

## **Procurement Strategies for the Oil and Gas Industry: Capturing Changing Values and Dealing with Multi Cultural Complexity**

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### **Abstract**

Global business trends have led the oil and gas industry to seek better solutions to overcome the emerging challenges and critical issues, such as the need for procurement strategies based on new values and contextual factors including multi cultural complexity. One way to overcome some of these critical issues is perhaps to adopt new innovative approaches to suit different locations, countries or regions while trying to incorporate the differences in business philosophy, culture or values within the oil and gas organisation themselves into these approaches. These innovative approaches also need to accommodate specific project needs and different values either in the business philosophy or culture within the oil and gas organization themselves or in the local practices.

This paper will specifically look into important aspects of research processes, elements, methodology and approach which were conducted on the said topic. The aim of the main research study is to improve the understanding of procurement strategies of players and stakeholders (hereafter referred to as "decision makers") in an industry that has gone beyond regions and boundaries. The objectives of the main research study included: to explore current procurement practices and trends; to identify the different values adopted by players; and highlight the possible impact of multi cultural complexity on global procurement process and strategies.

Among the key conclusions and recommendations that can be derived from the main research study includes the need to improve the current procurement process in the industry to achieve a more conducive, sustainable and fair working environment between clients and contractors. Finally, a comprehensive procurement strategy guideline on selection processes to be used by decision makers in the industry was developed and produced comprising a set of phases and critical steps that needs to be followed and performed during the selection process to assist decision makers to make better analysis and assessment on the appropriate procurement strategy to be adopted in future oil and gas projects throughout the world. This paper represents the summary of the main research study, its methodology, findings and conclusions.

### **Keywords**

Procurement, Oil and gas, value and research process

## 1. Introduction

Procurement or commonly known as supply chain in the oil and gas industry, for quite some time was not taken seriously by players in an industry where technical advancement and time were the core values aiming only for fast exploration and high production of oil and gas. It was initially considered a “soft issue” in the industry until players beginning to realise that 80% of all operating expenses were spent on the supply chain system. They also noticed that they can either make or break the project if careful attention and precautions on the procurement or supply chain system were not taken seriously especially when the business environment was demanding while exploration and production were challenging and pushing them to their limit.

It was therefore not surprising that not many articles were published on procurement or the supply chain system in the oil and gas journals. Again, new technical breakthroughs and economics issues were put to the center-stage of journal publications leaving players to deal with the procurement issues themselves. Many of the articles found on procurement in journals or other publications, merely touch on the core issues of procurement in the industry which was on the issues of suitability and reliability under certain circumstances throughout the whole procurement process.

Preliminary interviews conducted with players during oil and gas exhibitions, conferences and seminars resulted in mix reactions and doubtful leads. Most of them agreed that procurement is extremely an important business process but they are subjected to the ones who initially made the decision on the type of procurement methods or strategies to be used in the project. How and why each of the methods used in the procurement process are based on individual or organisation’s preferences and will remain a best kept secret to others. None of those being interviewed could come up with a decent answer on this issue and yet most of them agreed that something should be done to improve the outdated conventional approaches to procurement.

Based on the initial findings and leads from the literature search and preliminary interviews, the next phase of the research study was trying to gather primary data from players in the industry. Knowing very well that the topic of procurement is a commercially sensitive issue and the existence of the small number of prominent players in the industry can pose problems, a case study approach was design to allow an up to date and real live issues on procurement experienced by a selected few can be incorporated in the research study. Three case studies on procurement issues were obtain from major players in the UK and another three from Malaysia. These case studies became the important guide to the research study where key issues and potential area of research focus are found and were developed further into questionnaires for the next phase of research study which was the industry survey.

The questionnaire survey was designed, developed and conducted to extract and obtain primary data from a wider spectrum of players although based in the UK and Malaysia, participated in other oil and gas producing regions in the world. Although having to go through repeated reminders and rejections from the limited number of players in these two regions, it was finally completed with only twenty one replies received from respondents from these regions who are also actively involved in various other oil and gas projects around the globe. Although this figure may look to be small, the justification lies on: the quality of replies; the profile of respondents and the size and type of companies they represent; the number of questions asked; and their collective experiences and knowledge which are considered sufficient enough to represent the general perception of players across the industry.

The analysis of data was conducted during the fourth phase of the research study. It includes qualitative analysis on primary data from the preliminary interviews and case studies as well as quantitative analysis on the questionnaire survey. Secondary data from current published literatures were also gathered and published in a number of conferences. During the fifth phase, results from both analyses on the primary and secondary data were later combined to produce journal publications. It is also during this phase that

the validation from the industry is conducted to get the final feedback on the overall research study. All the analysis and findings during these phases will also become the basis of the writing up for the thesis which will be undertaken during the last phase of the research study.

The industry has been hampered recently by a number of critical issues on business and management across oil producing regions. One way to overcome some of these issues is perhaps to adopt innovative approaches to suit different locations, countries or regions while trying to incorporate the differences in business philosophy, culture or values within the oil and gas organisation themselves into these approaches. However, the differences in the level of physical condition and maturity of oil and gas fields, such as in the UK North Sea (UKNS), combined with local issues and practices such as in Malaysia, have made competition and survival even more demanding.

Although there are many new technological breakthroughs in exploration and production, especially after the oil and gas price crash in the late 80's, there has been insufficient development in procurement strategies and methods, where many ideas have simply been taken based on those used in other sectors or industry rather than considering the specific needs of the industry. This research study will attempt to make a collective perspectives and an in-depth analysis at these issues using data made available from literatures and responds from players within the industry.

## **2. Research Aim, Objectives and Process**

The aim of the research study is to improve the understanding of global procurement strategies that need to be adopted by the oil and gas industry. Among the main objectives of the research study was to explore current procurement practices and trends, identify the different values adopted by players, highlighting the possible impact of multi cultural complexities on global procurement process and strategies and developing a procurement strategy guideline on selection process.

The research process was divided into three phases: framework formulation; empirical evaluation and concept and development. Each phase represents different tasks, modes of data collection or activities. The research process flowchart is illustrated in Figure 1 below.

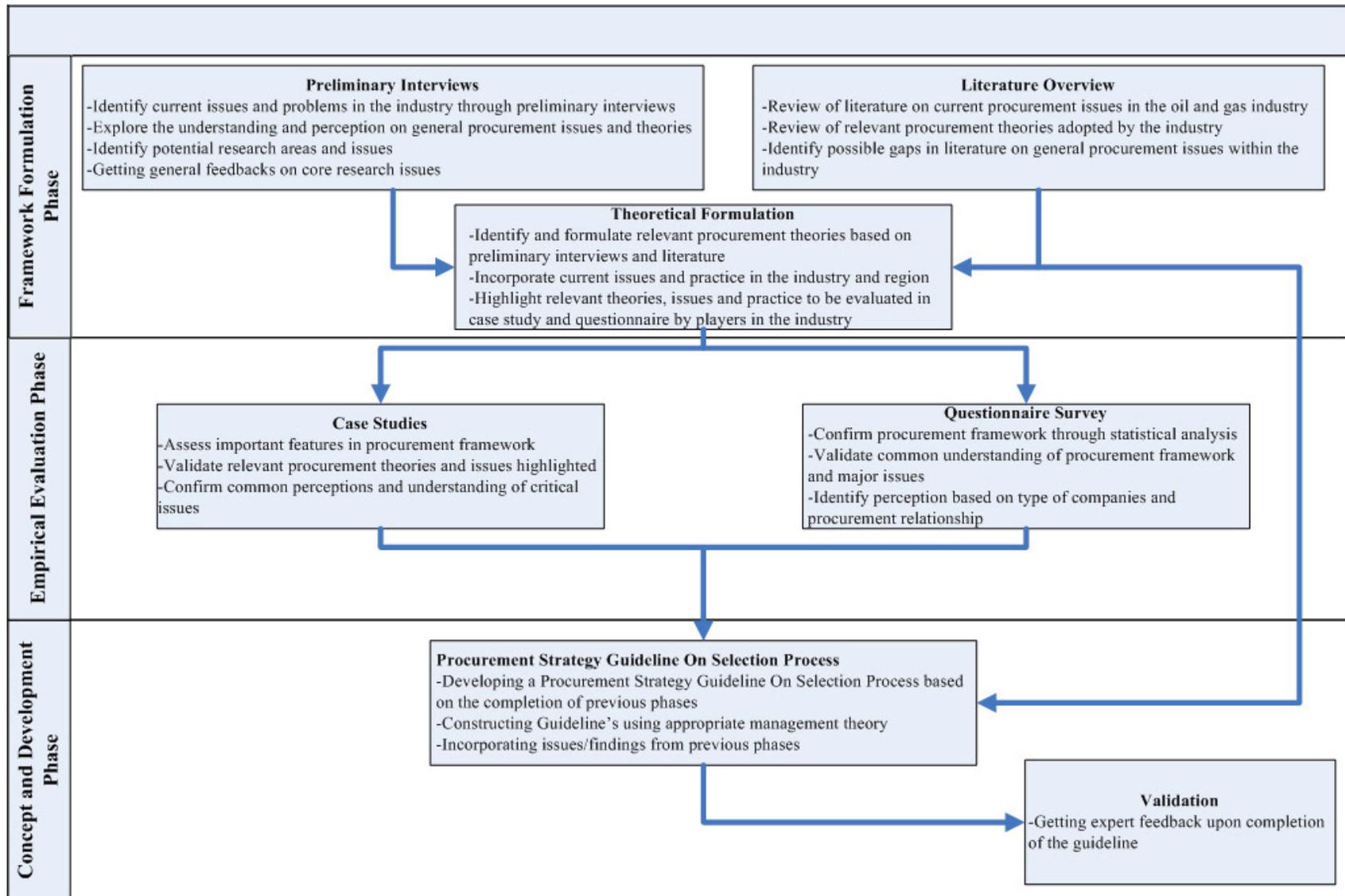


Figure 1: Research Process

### **3. Literature Overview**

There have been many articles published on the challenges of oil and gas depletion and high operational cost in the UK North Sea (UKNS). Technical and economics reviews on this issue have been discussed and deliberated quite lengthy by players and clients alike in publications as well as during conferences and seminars. There is also the need to keep the business in the region running despite the decline in oil production, considering the substantial numbers of established and matured businesses that have already been in place over the time in the region. One of the solutions to overcome these shortcomings is to use the “managed decline” approach of management, apart from promoting the best value, collaboration and fair competition trend among businesses within the region. Another way to overcome some of the common problems encountered in the region is by reducing wastages and using cost effective technology on existing assets.

The current and future changes in business trends and environment have created new business challenges to the industry. Conventional approaches in procurement may not be suitable or even bold enough to face the challenges in the oil and gas business. Adopting innovative procurement approaches could be helpful to overcome these challenges and a few of the big players have proven it. One of the reasons why innovative procurement approaches are needed is also due to the impact of multi cultural complexities across countries and regions.

In the oil and gas industry, multi cultural complexity challenges can arise due to the influences and differences of the: project’s physical nature and location; project team comprising different organisations and individuals from many countries; field maturity and magnitude of reservoir; technical constraints; number of players and specialist with different backgrounds and experiences; and local cultural practices in accordance to regional, country, political, knowledge, monetary and language barriers.

Some of the challenges that have been highlighted in the literature overview include the need to avoid using a procurement process that is based only on initial price or capital cost. It was suggested however, that a total system of cost and value throughout the procurement process or supply chain, such as whole life costing and the appropriate values to be adopted, are needed in this capital intensive, complex, long-term and high risk sector. Regional or global challenges and influences such as multi-cultural complexity (MCC) must be addressed accordingly through comprehensive and integrated procurement methods/strategies. Finally, apart from the knowledge and understanding of local business trends, practices and procedures, collaboration with local competitors could improve supply chain relationships and thus, reduce problems of MCC constraints in global business ventures.

### **4. Case Study**

The objective of the reported case studies is not only to supplement but also to validate data obtained from the literature review and preliminary interviews. The case studies have also highlighted many current issues that do not appear in published literature. This approach has made an important contribution to understanding and retrieving information about the latest trends, perceptions, changes and challenges in an industry that has a small number of players. Interviews with selected respondents were conducted in the UK and Malaysia. Case studies were based on different companies’ and organisations’ experiences and perceptions about specific issues on procurement and the industry in general, taking into account the influences of different regions practices, constraints and challenges.

Respondents were selected on the basis that their company/organisation's are actively involved and have been contributing to the UK and Malaysian oil and gas industry. They were managers/senior managers in procurement or supply chain with vast experience and certainly knowledgeable on the subject matter. For the research study, a total of three case studies each were obtained from the UK and Malaysia.

The case studies on the three UK companies/organisations have highlighted a number of important challenges. Being in an industry that is currently under the threat of oil depletion and high operative/maintenance costs, many players in the UK North Sea are looking into new approaches for managing, cost planning/control and sustaining the current oil and gas exploration and production processes. There is a general consensus in the industry that cost effective technology, cutting down on waste, increasing overall performance and enhancing supply chain relationship need to be pushed forward in every aspect.

Other issues that have emerged from these UK case studies include the needs to streamline procurement processes to meet certain values and be able to deliver organisational strategy, systems and tools for different market environments. Being a high risk industry, making comparison and learning from past experiences and developing new approaches may prove to be critical and necessary for players to improve and compete in the global arena.

On the other hand, most of the issues highlighted in the case studies conducted on the three Malaysian companies are confined within the local and regional issues. Players seem to be fully occupied and faced with the challenges of client-related problems and issues like price fluctuation rather than the bigger agenda of global ventures and multi cultural complexities. Although there are steps taken to pursue or invest in international ventures, they are limited to the privileged few that are financially strong, technically capable and skillfully experienced. There is a strong objection against the one way adversarial style of client-contractor relationship and the way the contractor is being forced to be on the receiving end when it comes to price fluctuation, overall risks and increased workloads. There is also a strong demand currently by players in this region on how to achieve a balance between adopting client's values and being competitive and profitable at the same time when preparing their bidding estimates.

In a country where the largest oil and gas operator/client is partially owned by the government, any changes in management and implementation of innovative procurement approaches could be a huge challenge faced by the operator. These changes and improvement however, are quite timely, on demand and very much in accordance with current business trends and environment. These changes would also be welcomed by contractors, fabricators and service providers alike not only within the region but also across the globe.

## **5. Questionnaire Survey**

The objective of conducting the questionnaire survey is to gather primary, relevant and current data from the oil and gas industry in order to support as well as validate data obtained from literature review and case studies. This approach has made an important contribution to the understanding and retrieving information about the latest trends, perceptions, changes and challenges in a competitive and dynamic industry that has a relatively small number of players.

In order to maximise the anticipated outcomes of primary data to be collected from the small number of players within sector, the main research methodology was specifically designed to involve different stages of primary data collection to include the perception of most players across the industry. The questionnaire survey was purposely aimed towards the perception of all major players in the sector, although the final results may not represent the true numbers and company types. However, they are still reasonably sufficient to be taken as a point of reference that represents the perception of major players. It is believed that a better composition of data from different spectrum of players in the industry addressing various issues highlighted in the research study can also be achieved using the questionnaire survey.

The changes in the global business trends have also seen the changes in the approach to procurement methods/strategies in the oil and gas industry. The change and move from the conventional towards a more acceptable and suitable innovative procurement methods/strategies is a sign that players in the industry are trying to keep pace with the current needs and requirement of a demanding and fast changing sector. For example, results in the survey have found that partnering/alliancing/joint venture is the most suitable procurement method chosen by contractors engaged in upstream relationships (being procured by the client) while the lump sum and Engineering, Procurement, Construction and Commissioning (EPCC) methods are found to be less favourable. According to them, the balance between risk and reward could no longer be sustained on complex and demanding projects such as in the oil and gas industry. Two major issues that were perceived by the contractors of being the stumbling block to changes in the procurement methods/strategies in the industry are the player's reluctance to change from the conventional approaches and the strong influence of established and prominent players against this change.

The operators on the other hand, strongly agree that the type of procurement methods/strategies to be adopted currently is largely influenced and dictated by them as well as the contractors. They still prefer the EPCC method although they found that partnering/alliancing may be suitable under certain circumstances. This also applies to the contract to produce method where they believe that this method is much more suitable for smaller fields which will allow the contractor to be in a better position to work independently on a small scale project. The operators however, are not much in favour of the leasing and incentive schemes methods although these methods will serve the contractors, manufacturers and servicing companies better.

Generally, most of the respondents agree that they should be looking seriously at cooperation rather than competition in their approach to procurement strategies. More partnering/alliancing ventures such as the Production Sharing Contract (PSC) and joint venture exploration between clients and contractors will be a common sight in the future. The impact of multi cultural complexities issues on the oil and gas projects across regions will also see efforts are being made to enhance further collaborations and joint ventures between multi national companies and local players in the region to overcome these issues.

## **6. The Proposed Procurement Strategy Guideline on Selection Process**

The final task of the research objectives is to develop a procurement strategy guideline on selection process (referred to as the "Guideline") to be adopted by managers and key stakeholders (referred to as "Decision Makers") in the oil and gas industry. The research methodologies used in this research have provided the Guideline with the necessary structure and ingredients for its construction. The Guideline was developed based on the inputs and results gathered from specific tasks in the research process.

These include its development through the inputs on theoretical formulations and later from empirical evaluations and analysis.

The Guideline was developed in view of its potential benefits and possible contribution to improve the decision maker's understanding of procurement and supply chain systems and processes in the industry. It also helps to provide new entrants to the business the essential points of procurement, new ideas and perspectives on procurement strategy. The developed Guideline will be covered in a separate article due to its lengthy and detail explanation on the different phases and steps to be undertaken in the selection process.

## **7. Conclusion and Recommendations**

The research study has highlighted several critical issues and perceptions on procurement methods/strategies by different players in different companies in different regions but within the same industry. The conclusions that can be made from this research study based upon the collective findings from the methodology used are as follows. It is found that there is the need for the players in the industry to:

- Move away from outdated conventional procurement methods/strategies towards more acceptable and reliable methods/strategies to meet the changing values and demands of current business/market environment.
- Introduce innovative procurement strategies based on cooperation rather than competition across the regions to tackle issues on multi-cultural complexity (MCC), oil and gas depletion, rising production costs and unsuccessful conventional approaches.
- Identify and prioritise values to be adopted and incorporating cost effectiveness on operational management in procurement methods/strategies to be able to get the best possible results and successful procurement process.
- Improve client/contractor relationships through partnering/alliancing enhancement within and across regions.
- Promote and contribute more towards research and development efforts on improving procurement issues within and across the industry including the willingness to share knowledge and experiences across regions.

Finally, in a complex sector with small number of players and different governmental practices and interventions across the globe, it will take considerable effort, time and much convincing before any proposals will be accepted and implemented by the players. This is also where the industry's/government's initiative agency (if any) could participate with the assistance of research organisations to expedite the changes through education, promotion and giving continuous assistance to the players in the industry during its implementation process.

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