable among the research groups are the Supply Chain Management Group at the University of Glasgow (Professor Macbeth) (Macbeth and Ferguson 1994) and the University of Bath School of Management (Professor Lamming). Mari Sako of the London School of Economics carried out the research on the comparison of Japanese and UK customer/supplier relationships which led to the publication of her book in 1992 (Sako 1992).

Much of the general research has concentrated on the supply of goods, such as components for the car industry, rather than the supply of services, which is an important factor in the oil and gas production industry.

In a recent article Professor R M Kanter (Kanter 1994) has written about collaborative relationships and 'Collaborative Advantage'.

With the exception of the research by Matthew Beecham of Cranfield University (funded by the Offshore Supplies Office) on the response of small companies to partnering and alliances, there does not seem to be any ongoing research into the application of collaborative relationships in the oil and gas production industry.

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[For brevity, the text describing the long-term aims of this research has been removed from this point.]

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Survey

Objectives

The aim of the initial survey is to review collaborative relationships, past, current and planned and to build a data base containing basic information plus the initial opinions of some of the people (both operator and contractor) involved in the relationships.

Basic data

Because there is no single source of information about contracts between operators and contracting companies, a start has been made on gathering information from press releases of contract awards written up in trade journals such as the Financial Times North Sea Newsletter. To date, basic information on some 125 relations has been collected involving 120 companies of which about 10 are operators. There are still many relationships for which information is not yet included in the data base.

In gathering the information, 'collaborative relationship' is defined loosely as 'any long term relationship (3 years or more), or any

relationship where "partnering", "alliance" or similar word is used in the description'. If a relationship appears to have some form of incentive system or sharing of risks and rewards then it is also included. This loose definition is used so that collaborative relationships are included which the participants do not label as partnering or alliances.

Interviews

Once the relationships are identified, the aim is to interview representatives of the operators and contractors involved to find out how the relationship is structured, how it is progressing and what lessons could be learned from the experience of working with it.

The interviews are semi-structured, with about 40 questions. The questions are intended to gather basic information, to gather information about the characteristics of collaborative relationships identified by Sako (1992, p. 11) and to obtain an opinion on the health of the relationship and any lessons which could be learned from it. The questions are mostly open and each full interview takes about 60 minutes.

Because the questions are open, the responses are coded before they are entered into the database. Mnemonic codes are generated as they are needed and then further categorised to aid analysis. The selection and reporting flexibility of the database system has been used to aid the analysis of the responses.

Characteristics of the interviews to date

At present, interviews have been held with 18 people from 5 operating companies. Full information has been obtained on 18 relationships and partial information (basic data plus style of contract and compensation) for another 10 relationships. Note that interviews have not yet been conducted with contracting companies.

The types of service involved in the interviews are summarised in the following table.

Service type	Number with full information	Number with partial information	Total
Engineering design	1		1
Engineering construction	1	1	2
Engineering design and construction	4		4

Topside inspection		1	1
Subsea inspection		1	1
Fabric maintenance		1	1
Crane supply		1	1
Drilling and well engineering	2	1	3
Supply of electric submersible pumps		1	1
Ship management		1	1
Platform facilities management		2	2
Supply base and marine operations	2		2
Supply of drilling tubulars	2		2
Supply of production chemicals	1		1
Information technology services	3		3
Library service	1		1
Accounting service	1		1
Totals	18	10	28

The small sample obtained so far does contain examples of the most important relationships found in the industry. About 1260 coded responses have been generated from the 18 full and 10 partial questionnaires completed.

Summary of results from the interviews

[It should be remembered that the sample size is small and that the results were presented as initial indications only.]

The results of review of the interviews so far are described below.

Start dates, duration and values

The start dates, duration and annual values were distributed as follows:

Start year	Number
1990	1

Duration years	Number
3	6

Value range £ million p.a.	Number
Up to 5	14

1991	5
1992	5
1993	13
1994	4
Total	28

4	–
5	18
6	1
7	1
8	1
9	–
10	1
Total	28

6 to 10	3
11 to 15	2
16 to 20	4
Greater than 20	1
Average value	£8.7 million

The start dates seem to be clustered about 1993, which reflects the amount of critical review of relationships within the industry which took place in 1992 and 1993. The majority of durations is 5 years. This is the duration generally regarded as acceptable within the EU procurement regulations and is as advised by the UKOOA [UK Offshore Operators Association] Full and Fair Opportunity Committee. The interviewees were asked for a rough estimate of the annual value of the contract, but values were not obtained for all the relations. The distribution of values provided showed a wide spread of contract sizes from 1 to 40 £ million p.a.

Number of suppliers, team integration and co-location

Each of the relationships involved a single supplier. In some instances the supplier was an alliance of companies providing an integrated service. The majority (14) claimed to work as integrated customer/contractor teams. However, the customer and contractor staff in the team were located in the same place in only a small minority (4) of the cases.

Training of contract staff by customer

In 8 of the 18 relationships training was provided by the customer without charge. The comment was made that 'the customer pays anyway'. The training provided included: team building, customer awareness, safety.

Style and frequency of communication and socialising

In nearly all the relationships, communication took place through many channels and at all levels. In two of the relationships communications were all channelled through a single point of contact. All relationships claimed frequent and extensive communication including hourly or daily person to person communications plus a range of regular meetings at all levels.

In 12 of the relationships, there was some level of socialising outside the normal work environment. Organised golf matches were mentioned frequently, plus restricted invitations to each other's formal functions. Informal events, such as barbecues etc., were mentioned. In some cases, the contractor's ethical guidelines restricted informal contacts.

Maintenance of trust, team work and alignment of objectives

The most frequent comment was that open communication and open sharing of thoughts, concerns and plans helped to maintain the team and trust within the team. Team building sessions at the start of the relationship and during its course were also mentioned. The importance of having a joint contract management board which gives a lead in collaborative behaviour was mentioned and coupled with the importance of a 'joint improvement team' for the relationship.

Alignment of objectives were seen to be maintained by the incentive structure and shared risks and rewards. Other factors mentioned include: sharing long term plans, open sharing of internal performance contracts and of business challenges, joint agreement of annual objectives, regular review of objectives and their achievement by the joint management board and at other levels.

Selection of contractor, European Union procurement regulations and tendering

Many of the relationships were set up before the procurement regulations became applicable, but many people interviewed stated that the selection process was compatible with the regulations and competition law. Setting up some of the relationships just involved negotiating new contracts with incumbent contractors while others involved a pre qualification process with clearly stated selection criteria and including many companies. About half of the relationships studied were tendered. Several operators stressed the importance of 'cultural fit' between them and their contractors, before commercial considerations.

All of the relationships will need to be re-tendered when the current contracts expire. The high costs of unravelling established collaborative relationships, where the customer's and contractor's activities and business processes are closely interwoven, may militate against a change of contractor.

Transfer of people and responsibilities to the contractor

In the majority of cases there was some movement of customer's staff to the contractor. The numbers varied from just 1 or 2, to 100+ when whole functions were outsourced. Often the

individuals, formerly on contract to the operator, moved across to take up contracts with the contracting company involved in the new relationship.

The responsibilities transferred depended on the services being provided. The main point is that responsibility for planning and management of the day to day activities were taken over by the contractor, and the customer still retains responsibility for policy and strategy matters.

Contract style

The vast majority of relationships surveyed were governed by traditional contracts, with conventional terms and conditions covering most eventualities. Only one relationship had a slim, highly simplified 'umbrella' contract. This was in spite of the theory that collaborative relationships need only simplified contracts . The preference of the company lawyers seems to be to underpin the collaborative relationship with traditional terms and conditions, in case of insolvency or other circumstances where collaboration could break down. Many contracts contained explicit reference to the intention of the parties to work collaboratively. In the majority of cases, the fervent hope was that, once the pain of negotiating the contract was over, the parties would work collaboratively to get the job done and would never have recourse to the contract.

In most of the relationships there was no separate document of understanding or any other short description of the spirit of the relationship. In a few relationships, some short documents are widely available to describe the spirit of the collaborative relationship and its essential features. In many of the relationships which had traditional style and compensation, there was the stated intention to move to a more collaborative relationship in the near future.

For the majority of the relationships the customer had access to detailed information on the make up of the contractor's costs and could be said to be 'open book' agreements. In other cases the customer had the right of audit if required.

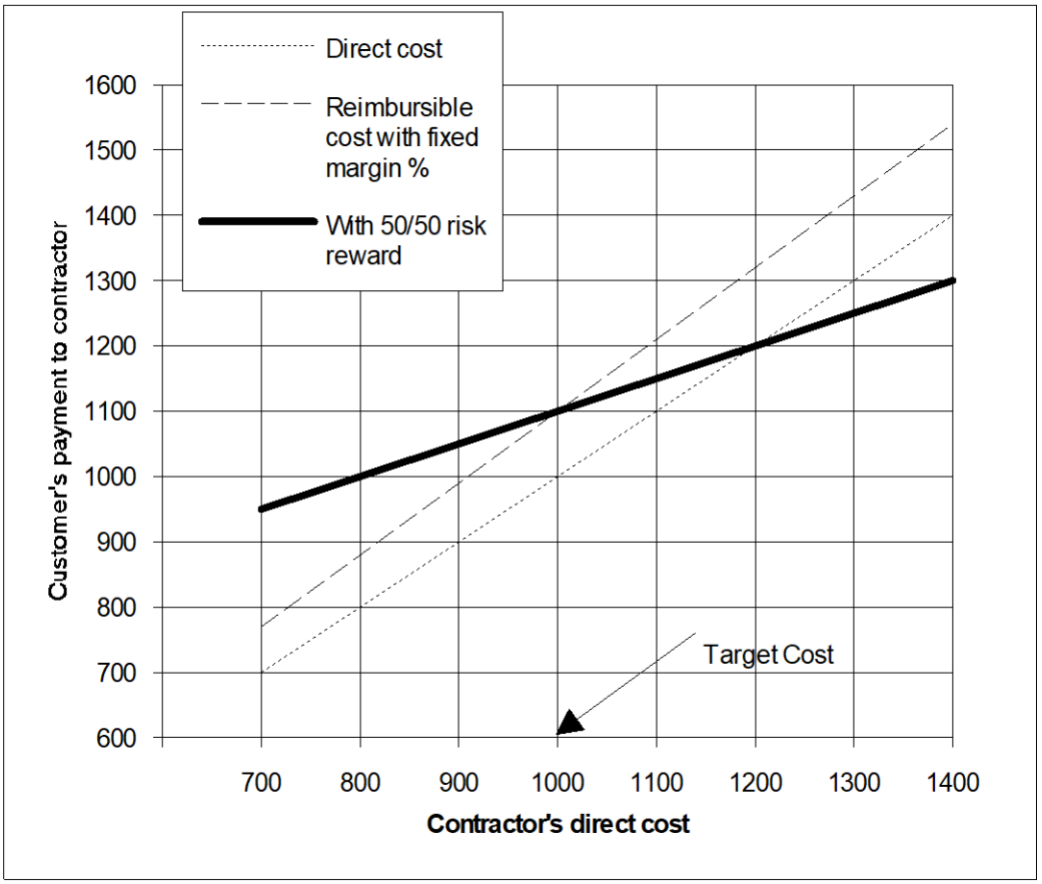
Compensation structure, incentives and sharing of risks and rewards

Compensation styles vary greatly in detail. About a third of the relationships studied are straight forward reimbursable contracts with no incentive structure. For many of these the intention was soon to develop a structure which gave reward for performance rather than quantity of resources used. In one or two of the reimbursable contracts, the customer could make additional payments to reward exceptional performance.

In one third, profit payments are based on a range of performance measures (safety, productivity, timeliness of reports, quality, production, achievement of milestones, etc.). The contractor's direct costs and some agreed overheads are paid by the customer. Only the profit levels are at risk in that they depend on performance of the relationship as a whole.

In the remaining third, profit levels are still affected by performance measures but the compensation is structured to encourage the contractor actively to reduce the costs of the service. A target cost for the year, or package of work, is set and then cost savings or over runs from the target are shared between the customer and the contractor. In many cases the savings are shared equally, but in some cases the customer takes a higher proportion or even 100% of the over runs. There are many similarities between this style of compensation and a traditional 'target cost contract' (Scott 1974, p. 40). The new feature is that the compensation is coupled with the intention to work collaboratively. Thus risks and rewards are shared; both contractor and customer gain if costs are saved and both can lose if costs over run.

The diagram below gives a simplified example where the target direct cost is 1000 and the contractor's margin at the target cost is 10%. If cost savings or over runs are shared equally then the contractor's % margin will increase as costs are saved and will decrease if there is an over run. If the over run is large then there is a risk that the contractor's costs may not be covered. The situation where direct costs are reimbursed plus a fixed % margin is also shown for comparison. There are many variants on this basic structure.



The temptation to cut costs at the expense of safety or production is reduced by the payment of the profit elements being made contingent on safety and production performance.

This style of compensation can be applied by a customer to a group of contractors who all share costs savings and over runs . Thus to make the gains all parties have to collaborate.

Each customer seems to have developed a favoured compensation style which is applied to many contracts. There is also learning between the companies as new relationships are set up.

Other incentives to perform mentioned by the people interviewed include fear of loss of contract (a throw back to adversarial styles) and the contractor having its professional reputation to maintain.

There is still an ongoing debate within some companies on whether incentives are beneficial (are they just the old fashioned 'carrot and stick'?) and whether incentives are needed in truly collaborative relationships.

The questionnaire asked specifically whether safety performance affected the level of payment to the contractor. In 6 of the 18 relationships safety performance did influence the amount paid. As would be expected, the relationships where safety is an issue are either engineering or drilling/well construction.

Collaborative score

The interviewees were asked to score relationships on a scale from 1 to 10 where 1 is highly adversarial and 10 is highly collaborative . The resulting scores are as shown below:

Collaborative score	Number
5	2
6	2
7	5
8	7
9	1
10	1
Total	18

All the respondents viewed their relationships as being towards the collaborative end of the scale. Many people suggested that the relationship was still evolving and that at the start it was adversarial (level 3 or below).

Reasons given for lack of collaboration were: internal customer politics, internal customer communications, staff feeling threatened and reacting negatively to the need for collaboration. The setting up of partnering and alliances at the same time as major internal restructuring of the customer caused uncertainty and delays in the development of collaboration. Cost pressures were mentioned as reasons for breakdowns in collaboration. Others considered that they must keep the relationship on a 'business footing' i.e. slightly adversarial. Some people emphasised that a 'cosy' relationship, where nothing was achieved, was not what was wanted. The emphasis was on performance and the joint achievement of tough targets.

Benefits expected and benefits gained

The expected benefits mentioned most often were reductions in customer costs and manpower associated with the service. Removal of high fixed overheads and a move to a 'pay as you use' service was also quoted. Despite the reduction in costs, the expectation was that the service would be of similar or better quality than before. Simplification of business process, making the cost of the service more visible, gaining access to contractor's expertise were other expectations mentioned.

The majority of the respondents suggested that they were gaining the expected benefits. Several had achieved substantial cost reductions with improved service levels and productivity. In one case, more fields were being serviced for a lower cost . One customer mentioned the gain of being able to devote more time to value adding activities. There was some concern about how the momentum of improvement can be maintained once the initial large savings have been made. Some respondents admitted that, although substantial savings and quality improvements were being made now, in the early days service deteriorated and costs were actually higher.

About half the respondents said that they had attempted to calculate the value of the benefits . Some mentioned the use of bench marking exercises. Others said that the greater efficiency of the new way of working was indisputable and that previous project track records had been out performed.

Open behaviour and free flow of information

The majority of respondents (15) claimed that open behaviour was the rule in their relationship. Some mentioned that although senior management are behaving openly, at lower levels , including middle management, there is still a climate of suspicion, especially where people felt threatened.

Many respondents (14) suggested that information flowed freely in their relationship. In some cases, the contractor had open access to the customer's information systems. In one case, lack of information technology was mentioned as a factor which hindered the development of the relationship.

Lessons learned

Comments were invited on problems which arose during the evolution of the relationship, things that should have been handled differently and general lessons learned. Many different comments were made. This section aims to distil some of the major themes.

- The creation and initial development of the relationship

  Thorough analysis and planning before the new relationship is implemented is very valuable. The business processes affected by the new relationship need to be understood. Some companies have invested considerable time and effort into analysing and documenting the business processes, others have invested less.

  Where possible both parties should visit other companies which are involved in collaborative relationships and learn from their experience.

Clarity of purpose is important when setting up a collaborative relationship. General principles and expectations should be agreed before the contractual detail is discussed. Too early descent to contractual details and involvement of lawyers and contracts professionals can hinder the successful development of the relationship.

Openness, honesty and trust are essential during the development of the relationship.

It is important that the terms and conditions of the relationship are clearly understood by all parties involved. The risks involved in the relationship need to be balanced acceptably between the customer and the contractor. If there are going to be performance incentives involved in the relationship, then they need to be considered carefully well before the implementation date. Incentive schemes which do not result in the desired behaviour can lead to sub optimisation and can require costly restructuring.

Other existing contractors may well be affected by the development of a new collaborative relationship. The interfaces to them must be considered so that they can be encouraged to support the new relationship.

Internal politics, poor communication or lack of trust within or between customer departments can threaten the successful working of a collaborative relationship and it is in the customer's interest to resolve these issues.

Often the customer staff setting up a collaborative relationship may be different from the group who are the final customers of the service to be provided. It is very important that the final customers are involved in setting up the relationship. Other parts of the customer organisation who are in the 'supply chain' for the services should be involved also (e.g. the supply bases).

The development of collaborative relationships with contractor companies has often taken place against a background of major restructuring within the customer company. The resulting uncertainty and the multiplicity of changes taking place can seriously affect the smooth development of a collaborative relationship. It is important to realise that it takes time to build up trust and good relations, and that they can be damaged very quickly by inappropriate behaviour. Behaviour of both customer's and contractor's staff must change to allow the benefits of collaborative working to be attained. Staff or managers who continue to hinder the collaborative working must be counselled and/or re-deployed elsewhere.

Staff resistance can severely hinder the development of the relationship. The development and implementation of a

collaborative relationship can be a time of uncertainty and distress for the staff involved. Customer's staff can feel threatened by their job being taken over or being made redundant. Similarly contractor's staff can feel threatened by the new ways of working where their level of responsibility can increase greatly. Morale and service levels can drop drastically if the implementation is protracted. It is important that the staff involved are counselled so that they know and understand what is going on and what the future holds for them.

Contractors must ensure that they have staff who are competent to perform the project management or middle management activities previously performed by customer's staff.

It is very important to have an implementation plan for the new relationship which is available to everyone who is affected. The plan should include realistic time scales rather than time estimates which are clearly not feasible. There must be sufficient funding to enable the implementation plan to proceed, including the ability to fund the contractor during the transition period. The customer must be prepared to assist the contractor during the implementation period, either by training, funding or providing staff.

It is important not to neglect the information technology and data management issues during the development of a new relationship. Limitations or incompatibility of IT can hamper communication between the parties and uncertainty about who is responsible for data can dislocate the smooth development of the relationship.

- Maintenance of the ongoing relationship

  Trust at senior levels within the relationship is essential and senior people must set a good example to their staff. Lack of trust or commitment at the highest levels can undermine the success of a relationship. It is important that the ideas and benefits of collaborative working are explained to all staff involved and that the intention to work collaboratively is reinforced frequently. A collective desire on both sides to make the relationship work is essential.

  It is important to keep monitoring the performance of the relationship, and it is unwise to just outsource an area of activity and forget it. The contractor has to be encouraged to seek novel and cost saving solutions where they are available rather than using traditional solutions which can be over expensive. An open relationship does allow for harder, more direct discussions and criticism than the traditional relationship. It is important to be open about mistakes so that lessons can be

learned from them. Contractors should be encouraged to raise relationship problems when they see them rather than passively accept them.

Where a service depends on several contractors, it is important to involve them all and keep them informed even if they are not all in a collaborative relationship.

The customer needs to ensure that its staff involved in the relationship have the appropriate interpersonal skills and realise the intention to collaborate. It is important that the contractor is given clear and consistent messages whoever he speaks to in the customer's organisation. The customer's staff have to learn to let go of some of their former activities and the contractor's staff must learn to take responsibility for them.

Theory and practice

Reference has already been made to Sako (1992), Macbeth and Ferguson (1994) and Kanter (1994) on features of collaborative relationships, and the factors which make for success . Although the sample of relationships surveyed so far is small and only the customers' views have been considered, it is possible to relate some of the information gathered to points raised by Sako, Macbeth and Ferguson and Kanter.

When considering the features of collaborative relationships identified by Sako (see page 8), we see that all the relationships surveyed had a single supplier, but, in principle, the contractors would have been selected by a bidding process and the initial term of the relationship would be restricted to about 5 years. European Union procurement regulations tend to militate against the formation of single supplier relationships with a long duration agreed at the outset. With one exception, all the contracts are traditional and aim to cover all eventualities, whereas Sako suggests that, in a fully collaborative relationship, contracts could be highly simplified and could even be oral rather than written. In the relationships surveyed, many of the customers provided some training for contractors' staff without charge. On the whole, the communications between customer and contractors in the relationships surveyed were extensive, frequent and multiple, but the level of socialising beyond the immediate business was not great. About one third of the relationships had a compensation structure which enabled the sharing of unexpected gains or losses.

Insufficient information was collected to be able to review the relationships against all the factors identified by Macbeth and Ferguson (see page 12). Some parallels can be drawn, but it should be remembered that only operators' views have been gathered so far.

Customer strategy: Customer attitudes vary among the relationships surveyed. There is almost universal recognition that the customer needs to look at more than just price. There are many cases where customer and supplier (contractor) are working together to reduce costs, and where the benefits of a successful relationship are shared. In every case, there is long term commitment to the contractor by the customer. In nearly all of the cases, there is some open involvement of the contractor in the decision making processes and there have been real attempts to develop an open relationship. Several of the relationships are structured so that the contractor has a strong interest in the success of the customer's business through profit payments being linked to production achieved, safety performance and overall cost reduction.

In almost all the relationships surveyed, customer systems are being evolved to aid the development of the relationship. All the operators are aware of market costs and margins and they all have well developed methods for pre-qualifying and selecting contractors. Some operators have invested considerable effort into analysing and documenting the elements of the relationship, while others have allowed systems and procedures to evolve as the needs are identified. Many, if not all, the operators will use their resources to assist the contractor to solve day to day problems and pursue operational improvements.

The cultures of the operators surveyed are still evolving so that their staff become more attuned to working in collaborative relationships. There were many comments that some staff members at all levels were finding it difficult to make the change. Operators are investing in information dissemination, training, joint improvement teams, etc. to encourage the growth of successful relationships.

Information flow within relationships

In all the relationships surveyed, the operator considered that information flows freely and problems are not created by lack of information. Most operators said that there was open sharing of the organisational, business target and planning information needed by the contractor to work effectively and make performance improvements.

A few of the issues raised by Kanter in her recent paper are listed on page 11. She suggests that 'value chain relationships', such as the customer/contractor relationships in UK oil and gas production, should fall into the strongest collaborative category, and the information gathered so far supports this. There is recognition among the five operating companies surveyed that collaborative working should and does bring benefits, and the intention seems to

be to move towards more rather than less collaboration. Kanter's suggestion that too early involvement of lawyers and contracts professionals can hinder the development of collaboration is echoed by some of the comments made in the interviews. Again, the comments received reflect some of Kanter's suggestions of how the commitment between companies, forged at senior levels, can be threatened by broader involvement.

The next steps

Clearly, there is a considerable amount of further work to be done before the initial survey of existing relationships can be regarded as complete. Many more relationships need to be examined, and it is essential that the contractors as well as the operators are interviewed. Information gathered in the survey will be analysed and published.

Following a review of the issues raised in the survey, some topics will be selected for more detailed analysis either by case study or further surveys. Issues which are under consideration include: gathering financial evidence of the benefits of collaborative rather than traditional contractual relationships, the factors which make for success in collaborative relationships, the role of trust in collaborative relationships, the measurement of growth of trust in collaborative relationships.

Conclusions

The topic of collaborative relationships in the UK oil and gas production industry is not well researched and has many aspects of potential interest to researchers and the industry. Research on this topic is in progress at The Robert Gordon University in Aberdeen and an initial survey of collaborative relationships is under way.

Information gathered from the operator's (customer's) view of 18 relationships shows a variety of degrees of collaboration between operators and their contractors and a variety of styles of contract and compensation structures. Operator's comments on their experiences in building relationships reflect many of the issues identified by researchers on collaborative relationships in other industries.

Work will continue to complete the initial survey as a precursor to more detailed analysis of selected issues.

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5. Some views on partnering and alliancing

Topic Activity 3
(Self-required)

You have now seen how partnering and alliancing has been applied in the oil and gas industry – particularly in the North Sea. Review these data and comment on:

a. the pluses and minuses of this approach from the point of view of an oil company;

b. the pluses and minuses of this approach from the point of view of a large service company.

5.1. A drilling contractor's views

- Integration and incentive contracts for drilling operations are seen as a logical development of the oilfield service industry.
- Reduction in costs and associated improvement in productivity and quality has pushed integrated services to the forefront.
- The fact that many operators are questioning their need to be in the drilling and other non-core businesses at all adds another dimension to the services that are required to be integrated.
- The integration of services will be realised in terms of innovative incentive contractual solutions and, for some, as strategic alliances.
- Ultimate objective – a quality product at a lower total cost than currently being achieved using numerous contractors and per diem charges.

5.2. A drilling service company's view

- In the past, contractors could not offer quality or performance guarantees owing to their very limited workscope and dependency on significant input from others.
- Integration of services has improved their ability to offer quality guarantees and cost reductions. This is because:
  - the dependence on the performance of third parties is reduced;
  - there is evidence that an integrated team-working approach to achieve well-defined goals is inherently more productive;
  - a reduction in head-count costs is possible when manpower is utilised for a broader workscope;

  - overlap and duplication of overhead costs amongst contractors and between contractors and operators can be reduced.

- It is productivity gains with a few contractors working towards well-defined goals that will offer the most overall project cost-saving potential.
- The optimum contract has been achieved when the objectives of the operator are aligned with the incentives of the contractor. This requires the operator to be very clear what the goals are in a particular contract.
- For incentive contracts, the contractual relationships between contractors involved in the drilling operation becomes important. Equally important is the working relationship between the two parties.
- For the more enhanced forms of incentive contracts, for example footage and turnkey, these relationships become of paramount importance.

6. The contractual framework

6.1. An introduction

- Incentive contracts: a term applied to those contracts that offer some form of remuneration for the standard of work performed.
- Definitions for different contract models are not uniformly utilised across the oil industry; current models include:
  - **Bonus/malus payments** against an agreed rate of progress (e.g. the drilling depth/time curve); often referred to as 'beat the curve'. This model is limited as it is usually based on a day rate, so contractors' profit can still rise if more days are sold. However, in the drilling industry this is the most commonly used incentive contract model used at present.
  - **Unit of output contracts** were the drilling industry norm in the late 1960s (footage contracts), when drilling contractors offered a range of services and were remunerated per unit of product delivered (ultimate responsibility for the well and catastrophic risks were the preserve of the operator).
  - **Turnkey contracts** in which a product or service is provided for a lump sum price.

    In the case of the drilling industry, the 'product' is a drilled well, drilled for a lump sum price. The well was drilled and ownership handed over to the operator upon completion. (Until the handover took place all risks for the drilling of the well and for any eventualities – including catastrophic ones – were assumed by the contractor.)

6.2. New contracting concepts

6.2.1. Performance-related contracts

Increasingly, operators are recognising that their desired product or service involves not only price but also includes elements of performance and quality.

The integration of these concepts into a contract is illustrated below by reference to the drilling industry.

In the desire to construct a quality well bore at the lowest possible cost, contractors should be rewarded for work well done. This is best achieved by setting well-defined objectives.

- The performance and quality contract remunerates the various contractors such that the overall project objective is achieved by defining the individual objectives of each contractor.

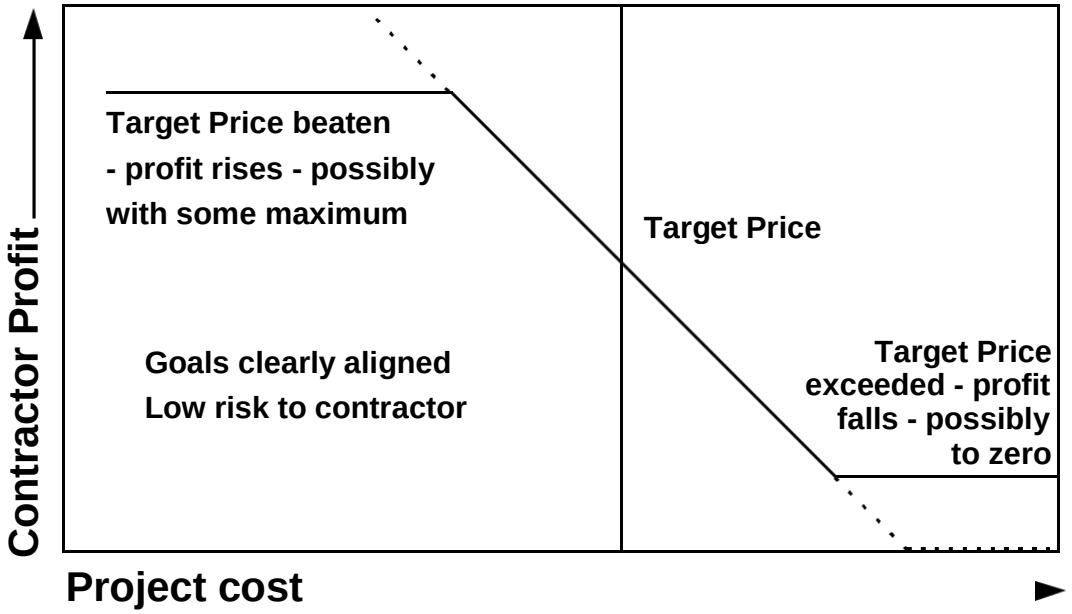
- Quality and performance factors need to be carefully defined for each situation.
- Once the financial terms for the service have been agreed, a percentage of the contractor's anticipated revenue is set aside.

  Depending on the performance of the contractor vis-à-vis the specific objectives that have been mutually agreed upon, the contractor earns part, all or more of that percentage of revenue set aside.

  The historical contractor performance should be used such that the amount set aside should, on average, be earned back.

  An increase or improvement in performance, compared with the contractor's track record, is thus rewarded and a decrease is penalised.

6.2.2. Gainshare contract

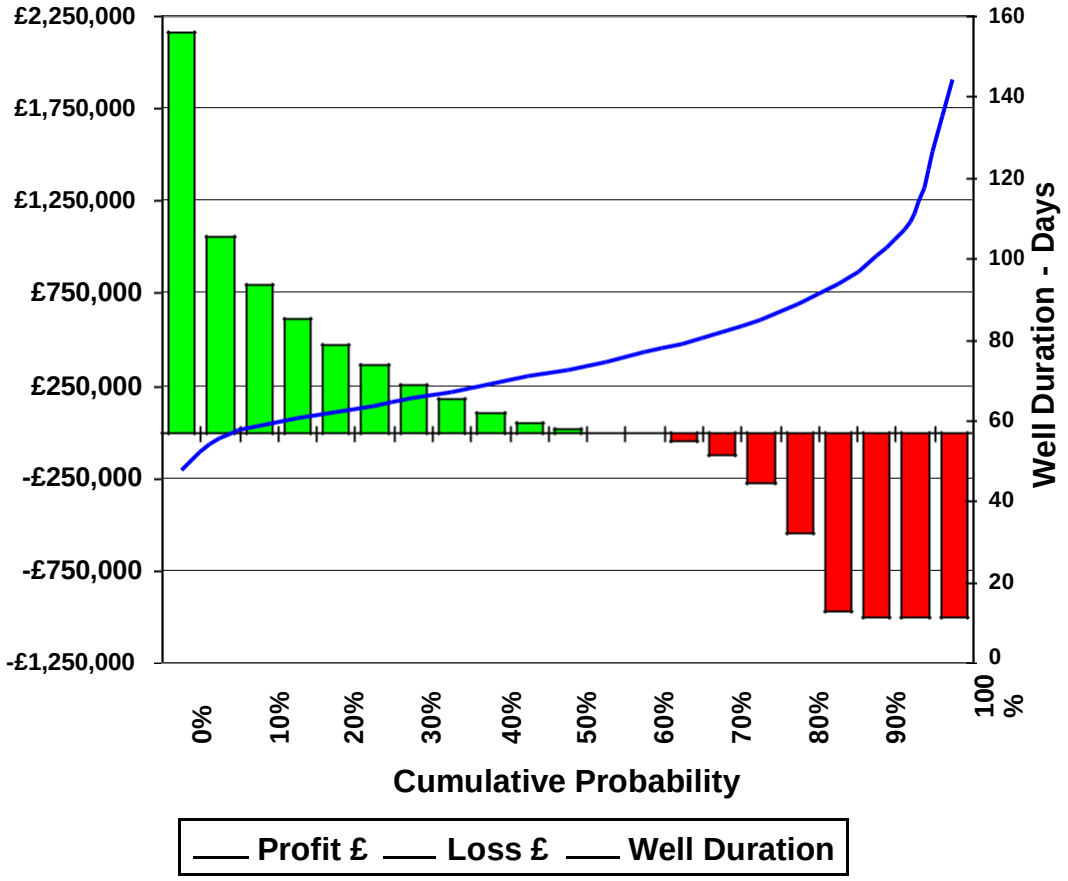


In this example,

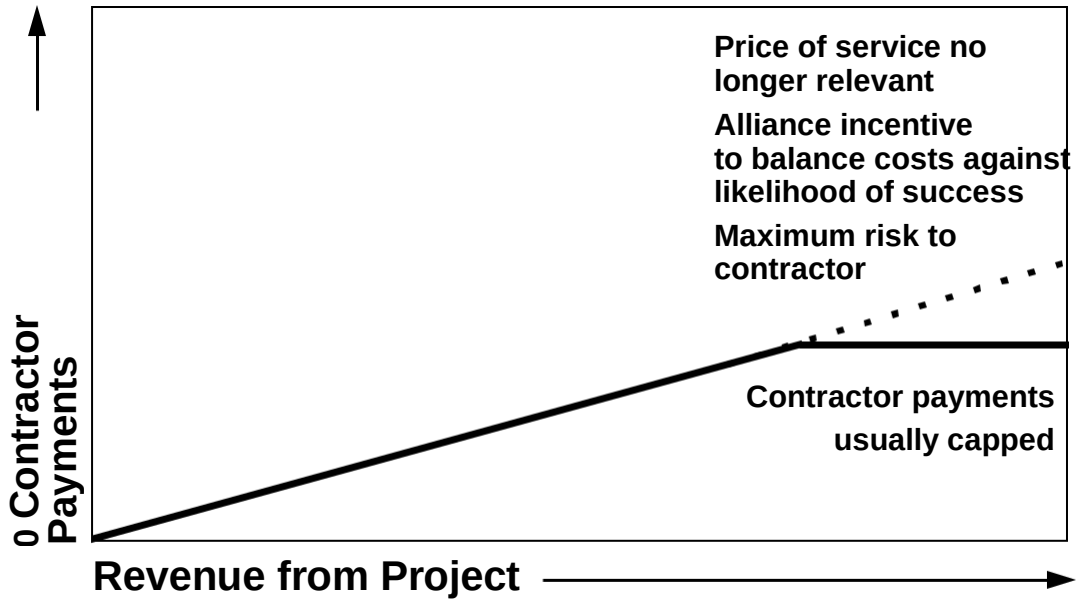
- If the project cost meets the agreed target, the contractor makes an agreed level of profit.
- If the project cost is lower than the agreed target, then the contractor receives some of the savings as a reward. This is pure profit to the contractor, and is therefore a considerable incentive. Often, the savings are split 50/50 between client and contractor.
- Conversely, if the project cost is higher than the agreed target, then the contractor shares some of the cost over-run as a penalty. Often, the over-run is split 50/50 between client and

contractor, although there is usually a limit on the contractor's exposure.

A practical example of this type of contract is illustrated below. An agreed target cost has a 50% probability of being achieved; 10% above or below makes little difference to the contractor's profit. However, a significant reduction in project costs leads to substantial profit for the contractor, whereas a significant over-run is costly to the contractor.



6.2.3. Payment linked to output



In this example,

- there is no initial payment for the service provided;
- if the project is successful, the contractor receives payment related to the result (e.g. oil production, with payment of, for example, £1 per barrel up to an agreed ceiling);
- conversely, if the project is not successful, the contractor receives no payment.

7. The CRINE initiative, OGITF, PILOT and beyond

Uniquely, the UK has seen a sustained effort to provide a forum in which government, oil companies and major service companies can talk openly about issues facing the industry. This section of the topic reviews the evolution of this relationship.

7.1. The CRINE initiative

7.1.1. Introduction

Cost **R**eduction **I**nitiative for the **N**ew **E**ra – usually condensed to the acronym CRINE – was an oil industry initiative which sought to change the way in which business is conducted, with the overall aim of reducing costs.

7.1.2. The history of CRINE

Pre-1990	There had been various uncoordinated efforts to address the impact of falling oil prices (after 1986)
1990–1992	There were several major projects under way, and cost-reduction initiatives were put on the back burner
1992	CRINE was born as an operators-only group of project managers concerned to reduce the cost of new projects. Representations were made to government concerning the poor competitive position of the UKCS. A conference on UKCS costs was held in Aberdeen
1993	A joint operator/government working group on UKCS competitiveness was formed. In February 1993, their preliminary report recommended increased contractor/vendor participation. The CRINE report was produced in December 1993, and launched at the first CRINE conference in London
1994	The CRINE Secretariat was established, with a full-time director (Mr Vic Tuft – on secondment from Enterprise Oil) to carry the initiative forward. A CRINE structure of committees was established. Increasing participation from all sectors of the industry was achieved. At the second CRINE conference in Aberdeen in

	November 1994, the DTI announced £100,000 worth of government support for the initiative
1995	A complete programme of deliverables was published
1996–1997	CRINE struggling to find a role
1999	CRINE redefined Oil and Gas Industry Task Force LOGIC and IFT launched

7.1.3. The CRINE structure

The CRINE initiative was structured as follows:

The CRINE Steering Committee – comprising senior managers from many operators, contractors and vendors.

1	**UKOOA Engineering and Development Committee** • Common specifications for key equipment • Common recommended codes of practice
2	**Documentation and Certification Subcommittee**
3	**Quality Management Subcommittee** Accreditation bodies (e.g. QUASCO) • Common prequalification – technical, legal and commercial, EU
4	**Contractual Subcommittee** • Risk and reward • Common, non-adversarial language • Cost measurement
5	**Developments Subcommittee** • Production consents • Pipeline authorisation
6	**Cultural Change Subcommittee** • Training and education • Communications • Conferences • Sharing best practice
7	**CAD/CAM/IT Subcommittee**
8	**Subsea Subcommittee**

7.1.4. The CRINE deliverables

1	Twenty-five functional specifications were created during 1994 and 1995, representing hundreds of man years of industry effort: • Main power generation package • Power transformers • Gas compression package • Firewater pumps • Emergency generator package • Offshore pedestal crane package • High-pressure pumps • Pressure vessels – separators and gas scrubbers • Electric motors • High-voltage switchgear • Low-voltage switchgear In preparation: ♦ Glycol dehydration ♦ Chemical dosing ♦ Pig launchers ♦ Heat exchangers ♦ Filtration packages ♦ Heating, ventilation and air conditioning ♦ Instrumentation control, shutdown, fire and gas systems ♦ Oil and gas metering ♦ Telecoms ♦ Subsea Christmas trees ♦ Wellhead control systems ♦ Subsea control modules ♦ Wellheads and surface Christmas trees ♦ Electric submersible pumps ♦ Air compressors
2	Common working practices
3	Quality management system • Pilot study • Establish an industry-wide body
4	Documentation guidelines
5	Contracts • Guidelines for alliancing contracts • Procurement/purchasing/tender evaluation
6	Cultural change • Conference • Roadshows for small companies • CRINEWatch newsletter • Education and training (including CRINE drivers programme)
7	Cost measurement (capturing present

	gains)	
8	Subsurface – drilling/seismic/geophysics	Never materialised
9	Liaise with Norwegian initiative (NORSOK)	Happened to a limited extent

7.1.5. CRINE achievements

The CRINE conferences were used as a platform to publicise a number of projects that were made successful using the CRINE philosophy.

These include:

CRINE concept	Successful project
Simplified commercial terms	Liverpool Bay – operator and fabrication contractor
Improved and simplified internal procedures	Gannymede – main contractor
Application of alliance principles	Andrew Field – three alliance partners
Reduction in documentation	Several vendors
Use of simplified specifications and vendor relationships	Harding – operator and vendor
Design simplification and value engineering	Britannia – operator
Use of simplified specifications and common working practices	Armada – operator and design contractor
Operators complete use of partners' design specifications (from a similar installation)	Galahad – operator and partners

7.1.6. Industry views

The CRINE initiative came from the 'platform-building' end of the business, and – as shown above – its publicised successes are dominated by examples from this facet of the oil industry.

As a result, the companies that publicly associate themselves with CRINE tend to be contractors and vendors in the platform-building end of the business – design houses, fabricators, offshore installation contractors and the related divisions within the oil companies.

Although similar concepts are being applied in the field operation activity which dominates the Aberdeen market, little is being attributed the CRINE. It is possible that the Aberdeen/London divide is responsible for this, although the long-term nature of some of the Aberdeen-based initiatives may encounter European Union competition law problems – so perhaps a deliberately low profile has been adopted.

Some operators are philosophically opposed to some of the CRINE concepts such as 'trusting the contractor' – so are not involved in the CRINE initiative.

7.2. The Oil and Gas Industry Task Force (OGITF)

7.2.1. Introduction

CRINE evolved gradually over the period 1996–1998, becoming the 'CRINE network' as it sought to carry the CRINE message to large numbers of people and large numbers of companies. CRINE gradually lost momentum as the high-profile supporters returned to their primary roles in the oil and gas industry. A relatively high oil price and an element of 'hype fatigue' helped this.

However, the legacy of CRINE was an understanding in government and at the highest levels in the oil and gas industry that the UK would cease to be an attractive place for investment in the oil and gas industry if the practices and 'norms' of the first 25 years in the North Sea did not change.

7.2.2. A task force is launched

As a result, the Oil and Gas Industry Task Force (OGITF) was announced on 17 November 1998. It brought together government departments and the oil and gas industry to develop mutual understanding of the key issues for the industry both in the short term and over the next 10 years, including, for example, technology development, environmental policies and knowledge management requirements.

Working within the parameters set by government policy, the OGITF was asked to:

- develop strategies for reducing the cost base of UK oil and gas operations against the background of low oil prices, the prospects for world demand, the mature nature of the North Sea and conditions in other UKCS areas;
- examine and prioritise initiatives aimed at improving the competitiveness of the UK industry; and
- make specific recommendations by summer 1999 for actions to be taken by the industry or Government.

Participants included:

Chairman John Battle (*later* Helen Liddell)	Minister for Energy and Industry, DTI
Vice Chairman Lord Macdonald	Minister for Business and Industry, Scottish Office
(*later* Henry McLeish)	Minister for Enterprise and Lifelong Learning, Scottish Executive
Mike Bowyer	Managing Director, PES International Ltd
Malcolm Brinded	Managing Director, Shell UK Exploration and Production
Bobby Buirds	Secretary of the Inter Union Offshore Oil Committee
Syd Fudge	Chief Executive, Kvaerner Oil and Gas Ltd Chairman, Offshore Contractors Association
Francis Gugen	Managing Director, Amerada Hess Ltd Chairman, CRINE Network Vice-President, UKOOA
Mark Hope	Director, Enterprise Oil Chairman, Brindex Vice President, UKOOA
Alan Jones	Director and General Manager, BP Exploration Honorary Treasurer, UKOOA
James McCallum	President, Global Marine Integrated Services – Europe Chairman, Stretch Performance Network
John McDonald	Managing Director, Texaco (UK) North Sea Ltd
Tom Smith	Chairman and Managing Director, Nessco Ltd small- and medium-sized enterprise (SME) representative on OSO Board
Sir Ian Wood	Chairman and Managing Director, John Wood Group plc Chairman, Scottish Enterprise
Dinah Nichols	Director General, Environmental Protection, DETR
Steve Robson	2nd Permanent Secretary, Treasury
Anna Walker	Director General, Energy, DTI
Geoff Dart	Director, Oil and Gas, DTI
John Rhodes	Director, IEP, DTI
Godfrey Robson	Undersecretary, Economic and Industrial Affairs, Scottish Office
Jim Campbell	Director IEP4, DTI
Julian Thomson	Group Manager, Marketing and Communications, Stolt Comex Seaway Ltd

Secretary Keith Mayo	Assistant Director, IEP4, DTI

7.2.3. OGITF deliverables

The OGITF report 'A Template for Change' was published in December 1999. The recommendations made were:

- **Vision**: by 2010, there could be 100,000 more jobs in the UK supported directly and indirectly by UKCS-related activities than there would be otherwise, if new technology cuts costs, and export performance, is improved. A target to increase the UK's share of the world's oil and gas supplies market for goods and services by at least 50% (£2bn) over the next five years was set.
- **Competitiveness**: a new supply chain body (LOGIC) was proposed to promote best practice throughout the supply chain based on the Competitiveness White Paper model. It has subsumed and taken forward the work of various existing bodies on best practice, benchmarking, etc. The development of a new 'internationalisation' plan for the supply industry.
- **Innovation and technology**: new innovation and technology facilitator organisation to improve the flow of new technology to market.
- **Sustainable development**: improved industry/non-governmental organisations/government forum. The principles of a cost-effective environmental regulation. A pilot emissions trading scheme was recommended.
- **Skills and technology**: new national training organisation group to bring coherence to training provision. A method to improve the forecasting of skills needs, planning of training and education to meet them. Pilot for an employee database, to ease recruitment and employment.
- **Regulation and licensing**: new licence trading mechanism (Licence Initiative for Trading; LIFT) which is an Internet-based 'virtual trade fair' for promoting licence trading and oil company asset portfolio management. Another web-based initiative DEAL (Data Environment Associated with LIFT) will provide an index and directory of available technical information and data. Exercise to cut 'red tape'.
- **Fiscal**: improved procedures for royalty remission and collection.

7.3. PILOT and its siblings

7.3.1. PILOT

One of the key recommendations made by the OGITF was that a senior-level government–industry forum be established to ensure that major issues were identified and addressed promptly.

This body is called PILOT. In establishing PILOT, the OGITF balanced several delicate issues:

- PILOT members must be able to discuss issues that may be commercially or politically sensitive, without prejudicing the interests of the industry or government.
- At the same time, PILOT needs to command widespread support and commitment within both industry and government if it is to be successful.
- PILOT will achieve this only if the thrust of its activities are well known and understood. A large number of stakeholders who are not members were already involved in the process of establishing PILOT, and this network needed to be expanded.

PILOT is specifically charged with:

- supporting and monitoring the initiatives developed by the OGITF;
- continuing to develop strategies for reducing the cost base of UK oil and gas operations against the background of the mature nature of the North Sea and conditions in other UKCS areas;
- examining and prioritising initiatives aimed at improving the competitiveness of the UKCS as an oil and gas development province and the supplies industry at home and abroad;
- continuing to communicate with and involve all stakeholders in its work.

An interactive PILOT website (www.pilottaskforce.co.uk) has been established to provide information on the activities and progress of PILOT and its workgroups. To ensure that the wider audience is kept up to date, minutes of each PILOT meeting are posted to this website 5 working days after the members receive them if there are no objections.

To enable PILOT to operate at a practical level:

- It operates under Chatham House rules – meaning that comments are made anonymously.
- Members serve in a personal capacity, but draw on their experience as members of companies, departments, industry bodies etc.

- Members will not send substitutes, but may each bring an assistant to observe.
- Members will be entitled to discuss possible changes of policy or practice without implying the approval of their companies, ministers, etc.
- Members will decide how to take forward further work, using workgroups, facilitators, consultants, etc.
- Papers for meetings will be sent to members to arrive at least 5 working days before meetings.
- Notes recording the discussion at each meeting are posted on the PILOT website after members have had 5 working days to comment. These papers will be automatically posted unless the members decide that in the case of a particular paper it would be inappropriate to do so.

PILOT has recently been renamed as the Industry Leadership Team (ILT).

7.3.2. LOGIC (Leading Oil and Gas Industry Competitiveness)

LOGIC is one of the two major bodies created to actually implement the recommendations of the OGITF.

LOGIC is a not-for-profit company, limited by guarantee, and with a permanent staff of seven. Its primary objective is to improve the supply chain management as it affects the oil and gas industry.

All of the CRINE network functions have been taken on by LOGIC – so it undertakes individual company supply chain consultation with the goal of reducing supply chain costs.

It has also launched several supply chain initiatives aimed at driving cost out of whole areas of business.

Heliseat.com

The aviation sub-group of the LOGIC logistics group identified three areas which appear to offer great potential:

1. Flattening the flight schedule, including coordination of flights. The goal here is to reduce the overall number of flights by sharing aircraft.

2. Establishing a joint industry, scheduling, booking logistics cell as a mechanism for delivering the reduced number of flights.

3. Reducing the number of helicopter terminals in Aberdeen from two to one (either physical or virtual).

This work is currently in progress, primarily centred around a secure helicopter seat-booking web service – www.heliseat.com.

For more details on LOGIC and its activities, you are referred to the LOGIC Business Plan – available from www.LOGIC-oil.com and provided with these notes.

Funding of LOGIC was originally from five key trade associations (which are the shareholders):

- UKOOA – the United Kingdom Offshore Operators Association
- OCA – The Offshore Contractors Association
- IADC – the International Drilling Contractors Association
- IMCA – the International Marine Contractors Association
- EIC – the Engineering Industries Council

These trade associations contributed an annual subscription. In addition, funding is provided by the UK government Department of Trade and Industry.

Following extensive consultation across the industry and with government, and a review of the supply chain services required by industry, the re-structuring of LOGIC began in late 2003 and culminated in April 2005 with two separate organisations:

LOGIC – now a not-for-profit, wholly-owned subsidiary of the UK Offshore Operators Association (UKOOA) . LOGIC owns the "intellectual rights" to the cross-industry initiatives mentioned above and acts as their custodian to preserve their unfettered availability, and to promote and develop their use to improve industry practice.

Logical Advantage Ltd (LAL) – a separate and independently owned commercial organisation under contract to LOGIC to provide specific services to manage and support the cross-industry initiatives on LOGIC'S behalf.

LOGIC owns the intellectual property to the following initiatives, which are managed on a day-to-day basis by Logical Advantage limited:

Vantage POB – a centralised system tracking the movements of offshore personnel.

Master Deed – introduced in 2003 to streamline asset trading in the North Sea.

Industry Mutual Hold Harmless - establishes a contractual relationship between

different companies working together, which means that, in the event of an accident or damage to property, each company will be responsible for its own, avoiding complex litigation procedures involving claims and counter claims.

Aviation Mutual Hold Harmless – run along similar lines to the Industry Mutual Hold Harmless but between helicopter companies, enabling helicopter sharing.

Industry Standard Contracts –available electronically to cover a broad range of operations in the UKCS, and widely used across the contracting community when tendering for new work.

7.3.3. ITF (the Industry Technology Facilitator)

ITF is the other major body created to actually implement the recommendations of the OGITF.

It is fundamentally different from LOGIC in two respects .

7.3.4. Ownership

ITF is owned and paid for by the largest oil companies operating in the UK sector of the North Sea.

Its board of directors initially included:

- John Barwis (chairman) of Shell
- Clive Fowler of BP
- Les Thomas of Marathon
- Michael Verm of Kerr McGee
- Egil Endreson of Statoil
- Ian Bilsland, Chief Executive of the ITF

7.3.5. Objective

ITF's remit is to facilitate the development of technologies required by these oil companies to develop/re-develop North Sea fields – especially those currently seen as economically marginal.

To achieve this objective:

- ITF has a series of Technology Advisory Panels consisting of technical specialists in specific areas from the member companies. For example, one panel looks at well-related technologies. These panels are organised by a technology broker, who is a paid employee of ITF.
- Each panel sets out technology wishes, which the technology broker then circulates and distributes to universities, SMEs and other potential developers of technology with a view to establishing a research and development project (R&D) that will be run by the SMEs/universities and funded by the ITF-owning companies.
- Panels also receive speculative R&D proposals from SMEs, universities etc. seeking funding for their favoured project.

Deliberately, ITF does not hold R&D funds of its own, and does not project manage R&D projects. This is because two predecessor organisations (the Petroleum Science and Technology Institute, PSTI, and the Centre for Marine and Petroleum Technology, CMPT) both had such powers and had ultimately failed because conflicts of interest and perceived irrelevance.

7.3.6. DEAL (Digital Energy Atlas and Library)

Another OGITG/PILOT initiative is DEAL – a Digital Energy Atlas and Library service provided through a secure web server (www.ukdeal.co.uk).

DEAL is managed by the BGS (British Geological Survey) in partnership with web technology specialists ESRI (UK) Limited.

The objective of DEAL is to reduce the time taken to search for data and eliminate duplication in data storage, thus freeing up industry specialists to look for new investment opportunities.

The focus of the project is a public website holding the definitive index database for exploration and production activities in the UK – a 'virtual shop window' for information and geoscientific data on the province. These data are currently held in repositories all over the world – DEAL allows users to track it down and obtain it quickly. This normally involves the purchase of data if the user is not already 'entitled' to see the data.

The system utilises geographic information system-based web technology to allow users to access data by map-based interface. DEAL offers three services.

Information service

A single, comprehensive and reliable reference set of basic information on the UKCS. This includes geospatial and attribute data on wells, seismic surveys, platforms, pipelines, quadrants/blocks, international boundaries, coastlines, safety zones, coastal shipping lanes, environmental exclusion zones and other data in the public domain. It replaces the multiple (and often conflicting) data sources previously available.

Data market place

A 'one-stop shop' for data vendors worldwide to promote and sell their UKCS geoscientific data products via the Internet.

Unified data network

An inclusive 'virtual environment' allowing companies (for example co-licensees) to store, access, distribute and trade geo-scientific data on an 'entitlement' basis. An agreement already in place with the Department of Trade and Industry (DTI) has been extended to

permit subscribers to fulfil UKCS licence obligations by granting the department direct access to data via DEAL.

7.3.7. LIFT (Licence Information for Trading)

Another OGITG/PILOT initiative is LIFT – the Licence Information for Trading web service that offers a virtual 'shop window' where petroleum licensees can advertise licences and assets for sale, trade or farm-in.

The primary objective of LIFT is to offer licence holders a fast, low-cost means to review and optimise their portfolios in line with long-term strategies. It also allows potential investors in the UKCS easy access to information crucial to their decision-making.

Utilising web technology, licence holders can quickly and easily publish the essential licence information to attract new buyers, partners and investors. Map and text query facilities can be used to help companies find essential information about licences on offer, including who to contact. More detailed information is available through further web links.

The LIFT service is now part of the UK-Deal service described above

7.3.8. Other initiatives

As a result of the existence of the PILOT forum, many new initiatives have been launched, all designed to make the maturing UKCS an attractive and successful place for the oil and gas industry. The following are a small selection:

- Fallow acreage initiative. The government has pushed oil companies who hold 'fallow' acreage to 'do something'. Fallow acreage is defined as acreage where there has been no seismic or drilling activity for 6 years or more. As a result of this pressure (in July 2000) the oil companies brought forward firm work plans for almost 100 formerly dormant licence blocks in UK waters. In addition, 18 fallow discoveries are to be developed, and a further 15 offered for sale.
- The PILOT Undeveloped Discoveries Workgroup is championing a process to find new ways of bringing together the licence owners of adjacent discoveries to explore new ways to enable their development. A screening study has been completed with several potential development 'clusters' identified and contacts initiated with the licence holders to identify the most promising of these for further work.
- The 'Satellite Accelerator' initiative involves a group of oil companies (Amerada Hess, BP and Shell) working under the LOGIC umbrella to invite proposals from the industry at large to

develop selected small undeveloped fields. The early fields offered included BP Wood (a small stranded reservoir) and BP Kessog (a technically challenging reservoir).

- The DTi has simplified some of the regulations governing oil and gas production in the UK sector of the North Sea by:
  - requiring less production reporting to government and earlier publication of results;
  - enabling a new web-based process for approving drilling applications;
  - reducing the time needed to obtain pipelines works authorisations;
  - revised guidance clarifying decommissioning and development procedures.

Attachment 1: Case study – Shell's WIN 90's approach

A.1 Overview

Shell Expro have introduced the WIN 90's strategy for the group's well engineering function. This is a partnering/alliance style approach to this area of Shell's activity. Shell adopted this approach after several trials in the Far East.

The key objectives of the WIN 90's strategy are (according to Shell):

- Extending the life of existing fields and improving the likelihood of developing marginal fields through:
  - greater effectiveness;
  - greater efficiency;
  - greater profitability.
- This is to be achieved by:
  - concentrating on core business;
  - getting the customer/supplier relationships right;
  - continuous quality improvements.

WIN 90's requires the management of non-core business by lead contractors.

It also involves the establishment of non-adversarial relationships between Shell Expro and the lead contractors. This is considered critical to ensuring a successful long-term relationship and delivering the required performance improvements and total cost reductions.

The lead contractors oversee all operations, including:

- providing a single point of contract for the operator;
- overseeing subcontractor selection;
- managing subcontractor interaction;
- managing logistics.

Shell established joint implementation teams with three lead contractors – Sedco Forex, Santa Fe and KCA Drilling – to work on several trial drilling projects. The results were that cost savings of 30% could be achieved by taking this approach.

A.2 Implementation of WIN 90's

Implementation of new contractual arrangements for well services and well testing followed on from the trials in drilling contracting. The main features were as follows.

A.2.1 Requirements for lead contractors

The responsibilities and expectations of the lead contractor were:

- The lead contractor is expected to provide and manage an integrated package of services.
- Lead contractors are expected to undertake risk-sharing in contracts – both with the operator and with any subcontractors.
- The lead contractor is expected to achieve the required safety, quality, commercial and performance standards while providing a cost-effective service.
- The key to monitoring the performance of a lead contractor is the need to establish agreed performance indicators.
- Monitoring also involves development of benchmarking performance indicators throughout the industry.
- It is preferred that the lead contractor develops internal management skills to manage the WIN 90's workscope rather than buying in the skills of a management consultant.
- Broadening of existing contractor management skills is seen as key to establishing the long-term commitment to providing an integrated management service.
- Although there are several major corporate service companies that offer a wide range of services internally, this is not considered the only or even ideal solution.
- Lead service contractors will be expected to be flexible and willing to contract from outside their organisation to provide the optimum package.

A.2.2 Basis of Shell Expro–contractor relationship

Shell stated a number of underlying principles to guide the creation of the contractual relationship between itself and its contractors. These included:

- A statement that they viewed establishing a non-adversarial relationship to be critical in ensuring a long-term relationship.
- A statement that transferring work from Shell to contractors is not only objective.
- Proposing a partnership-type relationship.
- Seeking a long-term preferred customer–supplier relationship, with both parties willing to change and share risks .
- An expectation of significant culture change required of both organisations – at corporate level.
- An understanding that significant training would be required to support this changed relationship.
- Shell and contractor working teams and middle management support was recognised as being critical.
- An understanding that a similar style of relationship would have to be developed between the lead contractor and its subcontractors if required changes are to be achieved.

A.2.3 Contract style

Shell set out its expectations of the type and style of contract that would be created.

- The lead contractor was expected to work with a balanced risk sharing incentive.
- The focus of any incentive (in simple terms) had to be performance in delivering a quality product. Linked to this was a recognition that the quality of any product is often difficult to define – and in many cases impossible to measure.
- A business process quality management (BPQM) technique was to be used where appropriate to define process, identify performance measurements and define applicable incentives.
- Incentives were initially introduced in the form of a discretionary bonus. This is a basic incentive based on beating or improving on an agreed target. Initially, there was to be no penalty mechanism.
- Incentive elements related to time, quality and productivity have been incorporated in all service contracts.
- Shell recognised that no standard incentive mechanism would be applicable to all service contracts.

- In drilling operations, the incentives were highly time dependent, reflecting the main cost drivers in the drilling process.
- In contrast, for specialist completion operations the incentivisation was highly product related.
- Shell stated that, in principle, the incentive should be simple, easily understood by all involved and practical to implement to ensure success.

A.3 Implementation schedule

Year	Activity	Completed
1991	• Develop drilling contracting blueprints • Select drilling contractors • Move toward managerial recruitment	
1992	• Start pilot drilling project • Develop/educate management of drilling contractors for new roles • Begin well services/testing contracting development	
1993	• Start up contracting auditing team • Evaluate pilot drilling projects • Hand-off management and contracting to drilling contractor • Commence well services/testing contracting	Early 1993 Mid-1993 Mid-1993
1994	• Evaluate first turnkey drilling projects • Evaluate well services and testing results • Commence full turnkey operations	Early 1994 Mid-1994 Late 1994

Attachment 2: Case study – BP exploration

Future contracting strategy for well engineering and operations

B.1 Overview

- Over the period 1993–1997 BP expected to spend £200 million/year on well engineering and operational activities in the UKCS.
- 60–65% of this total originated from exploration, appraisal and development drilling.
- 35–40% of the total related to completions, workovers and well maintenance.
- BP UKCS drilling activities were already benchmarked in the top quartile of industry performance.
- BP thought that significant improvement to current performance levels required a focus on the total business process, and a clear recognition of the important role of contractors in the process .
- BP developed a strategy using several tools, including:
  - an analysis of the well engineering and operations business;
  - an analysis of the manner in which activities were performed by BP and its contractors;
  - an analysis of the marketplace – including contractors' views on the future development of the industry.

B.2 Changed allocation of responsibilities

B.2.1 The well engineering function

Before considering where the various responsibilities in the well engineering process should lie, BP looked closely at the well engineering function:

- Well operations were recognised to have three distinct components, with a substantial overlap, and each with different value drivers:
  - in well construction, the drivers are well planning and execution;
  - in well management, the drivers are the life cycle processes of completion design, installation and maintenance;
  - in reservoir data acquisition, the driver is the provision of reservoir information acquisition.
- Strategy – focused on the value drivers identified for each component.
- BP recognised the need to work with key contractors to assist it to reduce cost and increase quality of end-products.
- For BP, the main challenge was to help the market deliver a different product from that currently on offer.

- BP identified the following key value drivers:

Business components	Prime process value driver
Well construction	Speed of construction
Well management	Life cycle well costs
Reservoir data acquisition	Value for money reservoir information (quality and quantity)

- To further improve on the performance of these value drivers, BP identified the need to consolidate and integrate some key support skills.

B.2.4 Integrating the well operation process

Current position		Desired future position	
Contractor key support groups provide:		Contractor core skills groups would provide:	Contractor support services would provide:
• Drilling fluids • Directional drilling • Survey • Mud logging • MWD • Rig operations	→	Well construction	Casing running Fishing Coring Cementing Liner hangers Gauges Tool and equipment hire
• Coiled tubing • Slickline • Completion modules • Subsea • Rig operations	→	Well management	
• Well testing • Electric line		Data acquisition (reservoir)	

B.3 Implementation

B.2.1 Stage 1: contract rationalisation

- Marginal gains were thought possible from incentive contracts which focused on individual elements of the three business components.
- Contract rationalisation (i.e. less and simpler contracts) would facilitate integration of aligned services by:
  - maximising resource utilisation;
  - providing a foundation for enhancing contractors' technical and management skills.
- Contract rationalisation was seen as an important part in the process of transition towards fully linking work planning and execution activities.

B.3.5 Stage 2: Integrated work planning and execution

BP believed that a step change in efficiency could be obtained through delegating the responsibility to optimise design and execution of well engineering within a set of guidelines furnished by the Well Engineering and Operations Group (WEO).

This was seen as likely to create opportunities to:

- Access potential for improvement in long-term performance.
- Focus on performance and technology that can deliver the required product.
- Make it easier to apply incentives and align contractors with BP's objectives.
- Facilitate contractors' capability to measure and control risk by broadening the contractors' knowledge of what has traditionally been performed by BP.
- Better utilise contractors' experience and expertise.
- Create an atmosphere of partnership in the outcome.

B.4 Development of skills in the marketplace

Before BP could achieve these desired goals, there was a need to develop contractors with both the capability of and the interest in working in this totally different way.

- The role traditionally taken by BP (and other operators) has resulted in a fragmented market structure.
- The required integrated contractor core skills groups do not exist.
- BP was willing to form strong mutually constructive relationships with contractors.

- Where beneficial, BP was willing to play a key role in assisting the development of these skills in contractors.
- The strategy was not aimed at selecting a lead/prime contractor nor creating a 'turnkey' style operation.
- BP's stated aim was to establish core skills groups that could deliver the required products.
- The market was to be encouraged to offer relationships with the optimum skills mix and reward structures consistent with the relative risks involved.
- BP wished to strike a balance between market competition and longer term relationships.

B.5 The management of risk and transition

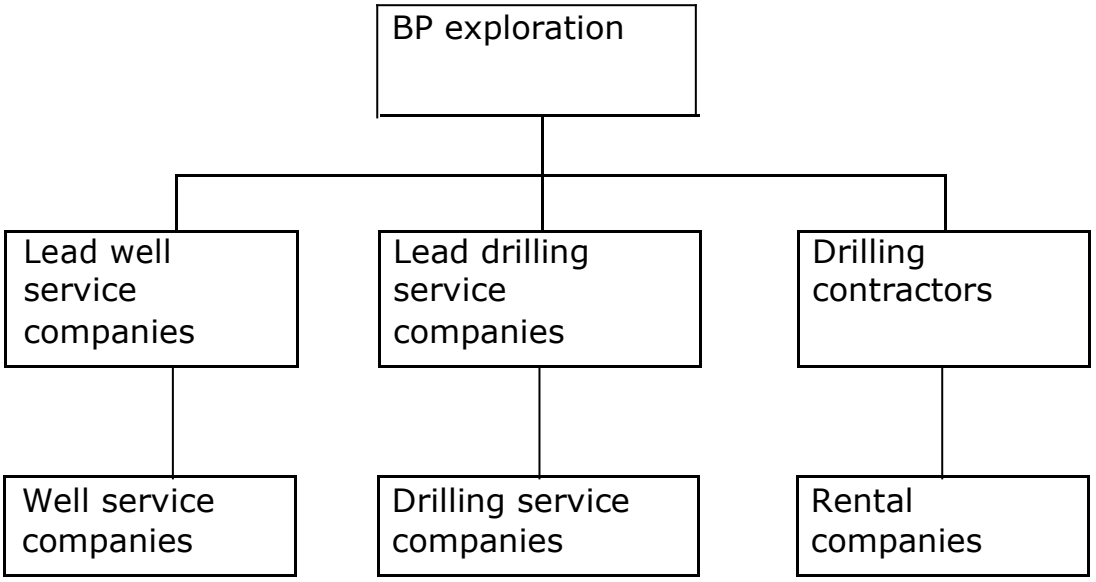
BP understood that the change from current contracting process involved significant transition risk – both to BP and to the contractors.

This risk was to be managed by:

- The formation of 'project team boards' – comprising senior personnel from BP and the contractor to develop and drive essential changes in behaviour and style.
- Technical endorsement of all well work programmes became the responsibility of BP, as did quality assurance of all works.
- BP stated its intention to retain the capability to engineer and manage exploration, appraisal and other high-risk, non-routine work.
- BP's eventual aim was for a 30% cost reduction in the well engineering process.

B.6 Well engineering contracting structure

To illustrate its vision of the future well management set up, BP drew up the following diagram.



- Coil tubing
- Slickline
- Completions
- Logging
- Wireline services
- Workovers

- Directional drilling
- Measurement While Drilling (MWD) / Logging While Drilling (LWD
- Mud
- Fishing
- Abandonment

- Casing running
- Drill string
- Drill string components
- Other hardware
- Cementing

B.7 Implementation plan

Area	Action	Dates
UKCS	• Worldwide review of drilling strategy	Late 1991 Early 1992
	• Internal review of possible options • Development of trial contracts and appointment of contractors for Miller and Bruce • Start-up of first integrated contracts	Early 1992 Mid-1992 Late 1992
	• Evaluate trial projects • Scope and specify approach for all further drilling contracts • Begin well testing/service development	Early 1993 Early 1993 Late 1993
Overseas	• Review of drilling strategy started • Review options • Begin trial projects • Evaluate trial projects • Begin well testing/services development	Early 1992 Mid- to late 1992 Late 1992 Early 1993 Late 1993 Late 1994