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CONTRACT LIFECYCLE MANAGEMENT ON THE SELL-SIDE,

a case study in upstream Oil and Gas industry

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ABSTRACT

Contract lifecycle management (CLM) is becoming a powerful tool for business optimization as pressure grows on modern organizations to develop contract competence. In the context of upstream oil and gas industry, complex contract landscape and escalating burden of regulatory compliance have further driven the demand for effective management of contractual agreements.

This thesis examines the implementation of customer contract management in an oilfield services company. The goal set out is to depict a holistic view of CLM from the sell-side perspective and to contribute to the efficient practices of CLM.

Qualitative enquiry and deductive approach are utilized as main research methods and modes of analysis in the study. Data collection is derived from documents, observations and interviews.

The primary premise of the theoretical background includes the basic concept of CLM and the fundamental elements of a CLM system. An overview of current state and future outlook for CLM is also provided along with the contract management maturity model for assessment.

The empirical part deals with the CLM at the Case Company and the issues around CLM in upstream oil and gas. The case implementation of CLM is illustrated step by step with respects to the constituent elements of CLM. Based on the maturity model laid out in theoretical part, an analysis of the case CLM is carried out and suggestions for improvements at the Case Company are put forward.

The pursuit for an effective CLM system is concluded with the implications drawn from the analysis. The research findings may assist readers with interest in CLM to improve the current practices and alleviate hindrances to CLM implementation.

Key words: contract lifecycle, contract lifecycle management, upstream oil and gas

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ABBREVIATIONS AND TERMS

CLM	Contract Lifecycle Management
CMMM	Contract Management Maturity Model
HSE	Health, safety and environment
ITB	Invitation to bid, a type of solicitation
ITT	Invitation to tender, a type of solicitation
O&G	Oil and Gas
RFP	Request for proposal, a type of solicitation
SAP	A company specializes in business management software, solutions, services for improving business process
T&Cs	Terms and Conditions

1 INTRODUCTION

1.1 Background of the study

An enterprise's ability to build and manage relationship with customers, partners, suppliers and employees is a key factor contributing to its competitive advantage. At the heart of every business relationship stand contracts, the instrument through which commitments and essential elements of business transactions are defined and governed. Statistically, contractual agreements are accounted for 60% to 80% of modern business transactions. Accordingly, contracts represent key assets to build competitive advantage to organizations in today's high speed and multilateral business culture. (Saxena 2008, xxi; Zant & Schlosberg 2002, 88.)

Despite the increasing significance of contract lifecycle management (CLM), studies reveal that many organizations have not yet realized the strategic competitive advantage coming from a mature contracting process and thus their contract management for the most part involves fragmented, labor intensive and ad hoc processes (Rendon 2006, 2; Aberdeen Group 2006a, 2). According to a study by IACCM, more than 70% of the international corporations considered contract management as a "major or significant source of operational weakness" and that improvement in the field can lead to better risk management and cost reduction (IACCM 2003, 1). Indeed, organizations having established and mature contract management processes are able to generate a great deal in additional savings and have a distinct competitive advantage over their competitors (Rendon 2007, 1). On the other hand, inefficient management of contracts will lead to poor operational control, low customer satisfaction, high risks and unwanted costs (Jaakkola 2004, 2; Saxena 2008, xxi).

With regards to CLM development, due to the increasing requirement for monitoring off-contract purchasing, managing compliance and costs, contract lifecycle management (CLM) has been for the most part well-established on the buy-side which deals with procurement and supplier contracts. From the sell-side perspective, contracts are an important revenue stream and thus directly affect enterprises' profitability. In 2006, 56% of an enterprise's revenue was generated

from contractual agreements and the number was expected to increase to 68% in 2008. (Aberdeen Group 2006a, 1).

In the context of upstream oil and gas industry, the diversified complexity of contracts has been driven by the complicated nature of business and escalating requirements of regulatory compliance in areas such as health, safety and environmental protection. Contracts in oil and gas industry, by and large, often contain complicated terms and conditions governing all aspects of the service or operation, detailed description of the responsibilities of each party, heavy technical and personnel requirements and list of pricing. An effective management of contract is therefore critical for all contracting parties, regardless if it is the main contractor or the subcontractor.

Given this background, the thesis examines a case customer contract life cycle management in a joint venture between one of the world's top-tier oilfield service companies and an experienced local partner. The customer CLM framework employed by the Case Company at the moment is as a whole completed with clearly defined processes and sub-processes. By analyzing and assessing the management at the Case Company, the thesis may assist the reader to be better informed about CLM on the sell-side.

1.2 Research problem, objectives and questions

The main research object in this thesis is the management of contract lifecycle, which is an overriding concern for organizations due to the heightened importance, volume and complexity of modern contractual agreements. From the academic point of view, much of the attention has been placed on CLM as a tool to manage and improve the performance of procurement activities, especially the outsourcing process. At the same time, CLM is yet not fully developed on the sell-side. Given the foregoing, the goals of this thesis are the identification of the key elements in CLM and the depiction of a holistic view on CLM from the seller's perspective in terms of process, organizational structure and technological application.

The primary question put forward is: What is an effective CLM system for selling organizations in upstream oil and gas industry? Many research problems are complicated to address without breaking them down into smaller problems (Walliman 2011, 36). To provide a comprehensive answer to the main research question, five sub-questions are identified as follows:

1. What are the fundamental elements of CLM?
2. What is the role of CLM in upstream O&G?
3. How does the Case Company implement CLM?
4. What are the challenges the Case Company faces when implementing CLM?
5. What need to be done to improve CLM at the Case Company?

The answers to these five key questions will be given step by step in the later parts by examining the theories on CLM and the practices at the Case Company.

1.3 Research methodology and data collection

Research methods

Research can be classified from three perspectives as illustrated in Figure 1. These classifications are not mutually exclusive and can be used alternatively.

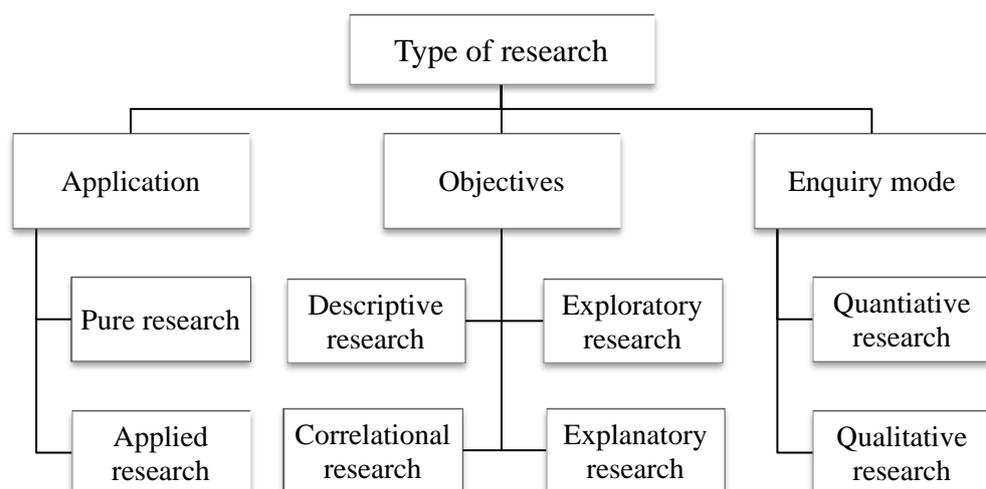


FIGURE 1. Types of research (Kumar 2011, 10)

First and foremost, this study's primary purpose is to examine the application of the ground theories of CLM in reality and provide further understanding of CLM within the business settings. In line with the concept of applied research, which "strives to improve our understanding of a problem, with the intent of contributing to the solution of that problem" (Bickman and Rog 2009, x), the study is considered an applied research.

From the objective perspective, the study is labeled as a descriptive study as it attempts to describe systematically the characteristics of a problem or phenomenon of a given area of interest (Kumar 2011, 10). The description goal can be achieved by quantitative or qualitative method or a combination of both. In this case, the thesis is characterized by a predominance of qualitative study. The qualitative inquiry was chosen due to its effectiveness in offering in-depth understandings of situations and events as well as the actors involved and the interactions among them (Gagnon 2010, 1).

The extent to which a researcher is clear about the theory directly influences the research design and approach. There are two methods of reasoning, namely induction and deduction, to choose from. Inductive method "moves from a set of specific observations to the discovery of general patterns". In contrast, deductive approach arises when general principles are used as the basis to build and test specific expectations of hypotheses. (Babbie 2010, 22-23.). In this case, the primary mode of analysis is deductive through which the thesis starts with the initial knowledge of CLM then the data collected from the Case Company will be tested against the ground theory to draw conclusions.

Another central methodology applied in this research is case study. As the case method provides an in-depth understanding of phenomena in context, the constitutive processes and the actors involved, it is applied to build new theory or validate existing theories (Gagnon 2010, 2-3). In this thesis, the case study is constructed in a context sensitive manner with an aim to providing a holistic view on the research problem.

Data collection

In consistence with the qualitative method used in this study, three types of qualitative data, being documents, observations and interviews (Patton 2002, 4), are obtained through various sources. The theoretical section is built mainly on written materials and documents from excerpts, organizational records, official publications and reports. The empirical section utilizes the researcher's direct observations and in-depth interviews with the Case Company in addition to the use of relevant organizational documents obtained from the company.

1.4 Scope and limitations

While contracts, in essence, represent relationship between and are managed by both the buyer and seller, the attention of this thesis will be devoted to the contract management on the sell-side. In particular, the fundamentals of CLM and analysis of a case implementation will be presented, thus highlighting the influence of CLM on the critical success factors of sales organizations.

The nature and scope of contracts varies across a wide spectrum, from small transactions to large-scale projects that usually involve heavy regulation requirements and substantial amount of money. This study predominantly focuses on the management of large contracts whose lifecycle comprises both upstream and downstream activities from the contract award. Accordingly, in addition to the processes occurring after the contracts are finalized, pre-award procedures, expressly activities prior to the contract formation such as negotiation, competitive tendering or a combination of both, will be discussed in details. The term 'tender' and 'bid' are synonymous and used interchangeably throughout the study.

Regarding the case study presented in this thesis, the industry which the Case Company operates in is upstream oil and gas. This industry, generally encompassing large-scale projects and operations, together with the high concentration on the contract management provides an excellent background for the CLM framework discussed in the research. Within the parameters of data

resources, no significant but general and relevant information on the industry will be provided.

When the nature of the oil and gas industry and its large body of laws and regulatory framework are taken into account, contracting process in this industry is under great influence and scrutiny of regulators and legal entities not only from one country but also internationally. Added to that, the divergence of contracting laws and legislations across countries and regions requires advanced knowledge in the field. Limited time and resources have precluded a thorough study of the legal risk management of CLM and consequently, legal aspects will be excluded.

During the research, the researcher's inadequate knowledge on technology related issues has forestalled the pursuit for detailed information regarding CLM technological capabilities. Therefore the thesis provides coverage for process-oriented but not technologically interest. Particularly, the study emphasizes the CLM process, its implementation and impacts within organizations without going into great details about technical attribute. Nevertheless, technology as an element of CLM will be presented. Information and further details about technological aspect of CLM can be found from various established providers of business solutions.

Last but not least, due to the confidentiality agreement between the Case Company and the thesis's author, the business intelligence or information that is crucial to the company or subject to intellectual property will be concealed with symbol "X" or kept hidden from the publication of the thesis.

1.5 Structure of the study

The thesis is organized into two main sections, the theoretical and empirical respectively. These two sections cover carefully and systematically the theories behind CLM and the case study. The overall structure of the thesis is visualized in Figure 2.

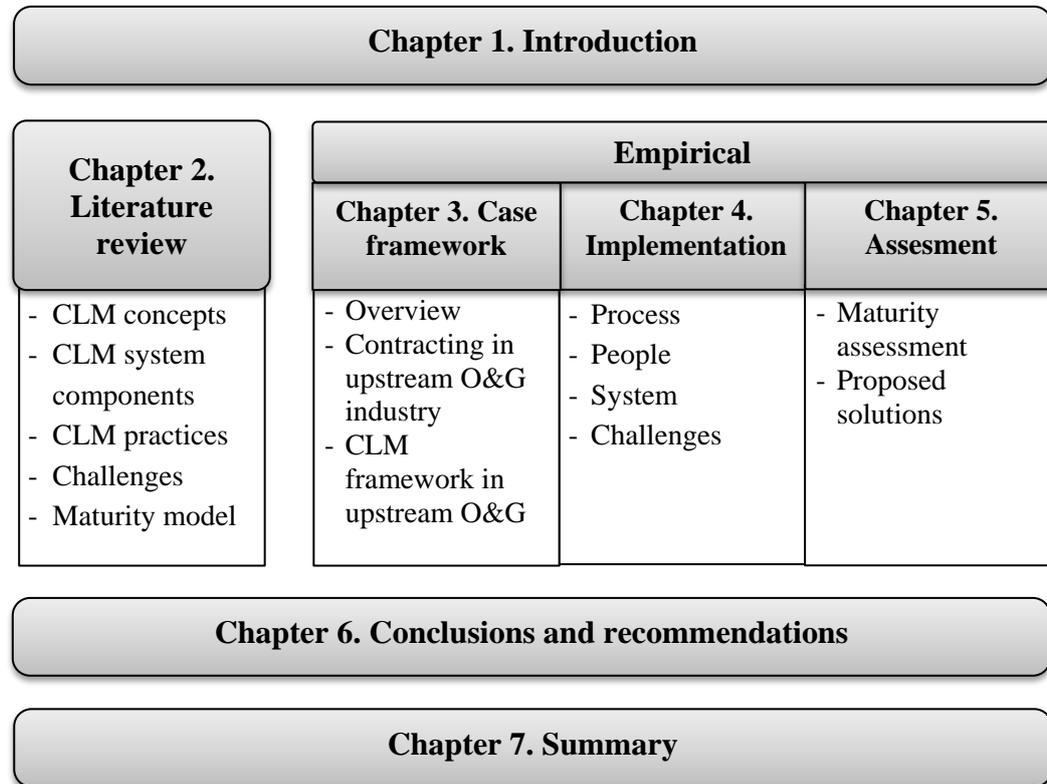


FIGURE 2. Thesis structure

This introduction is followed by the theoretical part in chapter 2. The chapter first begins with the discussion of contracts in today's business world, and then the definition to the term contract is given. After that, the main research problem is elaborated on the concepts of CLM and key phases in the lifecycle of a contract on the sell-side. Next, the chapter goes further into analyzing the fundamentals of CLM system in terms of process, organization and technological elements. Brief overview of current practices and future outlook of CLM as well as the maturity model for measuring CLM performance concludes the theoretical background of the study.

The three sequencing chapters present the empirical findings on CLM obtained from a Case Company in upstream oil and gas industry. The core subject of chapter 3 is the case CLM framework in which its development and current processes for CLM will be explored. Coming to chapter 4, the CLM implementation, including details about process, organizational structure around contract management, supporting technology and challenges is focused. In chapter 5, the case CLM is assessed based on the maturity model underlined in the theoretical background and specific recommendations for the Case Company to improve its CLM implementation are put forward.

After the case analysis, conclusions are drawn and presented in chapter 6. Also in this chapter, suggestions for further research are given along with a measurement for the reliability and validity of the thesis. Chapter 7 at the very end of this thesis finalizes the study with a short summary of the main information.

2 CONTRACT LIFECYCLE MANAGEMENT

Regardless of size, industry or products and services sold, today's organizations are established by, managed under and regulated by a vast and complex domain of documents generally referred to as "contracts". Companies are facing intensifying pressure to manage contracts better in the wake of a large number of different driving forces such as the increased complexity of modern contracts and the escalating burden of regulatory compliance. The knowledge on contract management is thus critical. In this section, first and foremost, as the central of the issue, concept around contracts, contract lifecycle and contract management are tackled, followed by a discussion of current issues related to the implementation of CLM. The chapter then ends with a description of the maturity model for CLM performance assessment.

2.1 Contracts

Contracts, dating back thousands of years, are one of the oldest features of trading relationships. Overtime, contracts have undergone a radical transformation from a document to a tool for business optimization.

Definition of contracts

Modern contracts are viewed and defined in a variety of forms due to the wide-ranging scope of a contractual relationship. The scope of contracts can vary from the simplest of transactions to the most complex transactions possible involving considerable funds and many parties (Saxena 2008, 4). In its broadest sense, contracts are agreements that define relationship between two or more parties (Shippey 2009, 9). A more comprehensive and detailed definition of contract is as follows:

"A contract is a set of documents, governed and restricted by law, that clearly establish the boundaries, extent, and intent of the executing parties' relationship, along with the rights and responsibilities of the entities involved." (Saxena 2008, 5).

From the sell-side perspective, contracts are agreements formed between the seller with their customers and are outlined as “customer agreements that display when sales materials or services are sold within a certain time period” (SAP 2013).

Service agreements, equipment leases and sales contracts are examples of customer contracts as defined within the parameters of this thesis.

Evolutionary role of contracts

It is worthwhile to pinpoint that in the past, the role contracts were relatively insignificant due to the small number and low complexity of contractual agreements an organization had to control. Contracts nowadays are far different from that picture. Previous decades have seen an evolution of contracts and its role resulting from the globalization, complex supply chains, technology advancements, heightened competition and increased regulatory oversight. In this era of ever changing economy, contracts are no longer pure legal necessities designed to protect parties but a powerful tool for optimizing business ongoing relationship. The way contracts are managed, therefore, must be transformed and constantly enhanced to keep up with the changes. (Saxena 2008, xxiii, 5.)

2.2 Contract lifecycle management

For large organizations with high value, heterogeneous and interdependent array of contracts, it is imperative to have a system in place to manage the entire cycle of contracts in order to maximize their contractual benefits. In this subheading, contract lifecycle management and the issues it encompasses are be elaborated.

2.2.1 Concept

In the broadest sense, CLM consists of a wide range of applications, procedures and systems for managing the contract lifecycle. Saxena (2008, 12) presented a comprehensive definition to the term Enterprise Contract Management (ECM), which in this thesis referred to as Contract Lifecycle Management (CLM) as follows:

“Enterprise contract management is the process of managing all stages in the lifecycle of enterprise-wide contracts with the goal of minimizing costs and risks, maximizing revenues, streamlining operations, and improving compliance with policies, procedures, regulations, and negotiated terms and conditions.”

The focal point being examined is indubitably the lifecycle of contract. The definition of contract lifecycle depends on a number of different factors influencing the nature and characteristics of a contract. Within the parameters set out in this thesis, the concept of contract lifecycle on the sell-side is presented in the following section.

2.2.2 Contract Life Cycle

Contracts have a cycle of their own that resembles the life cycle of living organisms. As a whole, a contract begins with its creation, then matures and eventually comes to an end by either termination or renewal (Saxena 2008, 12). The divergence in features of contract lifecycle across industries, such as the number of cycle phases and the extent to which these phases are outlined, has posed difficulty and confusion in the course of searching for the exact definition of the term. A number of definitions can be found on contract lifecycle and the majority of which refers to post-award activities (Elsy 2007, 3). Within the parameters set out in this study, contracts often embody a complex lifecycle that for an important part involves pre-award or upstream activities, in particular the pre-sales and tendering process. Due to its significance in this study, detailed explanation of the tendering process and related terms will be given in this section, specifically in the first phase of contract lifecycle, in addition to the focus on the analysis of the whole life cycle.

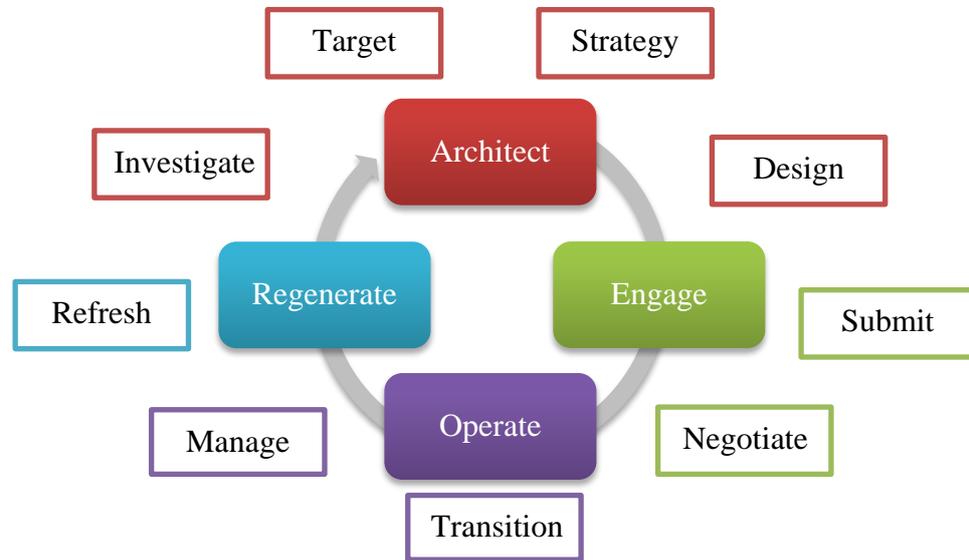


FIGURE 3. Contract lifecycle model (Cullen 2009, 96)

Cullen (2009, 96) developed a contract lifecycle consisting of four distinct phases as illustrated in figure 3. This cycle encompasses a range of different activities not only pertaining to the contract creation and execution but also the actions taken prior to and afterward the contract. In this manner, four phases of the contract lifecycle are broken down into nine building blocks to demonstrate the key activities occurring within each phase in the lifecycle. The objectives and primary outputs of each building block are summaries in figure 4.

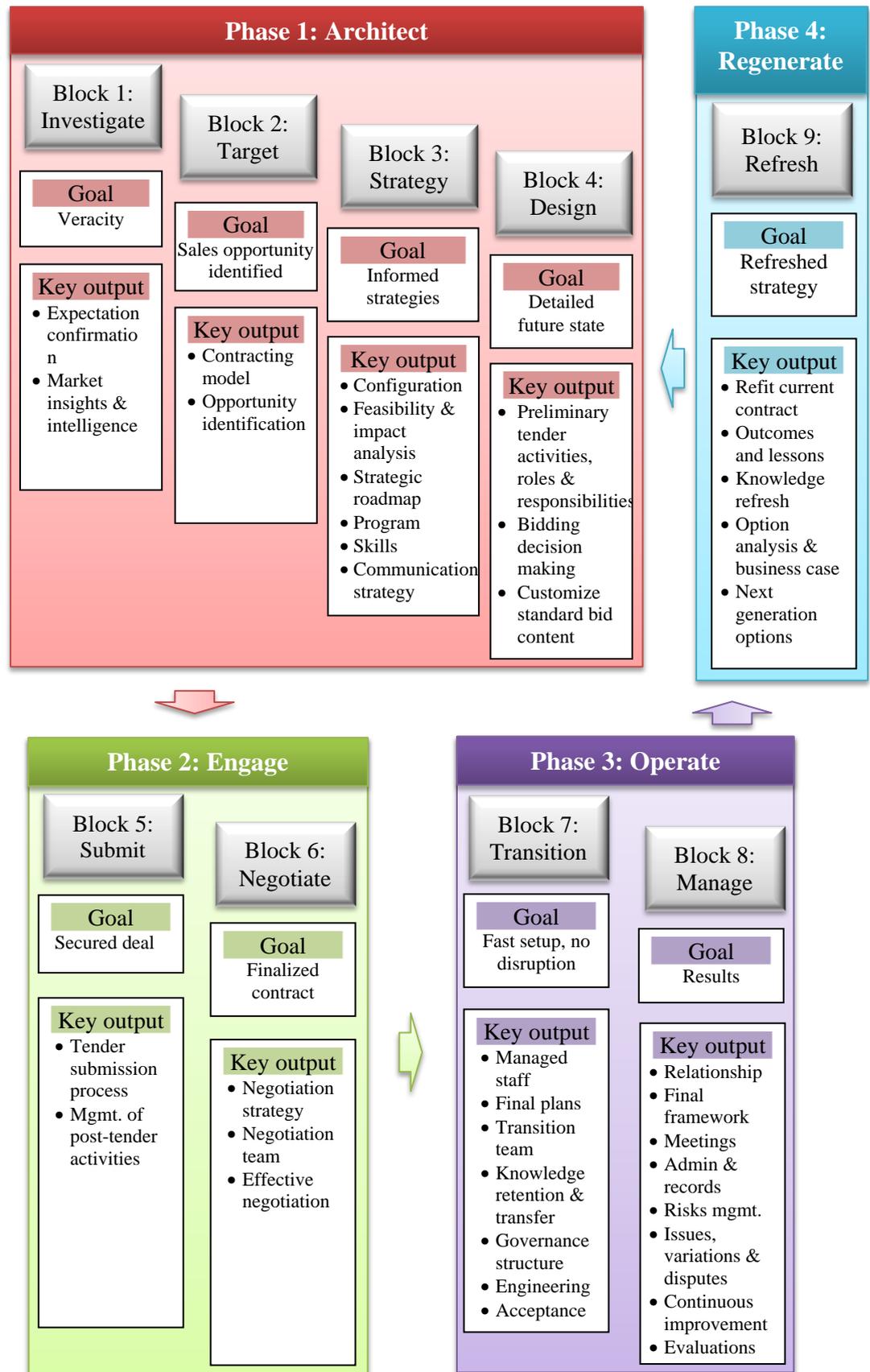


FIGURE 4. Contract lifecycle: Building blocks, goals and key outputs (adopted from Cullen 2009, 97)

In the next four subheadings, details on each lifecycle phase are elaborated.

2.2.2.1 Architect

The foundation of contracting is laid out in the Architect phases. In this first phase of the cycle, four building blocks are identified namely investigate, target, strategy and design (Cullen 2009, 98). The scope of this phase and its components depends attentively on whether it is procurement or sales contract cycle. From the sell-side perspective, the Architect phase includes activities that organizations pursue for the purpose of planning and early positioning of market opportunities from the prospective clients or customers (block 1 and 2) as well as the decision and preparation of tendering (block 3 and 4).

With respect to highly complex industries such as oil and gas under examination in this study, the establishment of a contract is mainly carried out based on the foundation of proposal, tender or bid. In this manner, basic knowledge on solicitation related documents such as proposal and tender is necessary to gain a clear understanding of the activities taken within Architect phase before exploring the details.

The mentioned solicitation documents are usually the results of an intricate tendering process which starts with the buyer publicizing its needs and requirements for particular products or services through procurement documents called solicitations. Solicitations can take the following forms: request for proposal (RFP), request for quotation (RFQ), invitation to tender (ITT), invitation to bid (ITB) and invitation for negotiation (Garrett 2007, 24). Within the parameters of this thesis, RFP, ITT or ITB and correspondingly proposals, tenders and bids will be studied. A RFP or ITT or ITB in principle is a document, or often a series of document used to solicit not only price quote but also viable solutions from suppliers to meet the functionality specified (Newell 2005, 196). Coming to the sell-side, upon receiving the RFP or ITB or ITT, a proposal or tender is prepared and through this, the seller presents different approaches for meeting buyer's needs and commits to undertake work or provide services for stated prices (Lewis 2012, 1).

As mentioned, activities performed in the Architect phase are categorized and put in order under four building blocks. The first step to take is analysis of current market situation (block 1) and based on the information gathered, organization can identify and ultimately qualify potential key events, projects or opportunities for a client (block 2). At this stage, an opportunity may or may not have specific details about the range of product and services required, however it likely has an approximate value coming from the customer planning process. This value should be captured and utilized to develop suitable sales and contracting strategies (block 3). In response to the official solicitations such as RFP, ITT or ITB from the buyer, the seller develops and customizes its offers in form of proposal or tender that reflects its capability and complies with the buyer's requirements (block 4). (Cullen 2009, 98-100; Garrett 2007, 25.)

2.2.2.2 Engage

The Engage phase together with the Architect phase enables both buying and selling organizations to exert their leverage on the contract terms and conditions (T&Cs) that directly affect their obligations and benefits. Two building blocks are identified as the foundation for this phase. In the original cycle by Cullen (2009, 97), the fifth building block is labeled 'select' as it lays out the activities taken from the buy-side position when evaluating and selecting the most competitive tender. For the purpose of this study, the phase is renamed 'submit' to reflect the corresponding actions from the sell-side. The goal identified in this building block is to secure the deal by submitting the proposal or tender according to the buyer's requirements and managing the follow-up activities such as post-tender communications and clarifications (block 5).

Once a suitable seller is selected, both selling and buying parties will begin the negotiation process to reach a common understanding for their undertaking and satisfactory T&Cs. The result of this process is a finalized contract that contains shared expectations and understandings (block 6). (Garrett 2007, 26.)

2.2.2.3 Operate

The Operate phase, as its name suggests, occurs in the post-award period when the deal is finalized, executed, and managed in consistence with its terms. The phase comprises of the seventh and eighth building blocks named transition and manage. At this point, the mission of both parties is to facilitate the operations, ensure compliance with contractual T&Cs and administrate issues related to risks, change and disputes. (Cullen 2009, 102-103.)

In essence, the two preceding phases to the Operate phase underpin the activities that lead to the contract execution. Therefore, Operate phase depends greatly on the strategies, processes, documents and relationship management designed in earlier building blocks. Poor management of contract lifecycle up to this point can lead to misinterpretations, ambiguities, disagreements and disputes which will eventually give rise to a number of tedious problems. (Cullen 2009, 103.)

2.2.2.4 Regenerate

Contracts come to an end by either termination or by reaching the end of their terms. At this stage, the life cycle enters Regenerate phase consists of one building block, where next-generation options are assessed by monitoring contract close-out and performance measurement. The contracting strategy is thus reviewed and refined to befit the current and future market conditions. (Cullen 2009, 104.)

2.2.3 Elements of contract lifecycle management

Today, contracts are far from simple documents and contract management is no longer limited to managing documents but managing the life cycle of contracts with distinct phases and building blocks as examined in the preceding part. A well-rounded system for CLM consists of three elements that are processes, people and system support (Paris 2010, 197).

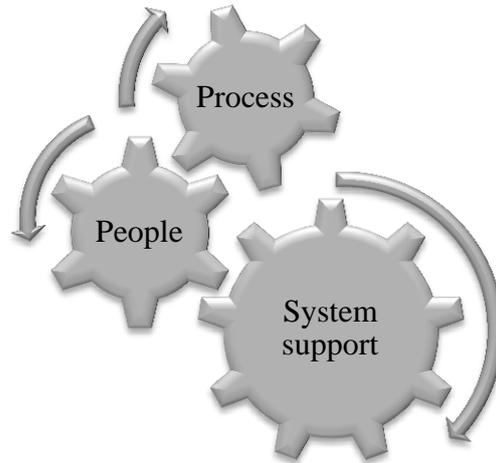


FIGURE 5. Contract lifecycle management (Paris 2010, 197)

2.2.3.1 Process

It is critical to establish an efficient process throughout the whole contract lifecycle and to define clear scope and description for each phase. In brief, the process should indicate the activities to be performed. This can be achieved, for example, by drawing up rules, standard workflows and templates. Once the process is defined, it should be communicated and understood across the organization and adhered to on all contracts. (PwC 2003, 7; Saxena 2008, 106.)

Typically, a process of CLM consists of six main activities organized under three main stages. These stages, pre-award, award and post-award, are classified based on their positioning in accordance with the award of contract. From the sell-side standpoint, the pre-award stage involves presales activities and tendering process which is the scope of Architect phase within the contract lifecycle. The award stage takes place during the contract creation in Engage phase. The final stage, the post-award, includes all activities taking place after the award of contract and passing through the Operate and Regenerate phase of contract lifecycle. To provide a clear contrast between the actions taken by the buyer and seller, the CLM processes from the viewpoints of both sides are summarized in Figure 6. Within the limitation set out for the study, the remaining sections of this subheading discuss the process on the sell-side in reflection of contract life cycle.

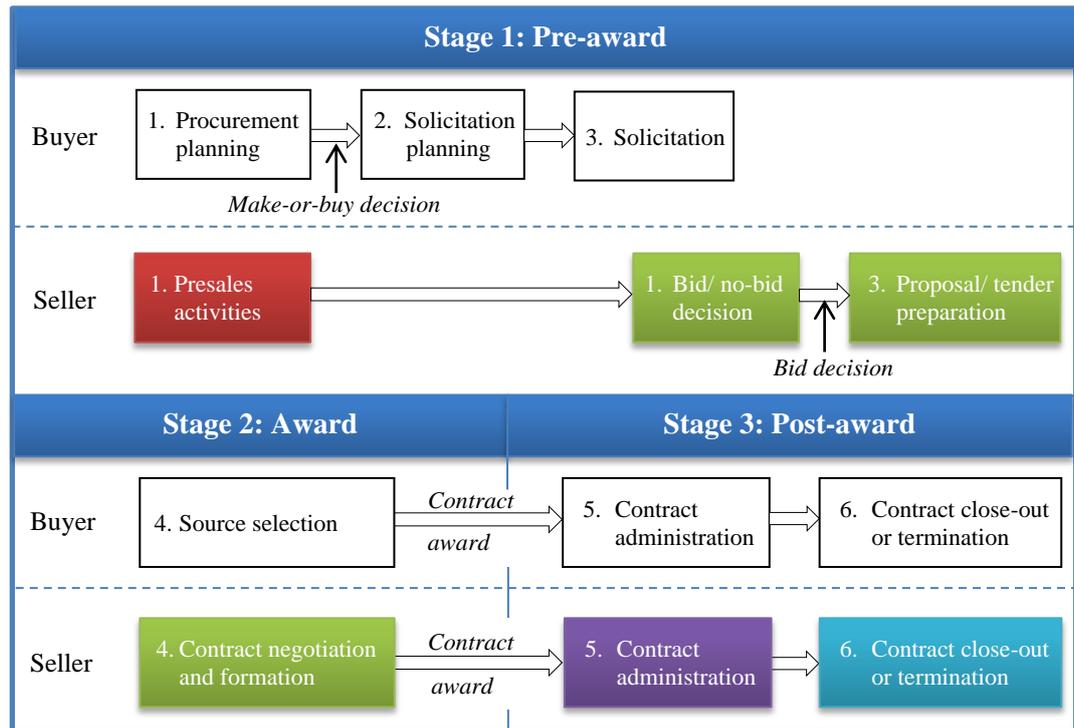


FIGURE 6. Process for CLM (Garrett 2007, 20)

The process for CLM entailing six major activities on the sell-side adopted from Garrett (2007, 22) is illustrated in Figure 7.

Conducting pre-award stage

Three major steps taken by the seller in this first stage include presales activities, decision on bidding and preparation for the tender document. Presales activities present the proactive involvement of the seller with potential or current customers to achieve the ultimate goals of sales opportunity identification and strategy development. Upon receiving the buyer's solicitation, it is critical for the seller to carefully consider the option on whether to proceed with the tender or bid based on the evaluation of the solicitation, the competitive environment and assessment of risks against opportunities for a potential business deal. Once the company arrives at the decision to continue with the bidding, tender or proposal documents will be developed. This step can involve from a small group of people to an enterprise-wide approach depending on the scale of the project. (Garrett 2007, 25.) In short, this stage is designed mainly based on the first phase of the contract lifecycle with an aim to developing presales vision and partially on the second phase to produce the outcomes necessary for the tendering process.



FIGURE 7. Sell-side CLM process (adopted from Garrett 2007, 22)

Conducting the award stage

Applying the contract lifecycle model, the award stage is in the contract's Engage phase. The name 'award' comes from the actions of the buyer when selecting a suitable supplier based on the offers received and awarding the contract. Once the seller has been identified, both buying and selling parties must arrive at a mutual understanding of the contractual relationship which is laid out on the T&Cs. In addition, T&Cs are a vehicle to protect both parties from uncertainty and risks that might occur during the contract execution. The development of appropriate T&Cs is thus a crucial aspect in this stage. Common T&Cs include period of performance, intellectual property rights, payments, completion criteria and change management. (Garrett 2007, 27.)

Conducting the post-award stage

As illustrated in figure 6, both the buyer and the seller carry out the same steps in the post-award of contract: contract administration and contract close-out or termination. Contract administration, clearly carried out in the Operate phase of contract lifecycle, is the process of managing compliance with the T&Cs during the execution of contract. Disputes, problems and changes are unavoidable in many cases. Consequently, organizations need to employ systems for managing such disputes and changes to ensure satisfactory contract performance. (Garrett 2007, 28.)

At the end of the contract lifecycle, the Regenerate phase, all involving parties have to settle final administrative and legal details before closing out the contract. Key data must be recorded to evaluate the contract performance and to assess the contracting strategy for future reference. Unfortunately, not all contracts reach the end of their cycles. They are sometimes terminated either due to mutual agreement of the parties or due to the failure of one or both parties to carry out all or part of the contracts. In this event, both parties still need to carry out the same close-out actions after receiving the termination notice. (Garrett 2007, 29.)

2.2.3.2 People

A process for CLM alone is not enough to build an efficient CLM system. The role of an organizational structure to implement the process is thus fundamental. Contracts, in essence, reach out to multiple functions from sales, procurement, operations to legal and finance. Consequently, contract ownership disperses across different individuals and departments. Responsibility for the CLM process, however, should not be mistaken or confused with responsibility for any particular contract or any specific stage in the contract lifecycle. Accordingly, CLM responsibility should not be spread between different actors due to the risk connecting to the coordination between departments. The lack of coordination in CLM may extend the sales cycle, hinder the holistic view of the process and result in loss of revenue or increase of unwanted costs. (PwC 2003, 6.)

Best practices in CLM show that a functional owner (usually a contract manager) or a centralized contract administration group should be embraced and instituted to create an enterprise-wide approach to effectively manage contract lifecycle (Aberdeen Group, 2006b, 10). One of the strategic benefits of having an oriented contract administration group is its high level of comprehension and familiarity with contractual T&Cs and provisions laid out in all contracts being created and executed within the organization (Zazaian 2006, 49). The team therefore can serve as a central point to manage all contracts and ensure appropriate oversight of contract commitments.

2.2.3.3 System support

Technology advancement in the past decades has brought about new business solutions that facilitate the automation of many different business processes. Correspondingly, numerous information technology (IT) enabled tools have assisted organization in moving toward the CLM automation.

On the sell-side, the linkage between contracts and finance is extremely important due to the close tie of revenue recognition to contractual T&Cs. Without a well-integrated process with effective IT system supporting the process, billing, payment, revenue reporting, and forecasting can become cumbersome, time-

consuming and far less accurate. As a result, the need for efficient and cost-effective solutions for CLM is both real and significant for organizations' operations and future success. (Garrett 2007, 280.)

With regards to the actual technology being used for CLM on the sell-side, in-house solutions are the most common due to the advantage of low cost. However, these solutions often have limited accessibility and weak functionality. Examples of homegrown systems include Access databases and various other Microsoft products (Words, Excel). (Aberdeen Group 2006a, 8; PwC 2003, 12.)

During the past few decades, heightened interest in improving CLM has given birth to a new variety of technology solutions generally called Enterprise Contract Management (ECM) solutions. These products are available from various software vendors including Enterprise Resource Planning (ERP) vendors (such as SAP and Oracle), Customer Relationship Management (CRM) vendors (mainly focus on the sell-side), and e-procurement companies. These solutions are often well-designed to cope with high volume and complex contract landscape and can be easily integrated with the wider enterprise solutions. However, despite these advantages, they still have some limitations with regards to their inflexibility and incapability to tailor to the need of each and every organization. (Saxena 2008, 18; PwC 2006, 12.)

2.3 Implementation of contract lifecycle management

This section aims at addressing the issues concerning the implementation of CLM on the sell-side through the major challenges that hinder the success in CLM. Then, the current situation surrounding CLM is examined and a future outlook of CLM that organizations anticipate is depicted.

2.3.1 Challenges in implementation

In a perfect world, all contracts would be formed in good faith, contract terms would be well-defined, and the original intent of the contractual relationship would be respectfully fulfilled. Contracting practices in reality, however, do not always reflect this ideal world, nor are they conducted with optimal efficiency.

There are a number of challenges in CLM and it is understandably in the best interests for organizations to identify and alleviate these stumbling blocks.

(Saxena 2008, 15.)

Top challenges on the sell-side

One of the very first challenges is often the determination of the starting point for CLM initiative. The process of preparing and launching of CLM in an organization can be very lengthy and time-consuming (Jaakkola 2008, 1). In fact, many companies have already employed different separated processes to manage contracts. These processes, however, are inefficient and disjointed due to the lack of control parameters to achieve systematic management. In any case, even to organizations having well-defined systems in place for CLM, successfully management of these systems in practice is challenging. A survey by Aberdeen Group on the sell-side (2006a, 4) reported six major challenges as summarized in figure 8.

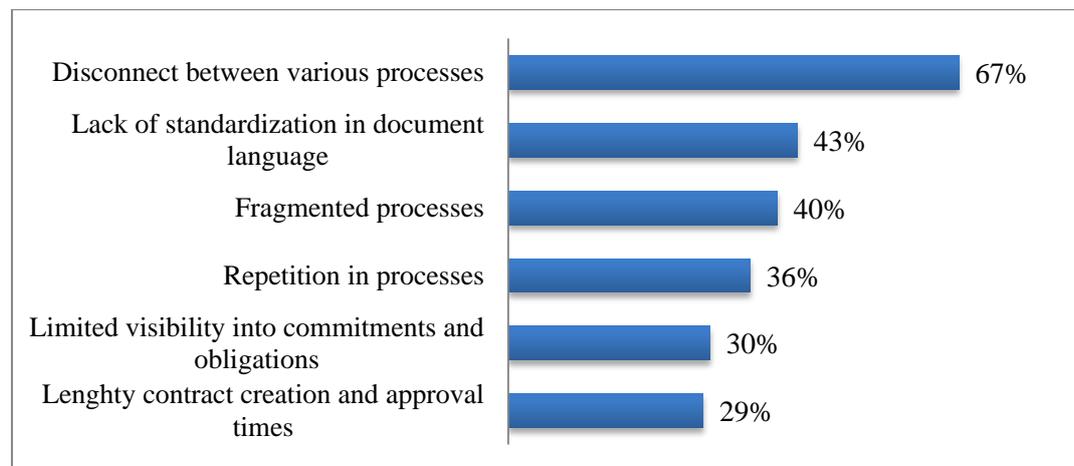


FIGURE 8. Major challenges for CLM on the sell-side (Aberdeen Group 2006a, 4)

According to the survey, 67% faced disconnection between processes, 40% had fragmented processes around CLM and 36% experienced repetition. It can be deduced that the area in which most problems reside is associated with the processes. In essence, contract lifecycle passes through a number of phases that can virtually involve multiple departments from procurement, sales to legal and risk management. Contracting processes, thus, have traditionally been fragmented

and subject to miscommunications and disjuncts during the various processes such as pricing, proposal creation, negotiation, order management and invoicing. This obstacle is even further complicated in a labor-intensive and disparate contracting environment that undesirably allows frequent repetition and consequently causes lengthy sales cycles. (Saxena 2008, 16; Aberdeen Group 2006a, 5.)

Another contracting problem often faced on the sell-side is connected with the language used in various documents such as proposals, contracts and service agreements. The lack of standardization in language, normally evidenced by the uncontrolled customization of contract, is a barrier to achieved conformity in various contract terms and conditions. This thus exposes companies to both financial and legal risks. (Aberdeen Group 2006a, 5.)

In many industries, contract compliance is an issue with intense concentration. Managing commitment and compliance on the whole is challenging for both buying and selling organizations. According to the survey by Aberdeen Group, a third of the survey respondents see failure to manage compliance as a hindrance to CLM on the sell-side. The information most critical to compliance is virtually set out in contracts. This, combined with the fact that the processes for managing contract lifecycle are often fragmented and ineffective, leaves organizations ill-equipped to address the requirements envisioned in contractual agreements they enter into. From the sell-side standpoint, in the conditions where, for instance, additional or unknown customer commitments and corporate liabilities arise can be the source of significant revenue loss and serious legal consequences. (Aberdeen Group 2006a, 5; Saxena 2008, 17.)

Lengthy sales cycle, frequently a result of all of the mentioned challenges, is also an emphasized issue. The longer the sales cycle is the higher possibility for company to miss revenue growth and increase cost of sales (Lodato 2006, 176).

Other challenges

Besides the challenges named in the survey by Aberdeen Group, there are a number of other challenges that should be taken into account. These include the labor-intensive processes, poor visibility into contracts and inadequate analysis of contract performance.

Traditional contract management contains many elements that are manual and some will remain manual at any rate, i.e. subjective approvals. This leads to a series of dispersed and largely labor-intensive activities that add time and cost to the entire contract lifecycle, resulting in overall elevation of inefficiency and risk for organizations. (Paris 2010, 212; Saxena 2008, 16.)

Effective CLM relies greatly on contract data and access to contractual documents. With regards to contract storage, contracts in many companies are held in multiple forms (i.e. hard copies or digital format) and kept in disparate locations. With a typical Fortune 1000 company maintaining 20,000 to 40,000 active contracts at any given time, contract visibility is therefore undoubtedly a paradoxical issue requiring continuous monitoring of information access and protection while ensuring accuracy of data and retention of document integrity. (Saxena 2008, 16.)

Measurement of contract performance is another area that many organizations lack insights into. Traditionally, contract performance analysis is often carried out on ad hoc basis and accordingly results in a buildup of hidden problems that can remained hidden within an organizations for years. This, to a great extent, is then intensified by the various underlying issues as mentioned earlier. In the succeeding part, the study will venture into some of the current practices and responses to these challenges in the future.

2.3.2 Current state of CLM

Profound changes in the current business environment, signified by the advent of global supply chains, heightened economic uncertainties and new regulatory requirements has led to an increase in interest of organizations in CLM. From the strategic point of view, in response to the increasing demands of proper management of the contractual agreements, CLM in many organizations has become a powerful instrument of relationship segmentation, risk management, quality control and compliance program. (Saxena 2008, xxi; Paris 2010, 196.)

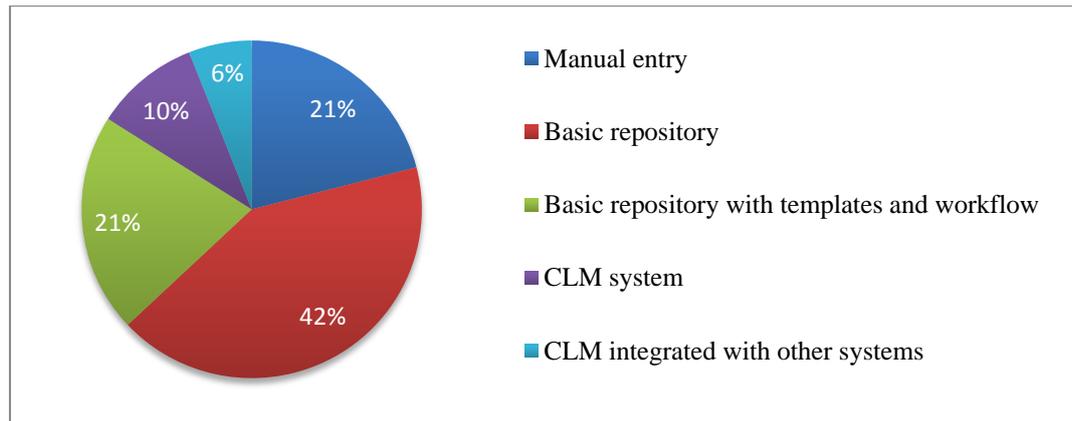


FIGURE 9. Current state of CLM (Ariba 2012, according to IACCM 2012)

On the other hand, notwithstanding the growing attention directed to the efficient management of contract, CLM for the most part is in a state of underdevelopment. As indicated in figure 9, the current state of CLM for the most part is underdeveloped. Only 16% of organizations have developed CLM system (Ariba 2012, according to IACCM 2012) while the rest is still following the equivalent of old-school contracting, where there is no concrete contracting strategy and limited visibility or understanding of key contract issues. The most common behaviors of such outdated contracting method are the excessive manual work and disorganized contract repository. In cases of problems or changes, contract management teams are often in the dark of the causes and mainly rely on overly detailed and rushed manual work for information (Smith 2012, 5).

In order to ease such inefficient labor-intensive work and to improve the practices in the field, CLM over the past decades has been a subject of intense study and a number of solutions have been identified. In spite of that, studies indicate the continuous resistance to CLM technology. Merely 8% of organizations have adopted a formal CLM solution (Ariba 2012, according to IACCM 2012). This might be caused by the attachment to the traditional practices that in many cases outdated in the current economic environment or by the disappointing results brought by technology itself (Paris 2010, 206).

An additional reason for the absence of an overarching strategy around CLM observed in today's business is the lack of rounded contract and commercial skills of the people in charge of contract management, even to the degree that some

executives lack knowledge of the overall contract portfolio. Failure to have the right people to manage contractual agreements can severely affect the operations and expose the organizations to unforeseeable risks and threats. A suitable set of skills for contract management is thus vital to cope with the growing complexity of today's trading relationships embedded in contracts. (Cummins 2012a; Smith 2012, 4.)

On the whole, poor management of contracts can have a direct impact upon the value of contractual relationship and in turn lead to various adverse consequences in terms of finance and risk. Studies show that organizations on average lose an estimated 9% of annual revenue due to their inability to manage contracts (Cummins 2012b, according to IACCM 2011/12). On the sell-side, most noticeable results of inefficient CLM include loss of revenue, lengthy sales cycle, missed sales opportunities and customer dissatisfaction (Aberdeen Group 2006b, 3).

In this manner, it is clear that there is an overriding need to address this poor state of CLM. In the following part, the development prospect of CLM will be discussed by examining the prevailing trends as well as the driving factors for improvement in CLM.

2.3.3 Future outlook

Despite the current poor state, the future of CLM appears to be promising and ambitious with a large number of organizations setting their sight on achieving CLM excellence in the near future. A number of trends along with various driving factors for the improvement in CLM will be indicated in this part.

2.3.3.1 Trends

Contracts undeniably play an unprecedented role in present operations and the future success of today's organizations. Contracting is thus "one of the core competencies required by any successful 21st century business" (Cummins 2009, according to Willcocks). It is not surprising that benchmark studies conducted by

Aberdeen Group have indicated CLM among the top business application investments (Saxena 2008, xxii).

The future state of CLM in 2020 was revealed based on a survey by IACCM indicating four main anticipations of over 700 practitioners and executives. The result of the survey is illustrated in figure 10. It is seen that the majority, 64% of the survey correspondents (Ariba 2012, according to IACCM 2012), looks forward to reach a high level of CLM efficiency characterized by the integration of CLM to other enterprise information systems. This implies a board number of organizations are actively seeking improvements in CLM in order to achieve the highest level of maturity. In contrast, there will still be a small proportion of 4% who will only start to initiate the CLM in seven year time.

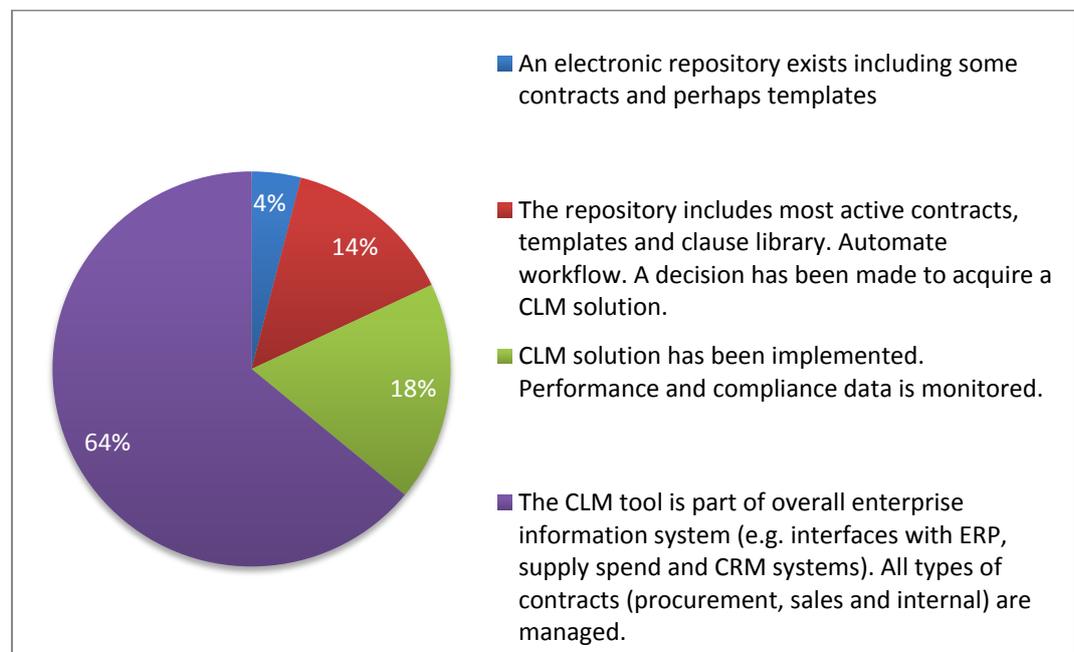


FIGURE 10. Expectations for CLM in 2020 (IACCM 2012)

It is understandable that the most important changes between today and 2020 in terms of CLM process will be the process automation which will undoubtedly boost the efficiency and reduce the unnecessary manual work. With respect to people, the construction of collaborative networks will definitely enhance the relationship among key stakeholders, understanding of organizations' capabilities and willingness to invest in the direction the parties are heading to. Regarding technological aspect, the development of new innovative technology with higher

flexibility and sophistication in analytic functions is on its way to support process automation. (Ariba 2012, according to IACCM 2012; Cummins 2012a.)

2.3.3.2 Driving factors

The trends toward improvements in CLM and CLM excellence are stimulated by a number of underlying factors. From the sell-side standpoint, contractual agreements are those directly affect organizations' revenue and relationship with customers. The management of contract is constantly on high demand for effectiveness and betterments. Figure 11 lists the major drivers for the improvements in CLM on the sell-side based on the survey by Aberdeen Group. The most pressing reason is the need to enhance customer relationship, which is common goal of every company in today's complex and multilateral business world. Combined with the other incentives to fulfill contractual commitments and obligations, better CLM would help sell organizations build strong relationships with customers. When it comes to revenue and costs, the length of sales cycle is critical. Reducing sales cycle through CLM means better profit realization and minor revenue loss resulting from time-consuming manual processes and unwanted errors. (Aberdeen Group 2006a, 2-3.)



FIGURE 11. Factors driving improvement of CLM on the sell-side

Apart from the presented underlying factors to improve CLM, increasing regulatory compliance is also an intense issue that imposes organizations to address today's compliance requirements and impending regulations in the future. The trend is that forward-thinking organizations are seeking sustainable solutions to cope with the future compliance demand. (Saxena 2008, 61.)

Under these circumstances, organizations expressly need suitable means to achieve their desired goal in CLM improvement. The subsequent section will introduce the contract management maturity model as a powerful tool for organizations to assess their current shape in CLM and to enhance future performance.

2.4 Contract management maturity model

The analysis in the previous part indicates that successful achievement of CLM improvement can be a very arduous task. One of the most compelling reasons for failure in CLM is in fact the absence of orientation and perspective to the holistic approach to CLM. Thus, success in CLM initiatives calls for a model that will support organizations in CLM implementation. A number of theories and models have been developed with intention to improve various business processes. Among those, maturity model has emerged in recent years and served as an effective and proven method for organizations to gain control over and to enhance their business processes. The foundation of maturity model theory is that “an organization is a dynamic entity, with differing capabilities and needs depending upon its stage of maturity”. (Saxena 2008, 90-92.)

With regards to the process of CLM, a right maturity model sets an evolutionary roadmap for organizations to facilitate the improvement in their contract management capability. In this section, the contract management maturity model (CMMM) will be presented as a framework for developing the CLM from an ad hoc state to a highly structured and optimized level.

2.4.1 Objectives of the CMMM

Albeit being a recurrent topic for both academic and operational discussion for decades, CLM still lacks comprehensive standards or framework for evaluating the practices in the field. To date, the CMMM provides a system for measuring and improving performance in CLM. The development of CMMM has been to achieve the following objectives (Saxena 2008, 98.):

- To assist organizations in implementing CLM towards excellence
- To improve CLM processes in a predictable, measurable and organized manner
- To provide standards and directions to the contracting community
- To help focus investments in suitable CLM tools, training, process definition and management practices
- To provide capability-based assessment for the maturity of CLM processes and practices. (Saxena 2008, 98.)

2.4.2 Maturity levels

Garrett (2007, 213-232) carried out a study which examines existing process capability maturity models to determine the suitable features and characteristics for the CMMM. The majorities of models consist of five levels with each level building upon the previous one. A deduction drawn from the study points out that most maturity models reflect an evolutionary growth in process maturity from an ad-hoc level with fragmented system (level 1), to a basic disciplined process (level 2), to a structured and repeatable process (level 3), to an enterprise wide integrated process (level 4), and finally, to a level in which processes are optimized and focused on continuous improvements (level 5). (Garrett 2007, 217, according to Carr 2001, Dinsmore 1998, Foti 2002, Kerzner 2001.)

The research by Garrett goes further into the applicability of maturity model in terms of visibility into the process it assesses. The findings point out that current maturity models lack coarseness and specificity in the focus area. In order to mitigate this drawback in the development of the CMMM, the CLM process was broken down into its specific sub-processes, thus providing sufficient insight and

visibility into the more detailed CLM processes and practices. The outcome of the research is a five-level maturity model for CLM having the levels of “Ad Hoc”, “Basic”, “Structure”, “Integrated” and “Optimized”. (Garrett 2007, 217-218.) The CMMM and the features of each maturity levels are described in Figure 12.

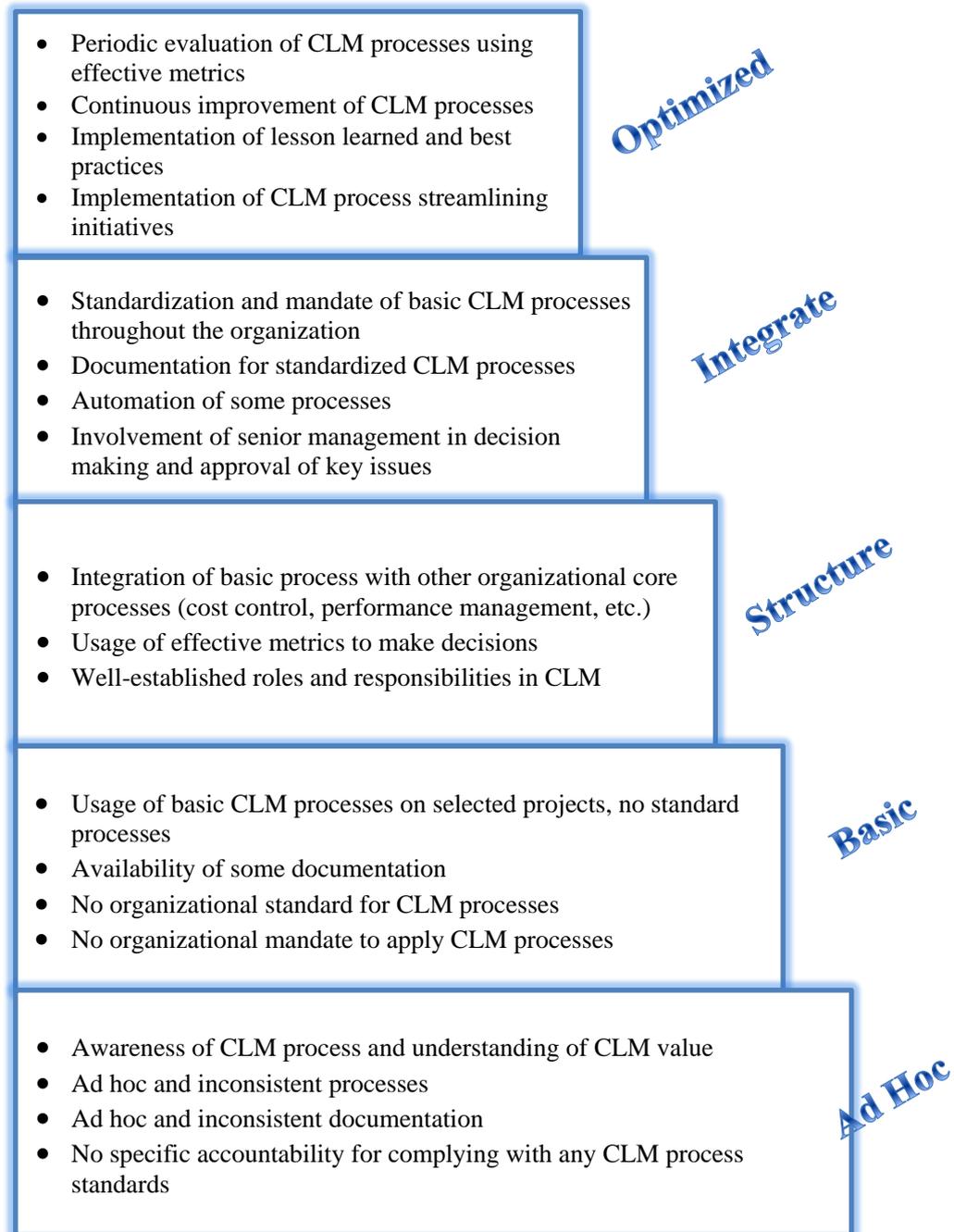


FIGURE 12. CLM maturity model (adopted from Garrett 2007, 219)

3 CASE: CONTRACT LIFECYCLE MANAGEMENT IN UPSTREAM OIL AND GAS INDUSTRY

The fundamental premise of this chapter is the framework for CLM from the seller standpoint in upstream O&G. This chapter first briefly introduces the upstream sector and the Case Company. After that, by analyzing a certain number of industry characteristics, the chapter uncovers the influence of the industry nature in the CLM practices. The CLM framework is laid out with the purpose to provide an overall view of CLM at the Case Company.

3.1 Introduction to upstream O&G and Case Company

As titled, the thesis examines the CLM in the O&G industry, in particular the upstream sector. This industry sector bears unique features that directly influence the scale, value and complexity of the projects undertaken, which in turn affect the contracts and CLM. This section is thus set out to seek general understanding of the upstream O&G with respect to the classification, operational risks and the actors involved in the sector. Brief overview of the Case Company is also covered in this section.

3.1.1 Upstream O&G in brief

The oil and gas industry encompasses a number of distinct operational stages that are classified into three sectors: upstream, midstream and downstream. The term upstream O&G refers to the activities for exploration and production of crude oil and natural gas. Midstream involves the transportation, storage and marketing of oil and gas extracted from the first stage. At the end is the downstream sector involving refining process of hydrocarbons into usable products as well as selling and distributing these products to end users. (World Petroleum Council Canada 2013.)

In terms of business security, the upstream O&G has always been characterized by the undertaking of high risk for high reward. The most prevailing risk factor is the operating environment that involves many dangerous elements such as fire and explosions that can lead to major loss of people, production and revenue. The

2010 fatal explosion at Deepwater Horizon oil rig causing the worst oil spill in the history of the Gulf coast is a vivid example of the industry's proneness to accidents and mishaps done to humans, equipment and environment.

At the same time, capital costs have been built up and grown larger in line with the industry's attention for mega-projects that enable economies of scale (Appendix 2). This trend in the expanding project scope has indeed created bigger challenges to manage project and contract. (Oracle 2011, 2-4.)

Given the broad project scope in upstream O&G, a large body of people are usually involved in performing and managing upstream projects. Based on the functions, the actors in the sector are divided into two groups of operators and service suppliers. The operators, also known as licensees, are firms that hold the licenses to operate oil or gas fields. Service providers' main function is to provide oil and gas services (i.e. geology, drilling, well planning and development). (Sasson and Blomgren 2011, 15.).

In contracting terms, an operator is often a company which organizes and manages an oil and gas specific operation. A service provider, contracted by the operator to perform a work or service is referred to as a contractor. The term 'service provider' and 'contractor' are thus used interchangeably from this point onward. The subsequent part will provide a short presentation of the Case Company which is a well-established service provider in the field of upstream O&G.

3.1.2 The Case Company

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3.2 Overview of contracting in upstream O&G

By and large, contracting in upstream O&G is under constant pressures inherited from the complexities and multifariousness of the industry. Thus, understanding the unique requirements of the industry becomes crucial in CLM. In this section, based on the information from the Case Company, the pressing demand for CLM in upstream O&G is presented along with the model for contract lifecycle on the sell-side in the sector.

3.2.1 Pressures for CLM

One of the top concerns and pressures for CLM in upstream O&G is the risk imposed by various causes. A major source of risk, with regards to the actors involved in upstream O&G, is from the subcontractors. Subcontractor contracts that bind the operator, main contractor and subcontractor, are normally set up and managed by the main contractor. It is thus the main responsibility of the main contractor to analyze and mitigate the possible risk prior to the operation. One of the most effective tools for subcontractor risk assessment is through the management of contracts which enables the contracting organizations to explicitly outline each party's responsibilities and liabilities. Failing to properly manage contracts, organizations run the risk of being exposed to unwanted liabilities when problems occur.

Another source of risk is connecting with the risky and dangerous settings of operating environment in upstream O&G as pointed out in the preceding section. As the result, the industry is subject to rigorous scrutiny by various bodies of law. In particular, great attention of regulatory requirements is often placed on the issues of health, safety and environment (HSE).

The compliance issue is so far an embodiment problem related to CLM regardless of the industry in question. Organizations are under constant pressure for managing the contractual agreements and relationships to meet with the increasing demand for compliance.

In addition to the risks and the regulatory requirements, the length of contract lifecycle, frequent rate of change and variation order requests also add a unique

and distinctive dynamic to the CLM needs in O&G (Aberdeen Group 2012, 1). More than often the change and variation are demonstrated through a series of change orders and call-offs. These types of documents are generated during the contract execution and often neglected. As a consequence, from the seller perspective, failure to manage and record these documents severely affect the revenue recognition and payment collecting.

3.2.2 Customer contracts at the Case Company

As specified in the theoretical background, from the sell-side perspective, contractual agreements with customers can be referred to as customer contracts. At the Case Company, a customer contract is defined as “any completed agreement between the company and another party that defines the T&Cs under which the company’s products or services will be provided”. Examples of such agreements include service contracts, T&Cs of Performa agreements in the ITB/ITT, any purchase or work or service orders, and subcontract agreements. The Case Company divides the customer contracts into two subcategories that are sales contracts and service-related contracts. The classification is illustrated in Figure 14.

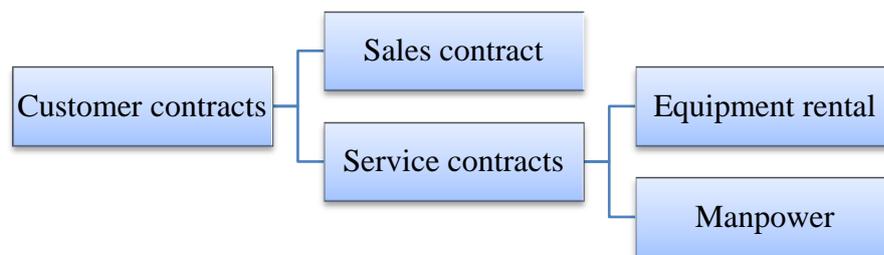


FIGURE 13. Type of customer contracts

Sales contracts are formed when the sales is made for goods (i.e. tool and equipment) or services. The service contracts are drawn up when the Case Company leases its equipment and workforce to the customers for specific project during a certain time period as defined in the T&Cs of the contracts.

Customer contracts generally derive from a chain of processes with the initial step taken by the customers when solicitation is sent out. Then from the point of

solicitation, there are different courses that lead to contract formation or award in upstream O&G (Appendix 3). Following the thesis's parameters, this section is limited to the path that involves tendering process.

3.2.3 Contract lifecycle in upstream O&G

Customer contracts at the Case Company, irrespective of the type and scale, pass through a number of discrete and largely sequential phases known as contract lifecycle as described in the theoretical part. This lifecycle, similar to any contract or project lifecycle in O&G, is relatively long and often involves complicated processes.

Based on the overall lifecycle of contract observed in upstream O&G, the Case Company designed a contract timeline as depicted in figure 15. This timeline reflects the lifecycle of contracts and highlights five key milestones.

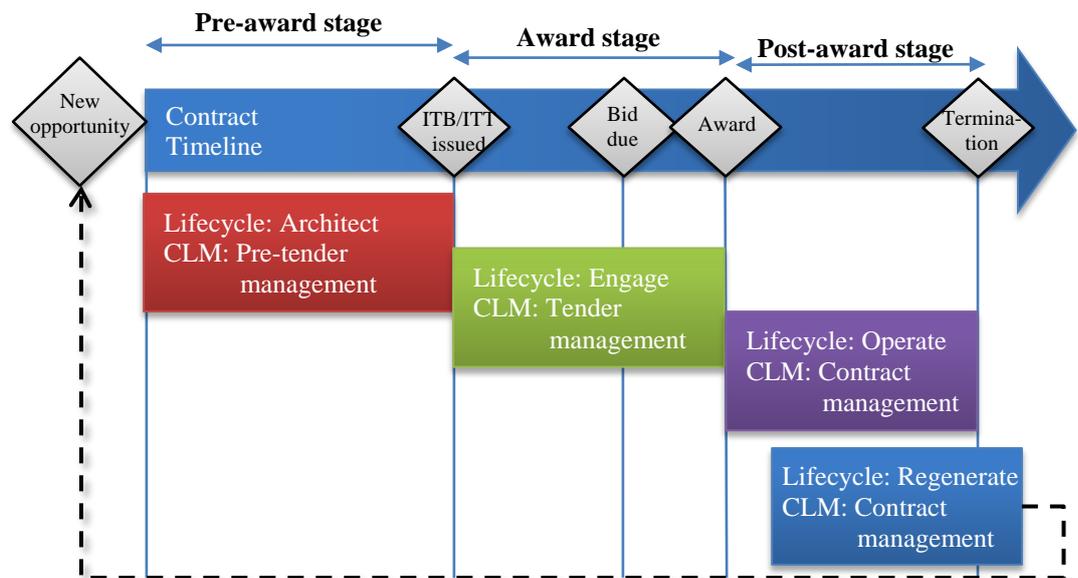


FIGURE 14. Contract timeline

As seen from figure 15, the first milestone is named 'new opportunity' to indicate when a sales opportunity is recognized. From this point, the contract passes through Architect phase of the lifecycle up to the next milestone when the ITB/ITT package is issued. The Engage phase then begins and goes across the bid due milepost and ends at the contract award. The third phase Operate continues

the lifecycle from this point up to the termination of the contract. Last but not least, the Regenerate phase takes place roughly at the last milestone when the contract lifecycle reaches the end.

3.3 Case CLM framework

Standardization is the main feature when it comes to the sales CLM processes of the Case Company. The development of a systematic approach to selling and managing contract offers the company a host of design and improvement tools to help accomplish key goals. This section step by step introduces the CLM process development and the current framework for CLM at the Case Company.

3.3.1 The development of the process

CLM has long been included in the sales processes of the Case Company. One of the strengths of the company is its vision of a continuously evolving sales culture that does not restrict advancement while constantly allows room for improvements. Under the current circumstances of changing business environment, the company made the decision to remodel its commercial management processes which also include the process for CLM.

The development commenced in 20XX and up to the present is as a whole completed. Figure 16 summarizes the X year development program for a competitive global CLM process from 20XX to 20XX.



FIGURE 15. CLM framework development

In 20XX, based on the previous practices and experiences in contracting, the commercial team initiated the development of the framework with the analysis of root cause for winning and losing opportunities. From that, visions and objectives

for the new model were established. The outcomes of this stage include the foundational process components (checklists, templates, workflows) and the library of standard tender content.

The second part of development process is divided into two phases. The first phase focused on the validation and assessment of the framework to enhance it and prepare for implementation. The results include additional process components, additional standard content and quality assessment process review. Also, the strategic support prioritization and project were put forward.

In the second phase, the framework was put into practice with an aim to strengthening and adapting the developed processes for CLM by geography. This stage is highlighted with the establishment of the process performance benchmark, review of roles and responsibility as well as the refinement of policy requirements.

The adoption and adaptation of the framework continued to be carried out in 20XX with further development for performance measurement. The need for efficient process management has brought about the integration of CLM with other existing sales processes such as eCRM. The outcomes of this development include the revised policies for CLM, the creation of standard commercial clause library and the performance assessment criteria.

In brief, the ultimate goal of this development is an overall framework for CLM that serves as a standard guideline throughout the organization all over the world. The standard process for CLM at the Case Company will be elaborated in the following part.

3.3.2 The Case Company's framework for CLM

The Case Company's current framework for CLM, as a part of the enterprise-wide commercial management, is a structured approach designed to position the organization as the vendor of choice within the sales opportunities, while simultaneously optimizing the profitability.

The framework is divided into three distinct but interdependent phases for pre-tender management, tender management and contract management. As seen in figure 15 these CLM phases are designed in relation to the lifecycle of the four phase contract lifecycle. Accordingly, the activities within Architect phase are under pre-tender management, Engage phase is undertaken by the tender management and the last two phases, Operate and Regenerate, are included in the contract management. The overall framework components are outlined in figure 16.

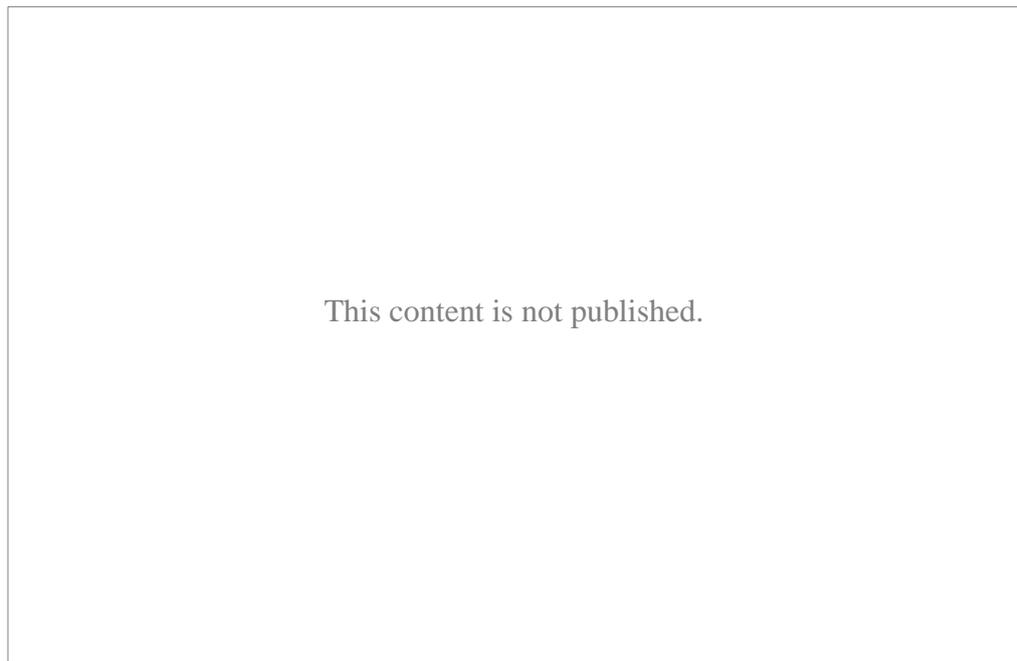


FIGURE 16. CLM framework

The framework cycle depicted defines the main phases of the CLM and encompasses the principle that CLM is a continuous and a seamless series of activities. Each one of these phase has its own set of steps to effectively manage customer contracts and to achieve the ultimate goal of profit maximization.

4 IMPLEMENTATION OF CLM AT THE CASE COMPANY

Contractual agreements account for XX% of the revenue generated at the Case Company. As the result, the company has placed considerable emphasis on the CLM as a tool for optimizing revenue recognition and profitability. This chapter is set out to examine the CLM implementation at the company with respects to three fundamental components of a CLM system. Firstly, a chronological presentation of the management throughout the whole contract lifecycle is provided. CLM roles and responsibilities are then outlined on each process steps, followed by the information of CLM technology application to date at the Case Company. Of critical concern to the Case Company at the moment is to improve the effective management of contract in terms of visibility into contract repository which is at the moment poses to be a great obstacle in the CLM. Further discussion on the challenges in implementation of CLM and existing solutions is placed at the end of this chapter.

4.1 Process implementation

The process for CLM at the Case Company follows the framework as illustrated in the previous section. Each step within each phase is broken down into smaller processes to embrace a vast number of activities crucial to the management of contract lifecycle in upstream O&G.

4.1.1 Pre-tender management

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4.1.2 Tender management

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4.1.3 Contract management

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4.2 Organizational structure of CLM

At the Case Company, a well-disciplined organization around CLM was established with clearly defined roles and responsibilities to facilitate the implementation of CLM. In addition, attention is given to communication links between different actors involved in CLM with the purpose to utilize various communication channels as a source of internal control across the organization.

CLM responsibilities

With regards to CLM roles and responsibilities, appropriate personnel and departments are assigned to fulfill one or several steps or processes within the three phases and are called ‘process owners’. A summary of roles and responsibilities for CLM at the Case Company is given in table 1.

TABLE 1. CLM process owner

Contract lifecycle	CLM phases	Key activities	Process owner/ Responsibility	Overall ownership
Architect	Pre-tender management	Identify and prioritize opportunity	<ul style="list-style-type: none"> - Account manager - Sales and contract - Operations 	Contract manager
		Develop and execute winning options		
		Prepare for ITB receipt and tender management		
Engage	Tender management	Receive ITB/ITT	<ul style="list-style-type: none"> - Account manager - Sales, contract and tender - Operations - Legal - Finance - Supply chain 	Contract manager
		Refine and execute winning options		
		Review ITB/ITT package		
		Develop and submit tender		
		Manage contract award process		
Operate	Contract management	Execute contract initiation	<ul style="list-style-type: none"> - Account manager - Sales and contract - Operations 	Contract manager
		Optimize contract performance		

		Manage contract administration		
		Monitor contract revision process		
Regenerate	Contract management	Execute contract closeout	<ul style="list-style-type: none"> - Account manager - Sales and contract - Operations 	Contract manager

It can be seen from table 1 that different activities throughout the contract lifecycle are undertaken by multiple functional groups from sales to operations, legal, finance and supply chain. Nevertheless, the CLM responsibility, not just any duty for a particular contract, lies in the sales and contract department which has a strategic role in CLM and providing appropriate oversight of contract performance. The overall ownership of CLM falls on the contract manager whose prime role is to act as a catalyst to maintain continuity of management throughout the whole contract lifecycle from its inception to completion. Within the sales and contract department, two supporting groups are dedicated for contract and tender management respectively. The organizational structure around CLM is represented in figure 17.

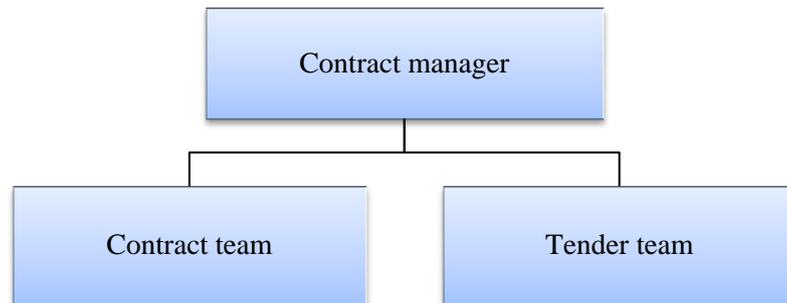


FIGURE 17. Sales and contract department

Aside from the contract oriented department, specific operational departments whose products or services are being sold also share the responsibility of overseeing the entire CLM processes from pre-tender to tender and contract management to ensure the highest level of compliance and minimize unwanted risks.

Communication links

Communication, in essence, is a means to transfer and exchange of information. With regard to CLM where information flow is crucial to gain process visibility, the ability to communicate relevant contractual details effectively is thus of critical importance. The contract organization structure in figure 21 and list of process owner in table 1 not only defines roles and responsibilities but also sets out the communication links among different actors involved in CLM.

The communication is established in both oral and written form. Oral communication is essential for conveying informal discussions, for example through internal meetings for start-up processes of pre-tender, tender or contract management. Written communication is particularly important for recording, tracking and retrieving key information and thus ultimately provides a mode of control for CLM.

4.3 Supporting technology for CLM

In terms of technology in CLM, its sphere of influence at the Case Company is observed in four aspects: contract template, basic functionality (reporting, follow ups, electronic storage, retrieval of contracts), CLM specific functionality (workflow, electronic approval, collaboration) and the integration with other systems such as customer relationship management (CRM).

Within the development of the global framework for CLM, libraries for standard tender content and contractual T&Cs along with templates for various processes were constructed. These libraries and templates provide solid grounds for CLM implementation and are mandatory throughout the company. An example template of a process is given in Appendix 6.

Concerning the basic IT application in supporting CLM, to date no technology advancement but common computer programs and database system are applied at the Case Company. For reporting and follow ups, simple spreadsheets are used to manage the portfolio of original contracts and follow-up documents such as contract amendments and addendums. For the electronic contract storage, at the moment, the Case Company employs a home-grown system of network drive not

only for CLM but also for various other functions. The network drive is basically a storage on a local access network (LAN) that is shared within a business unit (Appendix 7). Information kept on the network drive is accessible through the work stations registered to the network. Using this network drive, tenders, contracts and related documents are stored in a multitude of folders managed by the sales and contract department.

With regard to CLM specific functionality at the Case Company, the most prominent feature is the organization-wide workflow created for every process, sub-process and process step of CLM. Appendix 8 provides a workflow exemplar used at the Case Company. For approval of key activities in CLM, the system of electronic approval is not applicable at the Case Company, instead signature approval is required. Also, at the moment, no particular software or system is being used to facilitate the collaboration among different department or between the company and customers. Emails and verbal communication are used for exchange information pertaining to CLM.

In the present, the Case Company has no concrete technology system for CLM. Most of the programs and tools being used are often on-demand and thus the level of CLM integration into other enterprise management system such as CRM is hard to observe.

In brief, the technological applications at the Case Company show a limited and inconsistent level of CLM automation. Partial process is implemented with the support from IT solutions such as rudimentary software (i.e. Microsoft offices) and workflow.

4.4 Challenges in CLM implementation

CLM at the Case Company is as a whole well-developed with clearly defined framework and structure that meet essential requirements of the contracting practices in the upstream O&G. However, the implementation of such a globally standardized process is cumbersome. In order to achieve highest efficiency, further adaptation and adjustments are essential.

On one hand, issues pertaining to process fragmentation or disconnection are rarely discerned owing to the clear-cut strategy and policy around CLM at the Case Company. On the other hand, the Case Company has to some extent limitation and weakness when it comes to technological aspect of CLM. Challenges are for the most part built up on the contract repository and technological capabilities driven by various factors.

Visibility into contracts and search capability

Firstly, visibility into contract repository is of great importance when it comes to managing compliance and commitments as effective management of contract relies heavily on contract data and access to contractual documents. Due to the complex contract settings in upstream O&G with diverse storage and inconsistent or incomplete contractual metadata, visibility into contracts at the Case Company has been the most radical issue.

In usual course, tenders and contracts after being completed are stored both as original copies with signatures and electronic copies. These stored documents are often neglected as effort and resources are put into securing the next deal, next contract. This leaves the storage of contracts and tenders at the Case Company in a poor state with the lack of efficient search capability and effective documentation of contract records. Taken the sheer volume of contractual agreements of the Case Company into consideration, extracting correct contract information when needed is in adversity.

The default approach to contract repository at the Case Company includes filing cabinet storage, spreadsheet system and manual search and extraction process. The use of filing cabinet is a traditional way to store physical documents throughout the history. However, this has become highly inefficient in today business that a proper electronic storage should be implemented to enable better visibility into contract and retrieval capability at any time. Still, the management of physical contract storage is important at the Case Company due to the original signatures that bind the parties to the contract. At the moment, these documents are kept in a storage room without any classification and concrete system for indexing. This poses serious problem, for example, in the event the hard copy of

that contract is asked for while its location is unknown due to lack of control over the physical storage.

Coming to the basic spreadsheet as a tool for documenting, reporting and tracking of tenders and contracts, apart from insignificant savings, it is a major concern for the Case Company over the time involved, the possible delays and the issue of the process being repeatable. Indeed, intensive labor work to update new contract information, to record contract related documents (i.e. amendments, addendums, call-offs) and put them in the right place with the original contracts proves to be cumbersome, inefficient and often inaccurate. Problems frequently arise when a certain document which is asked for, for instance in auditing, is not recorded or missing.

Furthermore, when it comes to the search capability, search criteria for tenders and contracts are unclear and confusing. Most of the contracts are resulted from tenders but their indexes are dissimilar and hardly reflect the relation between a tender and a contract. Tenders are marked with codes generated from the Case Company's worldwide quote book system while contracts adopt the codes generated by the customer. Consequently, in order to retrieve a specific contract, at least information concerning customer, products or services sold and contract period must be available. This issue to some degree is not serious in the case of small volume of contract. However, in reality, with the increasing amount of contractual agreements the company enters into, poor visibility into contract repository, physically or electronically would lead to the incapability to retrieve necessary data and information contained in contract documents in timely manner. This obstructs the view on the complete array of contractual agreements the company current undertakes and eventually leads to low level of analysis of contractual T&Cs upon request.

Technological capabilities

The challenges built not only to the contracts to be located but also on limited CLM technological competence of the Case Company. The most evident issue is the incompetence of the system to provide search capability for electronic tender and contract storage.

According to the interview conducted with personnel from sales and contract department, to a certain extent the resistance to technology solutions such as ECM solutions was observed when the question regarding new technology was raised. The responsible personnel for CLM pointed out that they were satisfied with the current network drive system and it would be unnecessary to employ a more complicated system. Unfortunately, insufficient time and limited access to the Case Company information have precluded the researcher's pursuit for deeper understanding of the issue.

5 ASSESSMENT OF CASE CONTRACT LIFECYCLE MANAGEMENT AND METHODS FOR IMPROVEMENT

Using the empirical data in two preceding chapters, this section is set out to assess the maturity level of CLM implementation at the Case Company with respects to process, people and system support. Based on the assessment, areas for improvement in CLM are then revealed and practical solutions to the Case Company are proposed at the end of this chapter.

5.1 Contract management maturity assessment

The assessment for the CLM at the Case Company is constructed based on the CMMM laid out in the theoretical background. The five levels of maturity of the CMMM are used as indicators for the extent to which the Case Company implements the CLM. Accordingly, “Ad Hoc”, “Basic”, “Structure”, “Integrated” and “Optimized” will present the maturity level from the lowest to the highest.

Three fundamental elements of CLM system will be analyzed for each phase of the CLM. In terms of process for CLM, the scope of the process, efficiency and effectiveness, company’s policy on CLM, level of standardization and visibility are taken into account. In terms of people, the organizational structure around CLM will be assessed based on the criteria of decision-making structure, collaboration among multiple functional groups and level of control over the whole process. Lastly, in terms of system support, the main subject under examination is the influence of currently employed technology in CLM automation and integration at the Case Company.

According to the specified criteria and areas, the measurement of CLM maturity at the Case Company is given in table 2.

TABLE 2. Maturity assessment of case CLM implementation

	Contract management process areas		
Key category for assessment	Pre-tender management	Tender management	Contract management
Process	Integrate	Integrate	Integrate
People	Integrate	Integrate	Integrate
System support	X	Basic- Structure	Structure

Integrate maturity level of CLM process

The entire process of CLM implemented at the Case Company was developed in a systematic manner with clearly defined phases and policies that adhere to importance of CLM in the upstream O&G. The scopes of pre-tender, tender and contract management phases in the process are determined in relation to the pre-award, award and post award of contract. Going into each phase, it can be seen that key activities are well organized to create continuum of process which the previous step is the foundation for the next one. Therefore, the process can be considered to be of substantial efficiency and effectiveness.

Regarding the industry-wide standardization, the process in general is very typical for the management of customer contract in upstream O&G or possibly for other industries characterized by an extensive contract lifecycle and heavy regulatory oversight such as the construction industry. In terms of enterprise-wide standardization, the CLM process under examination is implemented at the Case Company and its affiliates worldwide. It is thus can be deduced that the process is of high standardization.

On the contrary to the well-developed process design, the visibility to some parts of the process is limited. The limitation mostly resides in the contract storage as discussed in the challenges to the CLM implementation at the Case Company.

In this sense, although having the drawback in the visibility into contract location, the clear cut and standardized process for CLM at the Case Company has reached the “integrate” maturity level according the CMMM.

Integrate maturity level of CLM organization

In addition to the process, the organizational structure around CLM at the Case Company proves to be at the maturity level of “integrate”. Firstly, CLM responsibilities are not dispersed across the company but a strategically oriented department is dedicated for managing and monitoring activities occurring throughout the lifecycle of contracts. This department also serves as a coordinator between multiple functional groups for the issues related to CLM.

Additionally, roles and responsibilities for CLM are explicitly defined and delegated to correct personnel in different departments involved in the process. There is a clear chain of command for decision-making in the case CLM. The central managerial position lies with the contract manager who exerts full authority and maintains oversight of CLM. Senior management also involves in the decision making of key events such as the decision-to-tender, tender submission and contract approvals.

Nonetheless, there are still some small issues that depress the maturity level of the case CLM in terms of people. These involve problems with the discontented workload that is largely a sequential result of the inadequate automation. Thereby, excessive manual work is often observed at the Case Company.

System support

In terms of technology, limited observation for the practices in pre-tender management has restricted the analysis of the supporting technology for CLM as a whole. Overall, the observation finds that there is no CLM specific technology solution implemented at the Case Company. Existing tools such as spreadsheet and common system of network drive are used to facilitate the CLM. The Case Company hence demonstrates to some extent limitation and weakness when it comes to basic CLM technological application.

Still, various templates and workflows have been developed for different activities of CLM process. These templates and workflows serve as effective assisting tools for CLM company wide. Given these circumstances, the maturity of system

support for CLM at the Case Company is in between “basic” and “structure” with lots of room for improvement to advance to higher level of maturity.

5.2 Opportunity and methods for improvement

CLM at the Case Company at the moment is well-established with intense concentration on the process and organization around CLM. Nevertheless, the maturity assessment shows that none of the three elements of CLM system at the Case Company has reached the optimal level. Areas for improvement have been identified with regards to the visibility into contract storage and more cutting-edge technological solutions to facilitate the CLM automation. Some feasible solutions proposed for improvements are presented in table 3. These solutions are not limited to customer contracts but also pertaining to managing company’s purchasing and vendor contracts as well.

To begin with, CLM is not just about managing documents, but management of tender and contract related items should not be neglected in order to have better insights into these focal elements of the process. In this sense, the Case Company needs to adopt an effective and practical method for managing document storage, both physically and electronically. The essential first step is to create a central repository of information to consolidate and handle the increasing volume of tenders and contracts. This will provide a clear view of the overall contract landscape and in turn facilitate more efficient management in the long run.

In order to better organize the archive of contracts and tenders, an index system which associates or tags these documents which easily recognized search terms or metadata is a practical solution for the current disorganized situation at the Case Company. Furthermore, with physical storage, a system or procedure to control the movement of every document is of considerable importance to secure the accessibility and prevent the restricted or confidential information from being exposed to unauthorized individuals. This can be achieved by either developing a computer-based system or a simple check list of all documents being stored. However, the systems for indexing and accessibility are yet the most beneficial and promising solutions since coding for indexation and sorting information is a perennially tedious task that most are reluctant to perform.

TABLE 3. Proposed solutions for improvements

Areas for improvement	Proposed solution	Benefit	Significance
Document management	- Consolidation of all tenders and contracts in one single repository	- Overarching view of tenders and contracts - Better control of all documents	- High - Long-term
	- Indexing system	- Systematically organized document archive with search capability	- Medium - Short-term
	- System for check in/check out and accessibility	- Increased control over document movement - Increase security with limit accessibility	- Medium - Short-term
	- Development of own system for virtual storage - Purchase of a document management system/software from third party vendor	- Enabled search capability - Reduced manual work for organizing documents	- High - Long-term
Technology	- ECM solutions For example, an SAP-based CLM solution	- Increased CLM automation and reduced manual work - Better visibility into contracts	- High - Long-term

In any case, organizing documents and information of tenders and contracts are critical and technology can provide a suitable solution for the issue. The Case Company can develop its own system for virtual storage and document management or purchase a software, capable to integrate into the company system, from a third party vendor. Such system can partially enable the CLM automation and reduce the need for manual coding or tagging documents and input entry of information. One of the benefits for building own system is that the company has complete control to tailor the system according to the needs. However, the existing IT infrastructure and capability of the company are to be taken into account since the development of a new system is in fact a difficult and often time-consuming undertaking.

CLM automation can by far be achieved the most efficiently through the adaptation of an ECM solution. Such software support for CLM include automated document creation, detailed workflow facilitating automation of the key activities throughout contract lifecycle and database of a centralized document repository for storing and capturing information. In addition, the possibility to integrate ECM solution to other process system such as financing and auditing is a great attraction for the Case Company to substantially improve its CLM maturity.

In short, the aforementioned solutions are proposed to tackle the main challenges in CLM implementation at the Case Company. Notwithstanding the author's perceived practicality of these solutions, the Case Company needs to assess the extent to which these solutions are appropriate to carry out under present circumstances.

6 CONCLUSIONS AND RECOMMENDATIONS

The chapter provides the conclusion to the research by summarizing the answers to the sub-research-questions from the presented literatures and findings.

Thenceforth, the answer to the main research question is illuminated. The scope of this thesis is limited and therefore various issues are not addressed. Based on the limitations of the research, some areas worth conducting researches in the future are proposed in this section. Last but not least, a personal reflection on the reliability and validity of the study is present to measure the thesis' trustworthiness.

6.1 Summary of research findings

The primary research question addressed in this thesis is: "What is an effective CLM system for selling organizations in upstream oil and gas industry?". Five sub-questions were put forward to systematically examine the necessary areas including the components of a CLM system, CLM role in upstream O&G as well as the practices, hindrance to implementation and methods for improvement at the Case Company. Table 4 sums up the answers to the sub-questions in this research.

TABLE 4. Research questions and answers

Research questions	Findings
1. What are the fundamental elements of CLM?	Three elements are identified: process, people and system support.
2. What is the role of CLM in upstream O&G?	Risky nature and heavy regulatory scrutiny of the industry has put upstream O&G companies under pressures for CLM. From the sell-side perspective, CLM is an effective tool to manage risks, compliance and change.
3. How does the Case Company implement CLM?	In terms of process, the Case Company implements a framework consists of three phases: pre-tender, tender and contract management. In terms of people, sales and contract department is dedicated to administrate and monitor the CLM.

	In terms of technology, basic supporting solutions are applied.
4. What are the challenges the Case Company faces when implementing CLM?	The drawbacks are most evident in the contract visibility and technological capability for CLM automation.
5. What need to be done to improve CLM at the Case Company?	Five solutions were proposed. Most of which refers to the management of document repository and enhancement in CLM technological capability.

In essence, CLM system comprises of process, people and system support. Thereby, it can be deduced that a CLM system can become effective if each of its fundamental elements is likewise.

In terms of CLM process, the first area to assess is whether the scope of the process captures the key activities and key events in the contract lifecycle. CLM should be seen as a complete process, starting from the inception of contract to the completion, instead of an array of different processes. Secondly, the standardization of CLM company-wide is important to coordinate the various contract responsibilities that disperse across the company.

Another factor contributing to the process effectiveness is the visibility into contracts. The storage and tracking of contracts should not be overlooked as this directly affects the organization's ability to manage contract contents, commitments and obligations. Regarding the process automation, the more automated the process is, the less time-consuming and often inaccurate manual work is required. As the result, automation is considered an attribute of effective CLM process. As seen from the analysis in the empirical part, although the Case Company has a well-rounded CLM process, the visibility into contract repository as well as the level of automation are limited and do not live up to the company's potential. The lesson drawn from the Case Company shows that basic functionality such as contract storage should not be neglected or it can become a significant drawback to success.

In terms of people in CLM, best practices from literatures and as observation at the Case Company indicates that a dedicated contract group to oversee every activity in CLM is the catalyst for effective management of contracts. Also, in order to achieve efficiency, CLM roles and responsibilities must be clearly defined to avoid overlapping and repetition in the process.

With regard to system support, the degree of effectiveness is exhibited in the degree to which an organization's technological capability can facilitate CLM. The ideal scenario is to have a suitable CLM system that not only meets the needs and requirements of the organization but also can be integrated to other existing systems in order to create an all-inclusive complex of technologies facilitating automation.

In upstream O&G particularly, an effective system for CLM, in addition to having high competent elements of process, people and system support, needs to fulfill the objectives to manage risks, compliances and various requirements of the industry. The conclusion drawn from this thesis has therefore not yet addressed the issues of effectiveness in terms of risk management and commitment management which are crucial to companies in today's business.

6.2 Suggestion for further research

This thesis studies the CLM from the perspective of the seller whose CLM process consists of various steps that are taken in correspondence to the customer's activities. A research on CLM from the buy-side standpoint therefore would be of great benefit for organizations and people interested in CLM to deepen the understanding of the subject.

When measuring effectiveness of CLM, the thesis is limited to three components of the CLM system. In fact, a number of other factors can contribute to the effectiveness. Further studies regarding the excellent practices in CLM are needed to provide more applicable methods of improvement in the field.

6.3 Reliability and validity

The demonstration of reliability and validity is of critical importance in doing research. In qualitative research, criteria for measuring reliability and validity include credibility, transferability, dependability and confirmability. Credibility reflects the internal validity of a study and adheres to the question “how congruent are the findings with reality?”. Transferability concerns the degree to which the findings can be applied to other situations. Dependability evaluates whether the same research procedure would yield the same results. Confirmability is a measure of research objectivity or the extent to which the results can be confirmed by others. (Shenton 2004, 64; Klenke 2008, 38 according to Lincoln and Guba 1985.)

To address the credibility, this study employs two techniques. Firstly, different research methods were chosen and applied carefully to conduct thorough understanding of the research problem. Data resources display a collection of trustworthy studies on CLM. Secondly, “rigorous method” (Patton 2002, 553) of doing fieldwork, or the direct participation and observation of the researcher in other words, has produced high-quality data for the thesis. On the other hand, since CLM is a broad concept encompassing a large number of activities, the researcher’s understanding is moderate when it comes to some process steps that weren’t approachable, especially in the pre-tender and contract closeout.

In terms of transferability, the findings of CLM framework which has been validated in upstream O&G can also be used in other industries with similar characteristics or requirements such as the construction business. Nevertheless, the framework is limited to the management of contracts on the sell-side.

With respect to the issues of dependability, providing that the situation at the Case Company stays unchanged, similar research is expected to deliver similar results. In reality, as the CLM practices at the Case Company continue to evolve and improve, additional research with the same focus would yield different findings for the maturity assessment.

As for the last criterion of confirmability, the integrity of data collected to conduct the case study can be verified by the personnel of the Case Company. In brief, the

study can be considered to have met the requirements for reliability and validity to a certain extent.

7 SUMMARY

This thesis studies the fundamentals of the contract lifecycle management on the sell-side in the upstream oil and gas industry. The subject originated from the Case Company in which the researcher had the opportunity to directly participate in and observe the real practices of CLM. Accordingly, the introductory section provides the background to the research, research questions and objectives, research methods applied, along with the scope and limitations and an overall structure of the thesis. The main study is organized into the theoretical framework in chapter 2 and empirical findings in chapters 3, 4 and 5.

The main objective of the theoretical part is to provide basic understanding of CLM through literature reviews and some latest studies. To begin with, a definition of contracts in modern business was given. Subsequently, the concept of CLM along with the four phases a lifecycle of contract encompasses was elaborated. Rigorous study on the three components of a CLM system is then presented with the main focus placed on the process. Up to this point, the first research question is answered. Although CLM is not a new function, implementation of CLM is subject to various difficulties and challenges. These challenges together with the current state and future outlook for CLM are discussed under subheading 2.3. The rest of the theoretical chapter presents a tool for assessing and improving CLM practices.

In the empirical part, the case study of CLM in upstream O&G is developed based on the theoretical background. In order to answer to the second research question, relevant information of the industry, aiding the indication of the critical role of CLM in upstream O&G, was given at the beginning of chapter 3. Overall framework for CLM in the industry is demonstrated before the study ventures into the analysis of the practices at the Case Company.

To answer research question 3 and 4, the implementation of CLM at the Case Company is step by step explained with regard to process, organizational structure and supporting technology. After that, challenges arising in the implementation of CLM are presented.

Based on the analysis in chapter 4 and the assessment model laid out in the theoretical part, a maturity assessment of the Case Company's CLM is given in the subsequent chapter. Accordingly, areas for improvement are identified and some solutions were proposed to address the problems at the Case Company. The fifth research question is then fulfilled.

To conclude, the answer to the main research question is drawn in chapter 6 after reflecting the answers to the five sub-questions. And in realization of the limitation in the thesis, some suggestions for further researches are put forward.

REFERENCES

Published references

Aberdeen Group 2006a. Contract Management: The Quote-to-Cash Cycle.

Aberdeen Group.

Aberdeen Group 2006b. Contract management in the mid-market. Aberdeen

Group.

Aberdeen Group 2012. Drilling for Success in Contract Management: Addressing CLM in Upstream Oil & Gas. Aberdeen Group.

Babbie, E. 2010. The practice of social research. 12th Edition. USA: Cengage Learning Inc.

Bickman, L., Rog, D. 2009. Handbook of applied social research methods. Sage Publications Inc.

Brown, I. 2011. Global upstream spending hits new heights. 20th World Petroleum Congress 167-170.

Cullen, S. 2009. The Contract Scorecard: Successful Outsourcing by Design. Ashgate Publishing.

Elsy, R. 2007. Contract management guide. The Chartered Institute of Purchasing and Supply.

Gagnon, Y. 2010. The case study as research method. Canada: Presses de l'Université du Québec.

Garrett, G. 2007. World class contracting. 4th edition. USA: CCH.

IACCM 2003. Contract Management - An Opportunity Still Being Missed?

IACCM Contract Management Study. International Association for Contract and Commercial Management.

Klenke, K. 2008. Qualitative Research in the Study of Leadership. 1st edition. UK: Emerald Group Publishing Limited.

Kumar, R. 2011. Research methodology: a step-by-step guide for beginners. 3rd edition. Sage Publications Inc.

Lewis, H. 2012. Bids, tenders and proposals: winning business through best practice. 4th Edition. Kogan Page Limited

Lodato, M. 2006. Integrated Sales Process Management: A methodology for improving sales effectiveness in the 21st Century. USA: AuthorHouse.

Newell, M. 2005. Preparing For The Project Management Professional (PMP) Certification Exam. 3rd edition. USA: American Management Association.

Oracle 2011. How to Reduce Costs and Manage Risk in the Upstream Oil & Gas Industry with Enterprise Project Portfolio Management Solutions. Oracle Corporation.

Paris, C. 2010. Contract Management: Design Parameters and Challenges to Implementation. Scandanavian Studies in Law Volume 49: A Proactive Approach. Stockholm Institute for Scandanavian Law.

Patton, M. 2002. Qualitative research and evaluation methods. 3rd edition. USA: Sage Publications Inc.

PwC 2003. Contract Management: control value and minimize risks. Price Water House Coopers and Memba.

Sasson, A., Blomgren A. 2011. Knowledge Based Oil and Gas Industry. BI Norwegian Business School, Department of Strategy and Logistics.

Saxena, A. 2008. Enterprise Contract Management: A Practical Guide to Successfully implementing an ECM solution. Florida, USA: J Ross Publishing.

Shippey, K. 2009. A Short Course in International Contracts, 3rd Edition. USA: World Trade Press.

Smith, P. 2012. Preparing for Procurement in 2020: Negotiation, Contract and Supplier Information Overload Getting to Grips with Contract Management. Spend Matters.

Walliman, N. 2011. Your Research Project. Oxford Brookes University.

Electronic references

Ariba. 2012. The future of contracting: An infographic. Ariba Inc. [referenced 10 March 2013]. Available on <http://www.ariba.com/resources/library/the-future-of-contracting-an-infographic>

Concept Draw 2013. Network diagrams [referenced 15 March 2013]. Available on <http://www.conceptdraw.com/samples/network-diagram>

Cummins, T. 2009. Commitment Matters. Are complex contracts doomed to fail? [referenced 02 March 2013]. Available on <http://commitmentmatters.com/2009/11/12/are-complex-contracts-doomed-to-fail/>

Cummins, T. 2009. Commitment Matters. Poor Contract Management Costs Companies 9% — Bottom Line [referenced 02 March 2013]. Available on <http://commitmentmatters.com/2012/10/23/poor-contract-management-costs-companies-9-bottom-line/>

Cummins, T. 2012. Webminar: BS The future of Contract Management IACCM Microsoft Information Services Group. Ariba Inc. [referenced 10 March 2013]. Available on <http://www.slideshare.net/Ariba/the-future-of-contract-management#btnPrevious>

Jaakkola, K. 2004. A way to successful and strategic contract management. Efecte Corp [referenced 26 January 2013]. Available on <http://www.icoste.org/NORDNET2004%20Papers/Jaakkola.pdf>

Rendon, R. 2006. Measuring contract management process maturity: a tool for enhancing the value chain. 91nd Annual International Supply Management [referenced 20 January 2013]. Available on <https://www.ism.ws/files/Pubs/Proceedings/ACRendon.pdf>

Rendon, R. 2007. Best Practices in Contract Management. 92nd Annual International Supply Management Conference [referenced 20 January 2013]. Available on <https://www.ism.ws/files/Pubs/Proceedings/GGRendon.pdf>

SAP 2013. SAP Library: Customer Contracts [referenced 07 February 2013].

Available on

http://help.sap.com/saphelp_47x200/helpdata/en/dd/55fd53545a11d1a7020000e829fd11/content.htm

Shenton, K. 2004. Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information* 22/2004, 63-75 [referenced 10 March 2013].

Available on

http://www.angelfire.com/theforce/shu_cohort_viii/images/Trustworthypaper.pdf

World Petroleum Council Canada 2013. Industry info: Upstream, Midstream & Downstream [referenced 15 March 2013]. Available on

<http://wpccanada.com/yc/industry-info/about-the-industry/upstream-midstream-downstream.html>

Zant, C., Schlosberg, C. 2002. Contract Agreements and Methods of Management. *Pharmaceutical Technology North America* [referenced 07 February 2013]. Available on

<http://www.pharmtech.com/pharmtech/data/articlestandard//pharmtech/322002/27755/article.pdf>

Zazaian, M. 2006. Contract administration: A strategic business process [referenced 05 February 2013]. Available on

http://www.ncmahq.org/files/Articles/19C10_CM_May06_FEA6.pdf

Interviews

Contract and Procurement department. Case Company. Interviews conducted in the period between August and December 2012. Interviewees:

- Contract and Procurement manager
- Senior Contract Specialist
- Contract and Marketing Coordinator
- Tender and quotation analyst
- Contract assistant
- Marketing representative (HCC)
- Billing and accounting team

Unpublished references

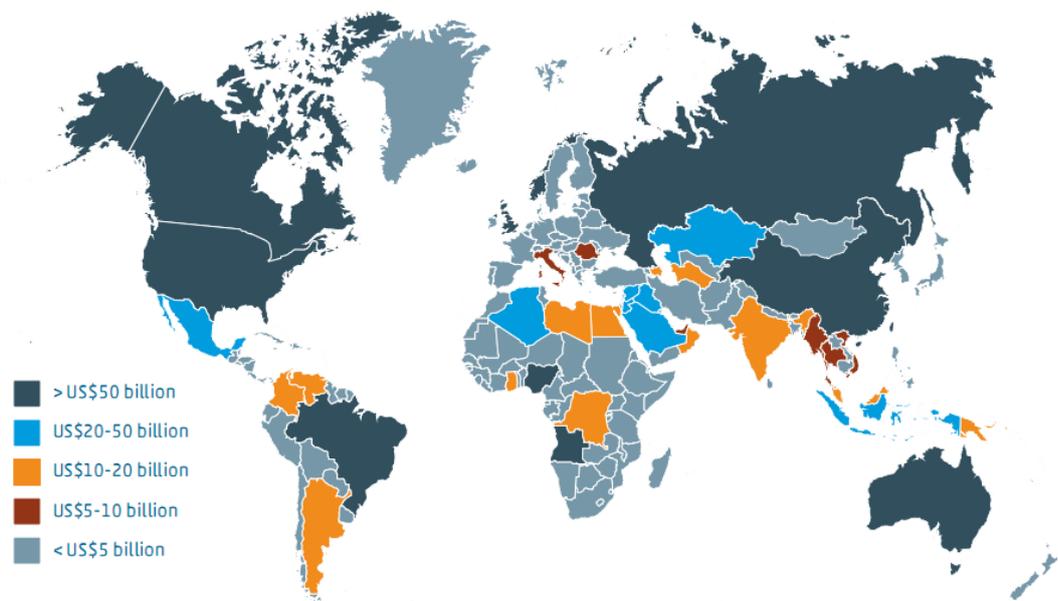
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APPENDICES

APPENDIX 1. List of main interview questions for Sales and Contract department at the Case Company

1. What is customer contract and what type of customer contract the company enters into?
2. Are there any unique features of contract lifecycle in upstream oil and gas industry?
3. How does the business model of the company affecting its contractual practices?
4. How important is the customer contract management to the company?
5. How was the CLM framework developed and implemented?
6. What are the current challenges in contract management?
7. Where does contract management responsibility lie?
8. What is the level of process automation for contract management?
9. What are the indicators to measure contract management performance?

APPENDIX 2. Cumulative upstream capital spending 2011-2014 (Brown 2011, 170)



APPENDIX 3. Contract roadmap

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APPENDIX 4. Example of tender content in upstream O&G

1. Cover Letter
2. Form of Tender
3. Executive Summary
4. Administrative information
5. Schedule of prices and rates
6. Equipment and personnel listing
7. Technical Information
8. Management, Organization and Personnel
9. Corporate Structure
10. QA and HSE
11. Execution Plan
12. Local Content
13. Subcontractor Information
14. Insurance Information
15. Bid Bonds and Parent Company Guarantees
16. Alternative proposals and exceptions

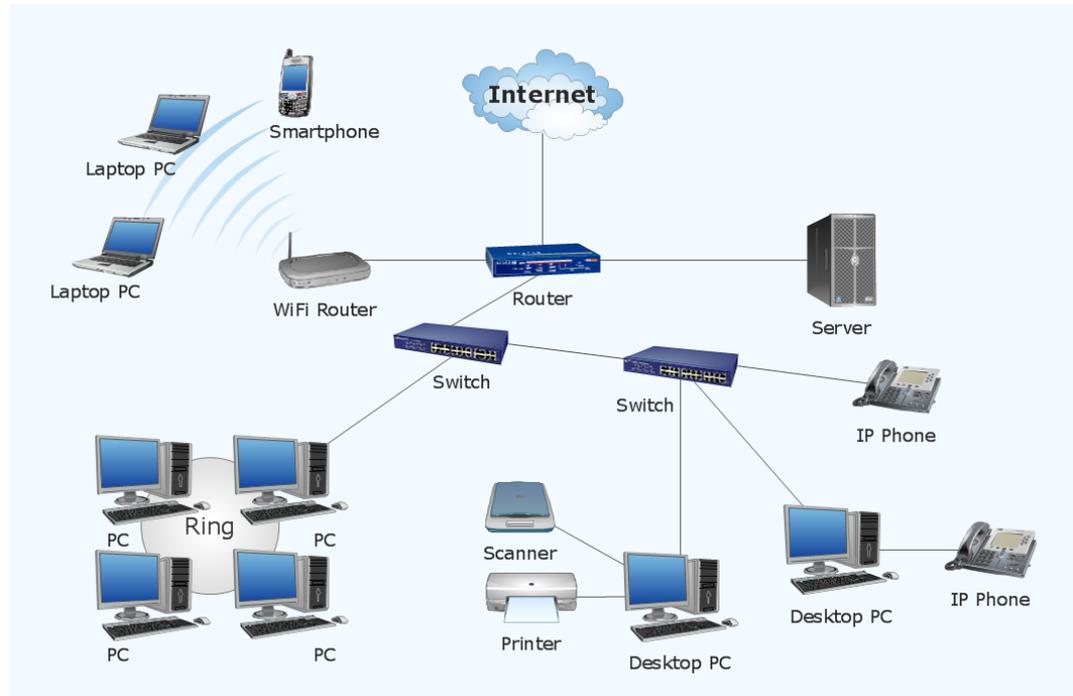
APPENDIX 5. Example of call-off order

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Appendix 6. Example of contract template

This content is not published.

APPENDIX 7. Model of network drive (Concept Draw 2013)



APPENDIX 8. Example workflow

