



MISSION STATEMENT: "People working together to create a UK Oil & Gas industry which is competitive anywhere in the world."

Supply Chain Management: an Update

In the last few months, CRINE Network have made enormous progress assessing Supply Chain Management (SCM) in our industry, and providing companies with specific means to implement SCM improvements. Ernst & Young have been employed to assist with this work and a number of their proven techniques are being applied.

What is happening?

The approach we followed is shown below:

- 25-30 companies working on projects in well engineering, construction and maintenance of facilities, seismic, and related support activities have been

involved in the analysis of supply chains, an assessment of performance and the importance of various recognized leading practices in SCM. This has involved significant effort from all involved, particularly given the very short time period, and this has been much appreciated.

- In addition a SCM questionnaire has been sent to a wide range of other companies; interviews were conducted with key industry players and the research drew on other studies including the DTI's study of Supply Relationships.
- This assessment identified opportunities for improvement



Kerst Troost, Chairman, Supply Chain Workgroup

and a great deal of often-common opportunities across supply chains.

The deliverables

The deliverables fall into two categories. Firstly, ideas and tools that individual companies can use in their own activities, and in con-

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The Challenge of Technological Innovation

It had been acknowledged for some time that well costs relative to barrels produced require to be reduced to maintain or sustain the life of the North Sea. In 1997 it was realised that if well costs could be halved, the threshold for new field developments could be reduced from say 40 million barrels recoverable to fields of 20 million barrels. If these savings could be established then the number of potential fields, which could be brought into the envelope of consideration for development, would increase by in excess of 100.

The initiative has become even more in focus today with oil

prices at less than \$12/bbl. The UK DTI's Brown Book supple-



Mr Mike Salter, Chief Operating Officer

mented by Operator's data has provided CRINE Network with an analysis of the cost base of the North Sea as an oil producing region, indicating that the base cost of oil production from the UKCS is in the region of \$13/bbl.

With a market price of only \$10 - 12 for the same barrel it is quite clear that the arithmetic will not sustain the industry as it is. The cost base must be brought down to the \$10 level as soon as possible, with an objective to reduce it further to \$8 by 2002 at the latest.

Exploration and Appraisal costs account for some \$3 of the per barrel cost. Abortive explo-

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23rd March 1999
SPE Dinner, London

13-14th April 1999
NOVA Technology Fund Launch, Edinburgh

23-24th June 1999
PETROSET EXPO 99, Islington

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junction with their trading partners to improve their management of supply chains. Secondly, collaborative activities across the industry.

The project will deliver the following in March 1999:

- 1) Strategic Framework for SCM with the main opportunities for improvement, reasons for action, potential benefits, and recommendations for action.
- 2) Supply Chain Methodology is a structured approach for assessment and improvement of supply chains within a company and with trading partners, it includes:
 - a) prioritizing supply chains for action;
 - b) understanding a company's position;
 - c) analyzing the market in

- which the company operates;
- d) developing a process model for activities;
- e) developing strategies.

This methodology is underpinned by over 30 tools that can be used for various activities

- 3) A series of training modules aimed at:
 - a) explaining the role and benefits of SCM;
 - b) applying the tools from the above methodology;
 - c) implementing the methodology.

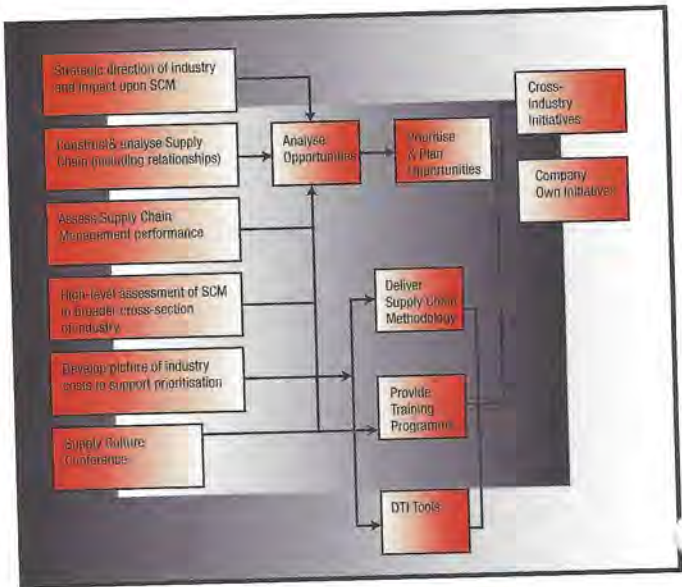
The modules can be used to build courses for different purposes and different audiences.

- 4) Business Cases for Collaborative Initiatives

Justifications for specific, collaborative initiatives across companies.

Rapid Progress is Critical

This project has operated within a tight time-frame and deliberately so. Rapid progress is critical to sustaining commitment and momen-



tum. There is a great deal of good practice in SCM within the industry, but it tends to be fragmented and inconsistently applied - this is not dissimilar from other industries. This project has sought to deliver both a conceptual frame-

work for improvement and practical tools and advice that companies can use to obtain benefits. We will also provide implementation strategies for the deliverables, and roll-out activities are planned for Q2 this year across the country.

Updates...

SUPPLY CHAIN QUESTIONNAIRE

Over 90+ replies were received. Ernst & Young and the Supply Chain workgroup would like to thank all who provided their insights and answers.

BEST IN CLASS

Revised pie charts statistics were published in the CRINE Conference brochure. These show the additional costs of abortive exploration and 'Best in Class' estimates. No one company is Best of Class overall. These new statistics highlight the huge prize that is still to be achieved through co-operation between operators, suppliers and contractors.

NEW SECRETARY

If you have rung the CRINE office over the last weeks you will have spoken to Anne Parfitt, who is working on a three-month contract in the run-up to the conference. Many thanks for all your help, Anne!

Further information on any of the above, please contact the CRINE Network Support Office on 0171 593 2330, fax: 0171 593 2323 or email: info@crine-network.com

If you wish to submit information to the 'UPDATES COLUMN' Contact the CRINE Office.

Wells continued from page 1

ration costs go straight to the bottom line, and if well costs can be significantly reduced, the "sunk" cost of exploration will at a stroke, be substantially reduced.

CRINE Network has been finding ways to get more value from the dollar spent and its Wells Group have spent a long time looking for areas for significant savings.

A lot of work had been done by the industry as a whole in developing ways of working which reduced the "external" costs of constructing wells. However, the CRINE Wells Group took a fresh view of the process of drilling holes in the ground and concluded that major areas of savings could be identified by focusing on the "Internal Customer Relationships" within the oil companies, i.e. between those who specify the need for the wells and those who design and deliver them.

By more closely aligning the needs of the explorationists with the costs and practicalities of drilling the well, a process is thereby developed which properly specifies and plans the well, and attains demonstrable savings of 30%.

The process allows proper evaluation of the objectives of the well from a geoscience perspective, and recognises the need to

deliver an appropriate well which meets those needs quickly and safely. A degree of discipline is required by the customer to allow the deliverer to get about his business properly. Late changes in specification or requirement can have huge cost implications.

In this regard the UK DTI has a role to play as the body charged with maximising the economic rent for the Nation from the North Sea in defining what data they require. They have been involved in the process and are fully supporting the concept.

A further area for savings is the development of concepts in terms of well design which are appropriate for a mature province such as the North Sea where a lot of related and offset data is available.

In essence two elements have been identified which will deliver significant well cost savings. One is a change of mind set or process, the evolution of integrated teams to specify and deliver wells, which will in turn deliver the data required by the customers.

Secondly the actual design of a "finder" well has been developed as a concept to break the culture of drilling every well as a "keeper" and a future producer. This part of the concept has a number of advantages; the well is drilled specifically as a data gath-

erer, and is plugged and abandoned after collecting the data, thus avoiding the tendency to suspend exploration wells, which will require intervention or abandonment later; The exploration well becomes truly a "sunk" cost but at a lower cost level, appraisal or development drilling can then take place on the basis of good information, and can be capitalised properly.

"Keeper" wells can be a lot more expensive than "finder" wells, but the commitment to drill a keeper well is made properly and reliably.

The "dry hole" of which a very high percentage of exploration wells are, becomes the cheap option, dramatically increasing the value of the more expensive "keeper" well.

CRINE Network is actively promoting the "finder well" concept, both as a design and a business process. It was developed by a team led by Jean-Pierre Foehn of Total in conjunction with UKOOA's Exploration Group, and we therefore look forward to a high degree of take up by the industry, with the hope that it will not only sustain activity in the low price era, but also prolong the life of the North Sea as an oil province, by allowing smaller pools to be developed to the advantage of the entire industry and the nation.

Competitiveness Task Force

It was not entirely coincidental that the Oil and Gas Industry Task Force OGITF (see box) was launched at the Supply Chain Conference held in Aberdeen last November. Supply Chain Management provides competitiveness through collaboration and competitiveness is one of the seven core issues the Task Force is examining. IEP and CRINE have put much energy into Supply Chain matters for some time now and it would be most surprising if the Task Force didn't take action to bring supply chain issues to the forefront of future activity. The acceptance that collaboration can bring real dividends is easy to find amongst the senior management of operators, contractors and suppliers alike.

The issue repeatedly brought up by smaller companies is the question whether this substantial

cultural change has filtered through to the middle managers responsible for procurement and engineering on a day to day basis. The anecdotal evidence is that it has not!

The Competitiveness Group within the Task Force will have to find ways in which the whole industry can embrace the new culture. At the time of writing that group have yet to report to the Task Force but the methodology developed in the CRINE Supply Chain project (reported elsewhere in CRINEWATCH) and the earlier DTI funded work can only assist in this task. The regional supply chain network groups being established by IEP can help at both strategic and local levels but what is needed is something that runs at national level - a central resource to work with suppliers and their sub-suppliers throughout the supply

chain.

If the industry's top management is convinced of the value of supply chain management how do they ensure the entire workforce share that conviction? Only through continual and consistent effort will the message be delivered throughout the management chain. The CRINE champions could have a role here - if their managements truly empower them - with resources too! If management want to secure the benefits resulting from good supply chain management they have to take it seriously and not just play lip service to the principles.

There is good evidence that the companies now harvesting these benefits have been serious about preparing the ground, sowing the seed, feeding and weeding all with a view to a bumper crop. As the gardeners amongst you will know ignore any stage and growth becomes stunted or the crop is engulfed by weeds. The weeds of the old adversarial approaches to procurement just choke healthy competitiveness - perhaps a little genetic modification of the buyers in this industry would not go amiss.

Briefing: industry taskforce

Chaired by Energy Minister John Battle with Scottish Office Minister Lord Macdonald as Vice Chairman, the Oil and Gas Industry Task Force is a joint initiative between Industry and Government to counteract the impact of low oil prices on UKCS activity.

Launched on 17 November 1998 the Task Force is focused on achieving the cultural shift necessary to capture the value available from intelligent working and creation of new technological approaches to reducing the costs of developing and producing UK reserves while improving international competitiveness.

It has agreed to develop seven key areas for action:

- Long term vision for the industry
- Competitiveness, including supply chain management and contractual issues;
- Innovation/technology, including research, subsea technology and the early adoption of new ideas;
- Fiscal regime, focusing on the scope for further improvements to administrative aspects of taxes and royalty;
- Regulation and licensing, including greater co-ordination between field development plans, safety cases and environmental assessments;
- Skills and training, including vocational training and graduate intake; and
- Sustainable development including environmental regulation.

Actions are being developed by working groups in each of these areas and Lord Macdonald is due to speak at the CRINE Conference on 10 March 1999, when he is expected to provide some of the first public feedback of progress and actions of the Task Force.



John Battle announces Oil and Gas Supply Chain Initiative Nov '97

ProActive Suppliers

The ProActive Suppliers Group was founded to examine how to unlock the "total contribution" that suppliers could make in order for them to deliver an 'enhanced' performance and increased cost competitiveness. It is believed that a few significant changes could lead to financial savings of up to 30 per cent in overall project costs. The existing and traditional procurement process is based primarily on asking a supplier to bid to supply a defined product after Front End Engineering or the initial part of Detailed Design has already been completed. Examples ranging from major equipment to piping bulks were looked at to see what might be possible if suppliers were involved earlier in project development. One company, specialising in valves, actuators and controls, provided information on two features which could lead to a saving of circa pounds £1 million. This involved using hub ends instead of flange ends for "through conduit gate" valves for a reduction in

length of 40 per cent. Also, using another product (an inside screw valve) the height could be reduced by 20 per cent, which in turn reduced the weight still further. On a typical platform, these savings would amount to approximately a 25 per cent saving against the valve Purchase Order. This example lead to the conclusion that to unlock potential, the procurement process had to change and that earlier involvement of suppliers could make better use of their technical and product expertise. When coupled with that of the design/spec-



ifying engineer, it is clearly feasible to arrive at an optimum design and product supply for CAPEX or Whole Life Cycle. The ProActive Suppliers Group has recently been developing a set of non-prescriptive Guiding Principles which are due to be presented at the March CRINE conference. In this document, there is recognition that if the traditional procurement process is changed then new issues arise and many of the supplier selection and bid evaluation criteria are no longer appropriate or relevant. Therefore, a different set of issues may have to be faced, related to supplier competence, capability, performance and contribution. Similarly, buyers will be concerned that the ultimate price contained within a Purchase Order is a fair and competitive one. This also creates a need for clarity on the roles and responsibilities of both buyer and supplier, since these will change and be subject to new dynamics not present in traditional procurement. The Guiding Principles address these issues, as well as many others, and attempt to build on the innovative ways buyers and suppliers have been working together since the inception of CRINE. So too, they offer some new possibilities for streamlining the supply chain to help reduce the cost base in the North Sea.

Peter Jessup, Halliburton - Brown & Root, Chairman of ProActive Suppliers



Standard Contracts: News

By Eric Johnston, Amerada Hess and Peter Holland, Shell Expro

Since their launch 18 months ago have CRINE Standard Contracts been a success? Many contractors have benefited as more major operators have adopted the standard contracts. Prior to the introduction of these standard contracts, invitations to tender (ITT's) contained various operator contract models which were frequently altered requiring contractors to review each ITT contract condition on every occasion. The standardisation of contract conditions has largely avoided this need. The benefit operators have gained is the reduced level of qualifications being received, with the consequent saving in cost and time in the awarding of contracts.

While standard contracts do not eliminate all qualifications, there has been a marked reduction in the number and type of qualifications being received. It is too early to give a definitive quantification of this saving but indications are it is in the region of 30 to 50% depending on the model type used. It is expected that when the contracts become more familiar, and fully accepted by the industry,

these qualifications will, over time be further significantly reduced. This will allow more time for concentration on those commercial items which are truly key in a tender/negotiation and will also free up time for commercial resources to focus on more added value areas of the business.

There are of course potential downsides. Operators can modify the models by the use of special conditions but it is intended that special conditions should be kept to a minimum and only be used when absolutely necessary. There are reports of some operators using extensive special conditions. Clearly this defeats the purpose of standard contracts and brings their use into disrepute. To guard against this, there needs to be visible top down support from senior management in both contractor and operator organisations. There must also be a willingness for contractors and operators to question real or assumed corporate positions and to compromise to facilitate agreement on equitable conditions of contract. This will help further reduce cost, which in the



current \$10 oil market assumes even greater importance.

Are all operators using CRINE contracts? UKOOA carried out a survey in June 1998 which indicated that by the end of 1998 14 operators intended using, 4 operators are reviewing the contracts for acceptance and 3 do not intend using them at present. In terms of contract work on offshore facilities, the operators using the CRINE models have in value terms reached a critical mass as 80% plus of the work in the UKCS is undertaken by these operators. UKOOA is currently updating this

1998 survey.

So where to next? The CRINE Standard Contracts Committee, in response to feedback and requests received will continue its work with three new main objectives for 1999. These are:-

- A CRINE form of subcontract. This will facilitate the passing down of standard contract conditions to the subcontractor level.
- A CRINE SME low risk contract. This model will address the concerns of Small and Medium Enterprises and provide a contract which is appropriate in terms of work-scope and risks assumed.
- A review of the Well Services model to ensure consistency with the Mobile Drilling Rig model and to take account of feedback received.

In terms of the other CRINE model contracts, the CRINE Standard Contracts Committee with the CRINE Network Support Office will establish a process to record, acknowledge and forward to the Committee comments from companies and individuals. Based on these comments a decision on the need for review in the short to medium term will be decided.

New Technology and its impact on Facilities Costs

By Dick Winchester,
Director - Technology
Programmes,
Centre for Marine and
Petroleum Technology

New Technology has always played a major role in this industry. Without continuous technological development the North Sea would simply not have happened. From the early seventies right through to the present day the pace of technological development has been heady. The major hitters of 3D Seismic and Horizontal Drilling are the headline grabbers but we can also list Subsea Controls, Flexible Flowlines and Risers, the Riser Turret, Coil Tubing and a host of other engineering developments that have enabled the industry to grow and thrive pretty much year on year. With the oil price at its lowest in real terms since the North Sea opened up, the role of New

Technology is obvious. It has to be directed towards cutting today's operating costs wherever it can. There are many signs already that this is happening. Improvements in inspection techniques for applications such as pumps, turbines, pipelines, risers and valves could lead to longer component life, delaying need for replacement or bringing replacements forward to avoid failures, consequent shutdowns etc. Better reservoir monitoring through the use of 4D seismic which can be used as a means of improving or extending oil production is coming into more general use.

However, in many areas incremental changes are simply not enough and very large Step

Changes are required. For instance, the development of marginal fields is long overdue for some new thinking. The current cost of wells, subsea hardware and the other equipment needed to develop a tie-back are out of all proportion to the size of many of these fields. They are certainly completely uneconomic in the present situation and could well be uneconomic even at much higher oil prices.

Exploration Drilling is also a target for cost reduction. Given an exploration failure rate of about 75% for the North Sea as a whole this topic has to be given high priority in order to lower the economic risk of exploration and to enable it to become "affordable". However, in these two areas and

in others there is still considerable resistance to change. Culture and practice are probably more difficult to get over with than the Technology Challenges themselves. Equally difficult to deal with is the potential impact on suppliers and manufacturers. A step change in technology could - and probably should - lead to the disappearance of some companies and their replacement with new ones or new entrants more able to deal with the changes that have to come. It will also give rise to unprecedented opportunities both in the North Sea and as potential exports. We are not alone in having to deal with low oil prices.