

ASIA E UNIVERSITY

A CASE STUDY OF PROCUREMENT AND CHANGE MANAGEMENT
IN THE OIL AND GAS INDUSTRY IN MALAYSIA

TIE TING HUAT

MASTER OF BUSINESS ADMINISTRATION
SCHOOL OF MANAGEMENT

2016

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ABSTRACT

The study suggests that supply chain integration (SCI) increases operational competencies. Over the past 34 years, highly integrated information exchange and strategic sourcing through SCI have been proven to be a major contribution to operational performance. The local Hook Up and Commissioning (HUC) service providers, however, have experienced at least a 15-year expansion since 2000 in Malaysia's oil and gas industry. Nonetheless, the SCI process within procurement and logistics operation is still considered incomplete.

The focus here is to share some process of procurement from the logistics point of view such as cargo declaration documents during HUC project. An in-depth qualitative case study including interview, general field observation, and review of various types of documentation are employed to explore the actual practice of preparing the cargo declaration documents. All the collected data are analysed through the triangulation method.

The findings of this study show that there is a high discrepancy of goods information in procurement and logistics documents due to inaccuracy of reporting by incompetent personnel. The main cause is the lack of sharing information from the point of procurement. The incomplete SCI thus reduces operation competencies and increases wastage. The uncontrollable operational wastage and current issues of oil-price crisis and other macro economy factors are causing the oil production cost to exceed the breakeven point.

This study therefore is significant because it contributes to providing a framework for procurement change-management to improve overall operational performance particularly for HUC growth in Malaysia's oil and gas industry, including all other operation activities and services such as offshore drilling, subsea, installation, and other types of oil and gas operation.

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I would like to thank my wife, Pauline Seow, who has been a great inspiration in every aspect of my life. My profound appreciation goes to my parents, Tie Kah Kuong, Wong Mee Sieng and my brother, Tie Ting Hock for their support financially. I am indebted to them.

DECLARATION

I hereby declare that this project paper is submitted to fulfil my MBA degree requirement which is my own work and that all contributions from any other persons or sources are properly and duly cited. I further declare that the material has not been submitted either in whole or in part, for any other degree at this or any other universities. In making this declarations, I understand and acknowledge any breach in this declaration constitutes academic misconduct, which may result in my expulsion from the programme and/or exclusion from the award of the degree.

Name: Tie Ting Huat

Signature of Candidate:



Date: 8 June 2016

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ABBREVIATIONS

1. COG – Consignment of Goods
2. DO – Delivery Order
3. GST – Goods and Services Tax
4. HUC – Hook Up and Commissioning
5. MR – Material Requisition
6. OCM – Organization Change Management
7. OD – Organization Development
8. OSV – Offshore Support Vessel
9. PMT – Project Management Team
10. PO – Purchase Order
11. PR – Purchase Requisition
12. RFQ – Request for Quotation
13. SCI – Supply Chain Integration
14. SCM – Supply Chain Management
15. SKP – SapuraKencana Petroleum
16. TQM – Total Quality Management
17. UPO – Un-Priced PO
18. VSS – Voluntary Separation Scheme

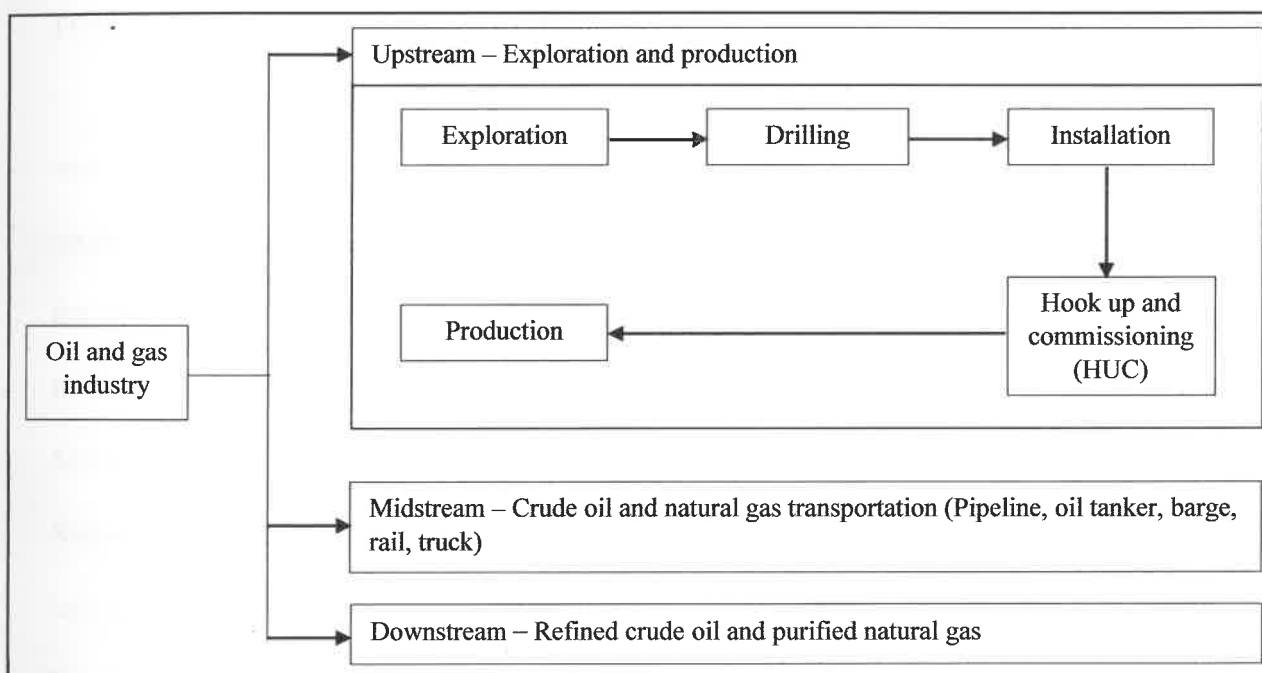
Chapter One

INTRODUCTION

1.1 Background of the Study

The oil and gas sector has been categorized under the enormous industry. Three major areas that constitute the industry, would be the upstream, midstream, and downstream business as illustrated in Figure 1.1 as below:

Figure 1.1: Three Main Businesses of the Oil and Gas Industry



Source: Original Work by Researcher

Naturally, there are two kind of sources, which are the one beneath the land and another undersea. However, in this study we will be focusing the oil and gas operations in the sea. The upstream business of the oil and gas industry consist of five main components which involve exploration, drilling, installation, hook up and commissioning (HUC), and production. The exploration is an effort in conducting search and discovery of the potential oil and gas sources.

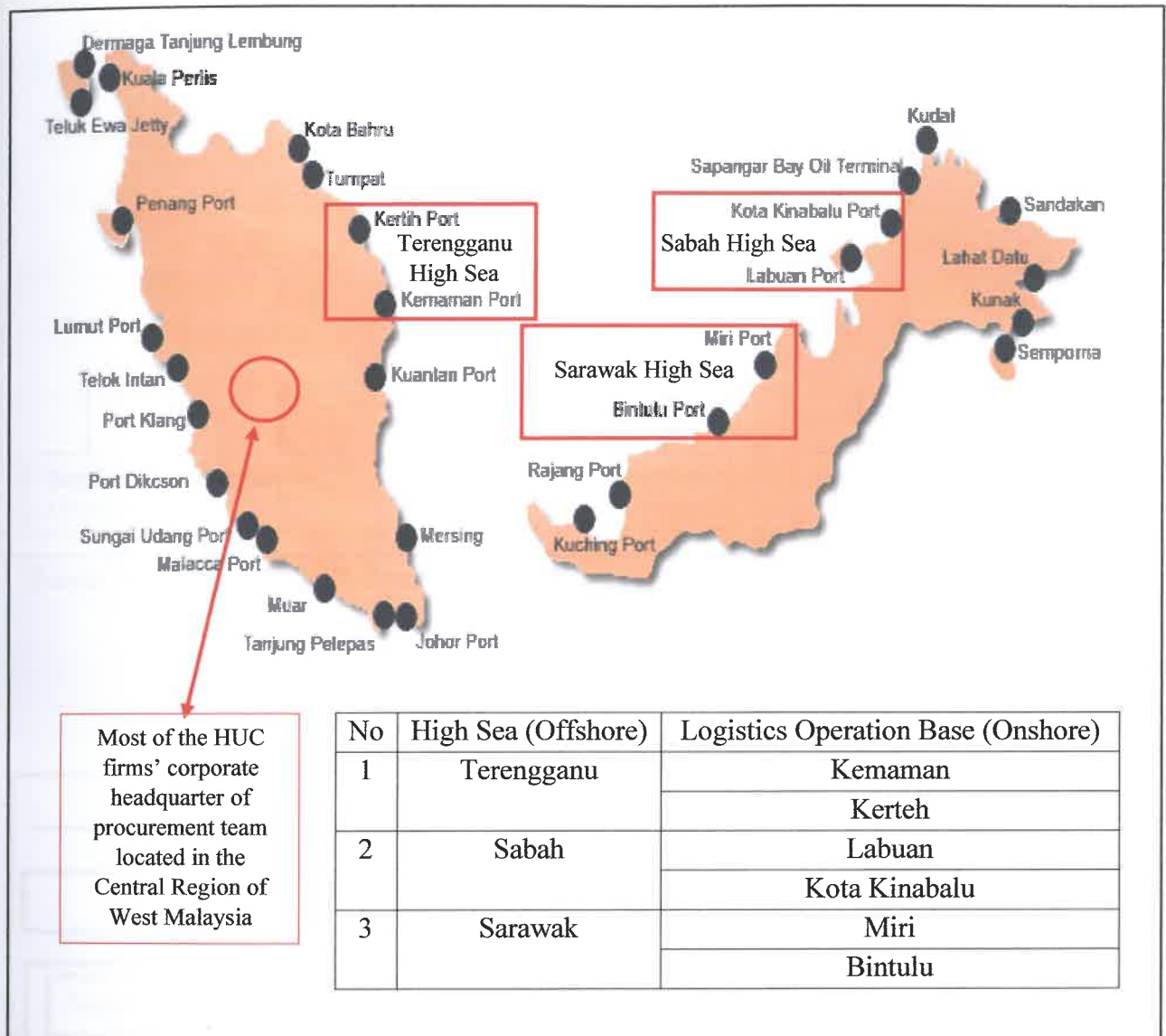
The drilling stage is the next stage after the exploration. The purpose of drilling is to construct the wellhead to the source of underwater crude oil or natural gas field. In offshore, the installation of fabricated platform will be performed in order to connect the extract channel with the constructed wellhead. Normally the massive structures will be fabricated onshore before transporting to the offshore for installation work.

Upon installation, the HUC relevant team will ensure minor construction works on the platform is completed before it is hand over to platform operator. Other HUC team will conduct some test to ensure facilities on the platform are in good function before handling over for production.

The extracted crude oil and gas will be transported from offshore to onshore for refining and purifying. This process is carry-out in the midstream business. Finally, these ready refined crude oil and purified natural gas will be distributed through marketing efforts. In a nutshell, the whole upstream sector of oil and gas industry is focusing on exploration and production of the natural resources. In Malaysia, most of the HUC firms were established in Peninsular Malaysia and the extracting and processes works are executed at the high sea of Terengganu, Sarawak and Sabah as illustrated in Figure 1.2. Most of Peninsular Malaysia HUC firms are headquarter in the Central Region of West Malaysia, like: Kuala Lumpur, Petaling Jaya, Seri Kembangan, and et cetera. All other business support departments such as procurement are operating from the Corporate office in the headquarter.

Where else, the project sites are consisting of onshore and offshore base. The establishment of onshore are for the purpose of logistics functions. Where the arrangement of all purchased required tools, materials and manpower to be transported offshore at the project site. Therefore, it is logical that selected nearest onshore coast to minimize lead time and ensure efficient support to offshore project site. The importance of close communication among procurement team, onshore and offshore team is one of the criteria to a wholesome integration.

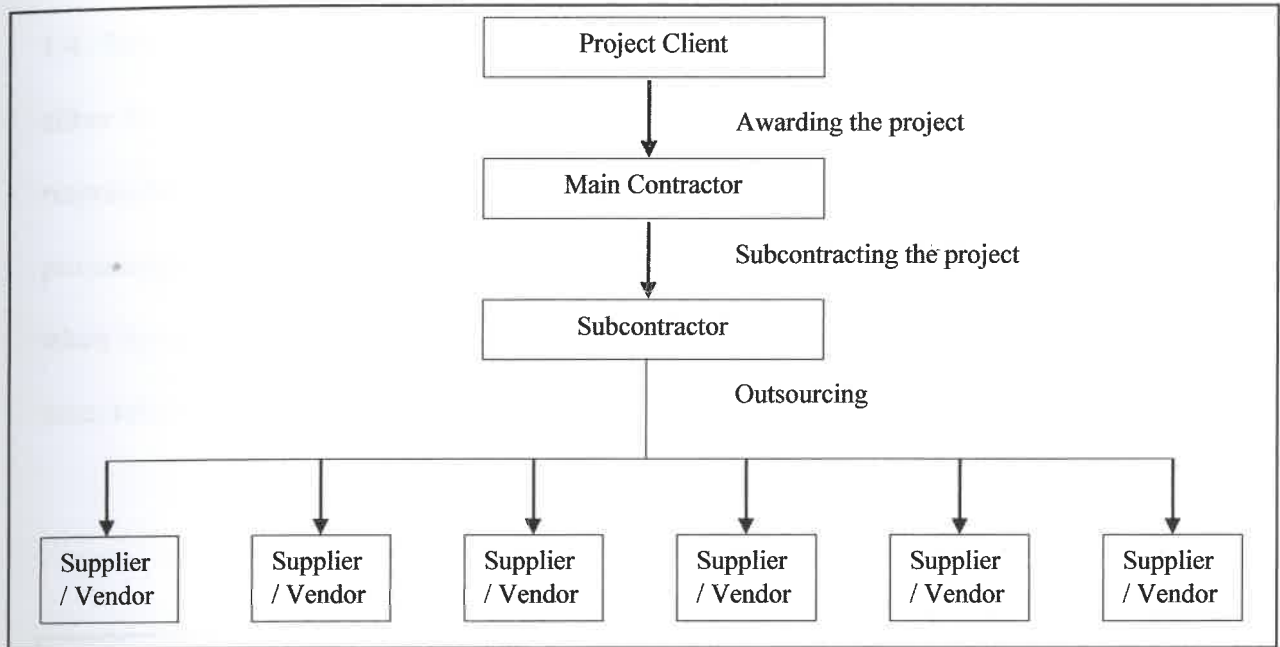
Figure 1.2: Location of HUC Firms' Corporate Headquarter of Procurement Team, Logistics Operation Base (Onshore) and Offshore in Malaysia



Source: Adapted from Website www.hasiria.com/about.html

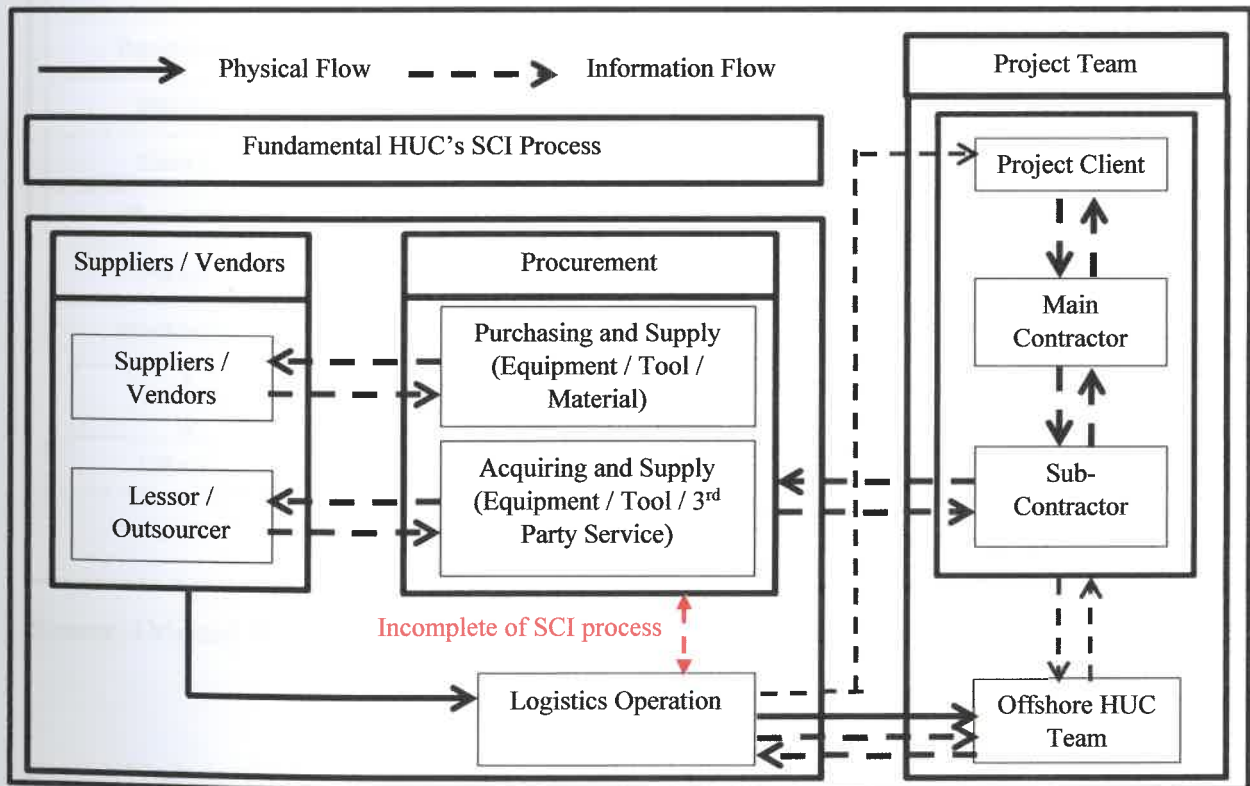
In the oil and gas industry, works are awarded by Client to main contractor. The project is then sub-contracted out to subject matter experts. The subcontractors will be assisted by many suppliers or vendors by outsourcing tasks according to specialization. This is as illustrated in Figure 1.3.

Figure 1.3: Hierarchy in Oil and Gas Project Work's Structure



Source: Original Work by Researcher

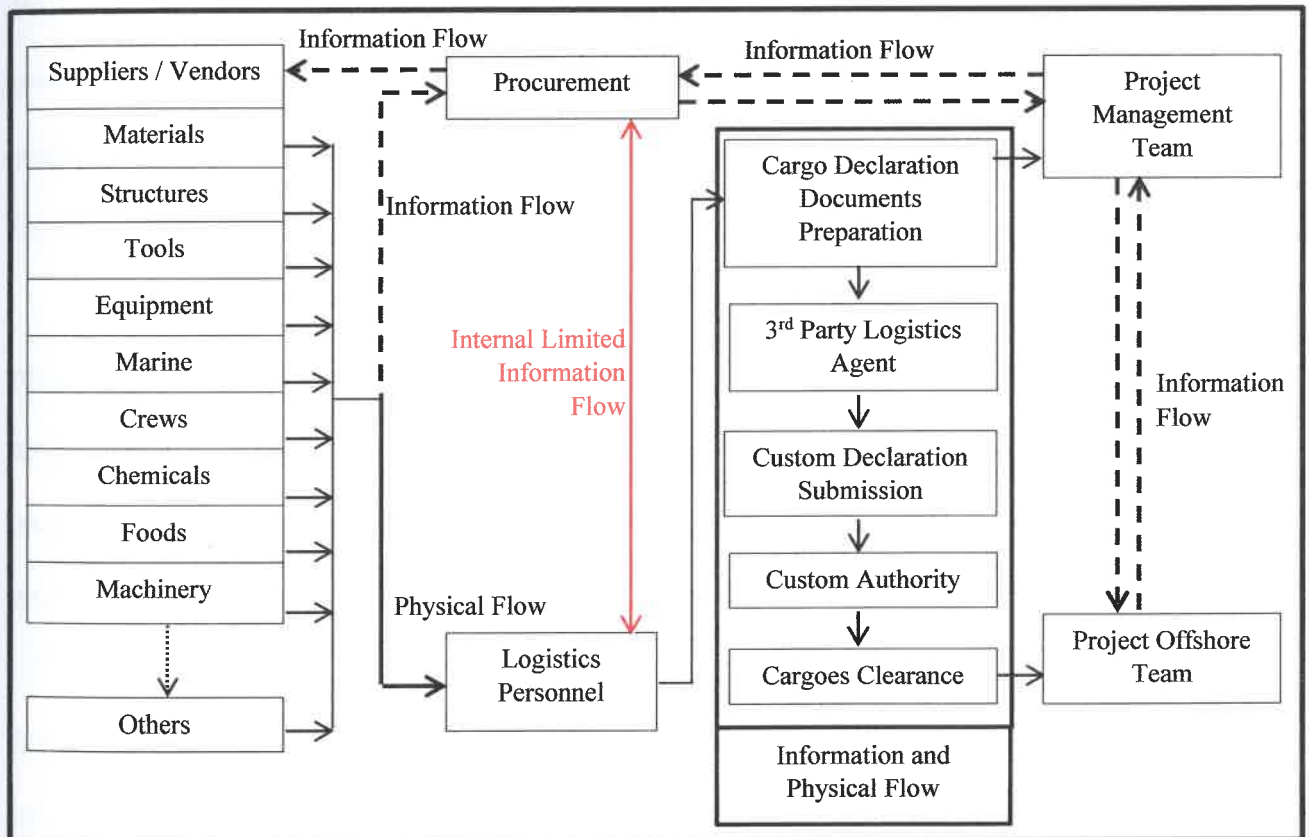
Figure 1.4: Fragmented Process of Supply Chain Integration (SCI) between Procurement and Logistics Operation in HUC Project Work



Source: Original Work by Researcher

Procured subcontractor who from part of the HUC project teams are shown in Figure 1.4. Subcontractors as part of the project team understand and obtain project requirements either from Client or the main contractor or both. Their procurement department will then be responsible of vendor selection and items acquirement. The information exchange between procurement and suppliers/vendors right up from requisition orders to invoicing must never be taken lightly. Procurement plays the primary role in information gathering, therefore it is at time, refer to as information gathering centre.

Figure 1.5: Detail of Information and Physical Flow between Logistics Operation and Project Offshore Team



Source: Original Work by Researcher

Logistic, on the other hand is responsible in facilitating to ship out items received from suppliers/vendors to offshore HUC team. Many a times, where insufficient/vague information

provided by procurement or logistics team that results in inaccurate cargo declaration document at custom authority. This is illustrated as per Figure 1.5. Hence, the presence of incomplete supply chain integration (SCI) process between procurement and logistics operation in HUC project work.

Table 1.1 shows the partial SCI process between procurement and logistics operation in HUC project work as reviewed through documentation flow in HUC project. Preparation of cargo declaration documents (Consignment of Goods, COG and Cargo Manifest), basic information of goods is required, such as price, specific description, quantity, source of origin, shipment detail and other related information. Refer to the Table 1.1, in the item number 7, Un-priced PO (UPO) is the document prepared by procurement to logistics operation. The goods prices were hidden and not able reviewed in UPO. In UPO, only basic description of goods was provided. Significantly, there is insufficient information sharing from procurement to logistics operation in cargo declaration preparation.

In Figure 1.5, which explains that before the goods are being arranged for shipment to project offshore team, it is a pre-requisite for the goods to be declared and submitted to custom authority for clearance. Before custom authority is able to approve of cargo clearance, they will check every detail in the submitted cargo declaration documents and also to determine the amount of duty and tax for subcontractor to make the payment.

In Table 1.1, no single type of document is able to provide the full information of goods for logistics operation in preparation of cargo declaration documents. This is because, some information is kept discreet such as, price of goods is only reveal among vendors, procurement, and project management team (PMT). Most of the time, logistics personnel use price information verbally communicated to them without any documented price value in declaration goods price. Without true reference of the goods prices from any source, it is no wonder the

cargo declaration is not accurate. The inaccurate declaration of goods which contribute to inaccurate payment of duty and tax. Hence, the possibility of higher expenses of duty and tax.

Table 1.1: Documentation Flow and Goods Flow in HUC Project Work

No	Document Type	Prepare by	Receive by	Type of Flow
1	Material Requisition (MR) / Purchase Requisition (PR)	Project Management Team (PMT)	Procurement	Information
2	Request for Quotation (RFQ)	Procurement	Suppliers / Vendors	Information
3	Quotation	Suppliers / Vendors	Procurement	Information
4	Purchase Order (PO)	Procurement	PMT	Information
5	Approved PO	PMT	Procurement	Information
6	Approved PO (Finalized)	Procurement	Suppliers / Vendors	Information
7	Un-Priced PO (UPO)	Procurement	Logistics Operation Base	Information
8	Goods with Delivery Order (DO)	Suppliers / Vendors	Logistics Operation Base	Physical
9	Consignment of Goods (COG) and Cargo Manifest	Logistics Operation Base	PMT / Third Party Logistics Agent	Information
10	Submission of COG and Cargo Manifest	Third Party Logistics Agent	Custom Authority	Information
11	Declared COG and Cargo Manifest	Custom Authority	Third Party Logistics Agent / Logistics Operation Base	Information
12	Declared COG and Cargo Manifest	Logistics Operation Base	Offshore HUC Team	Information
13	Goods	Logistics Operation Base	Offshore HUC Team	Physical
14	Acknowledged COG and Cargo Manifest	Offshore HUC Team	Logistics Operation Base / PMT / Procurement	Information

Source: Original Work by Researcher

The second issue of SCI disparity process also results in redundancy. In my opinion, the recorded accurate information from the procurement stage is key. Given the factual scenario, retarded information sharing causes time wastage and investment loss by the logistics department. The time spent in finding information which procurement department had already done is non-productive but cost-wastage due to repetition.

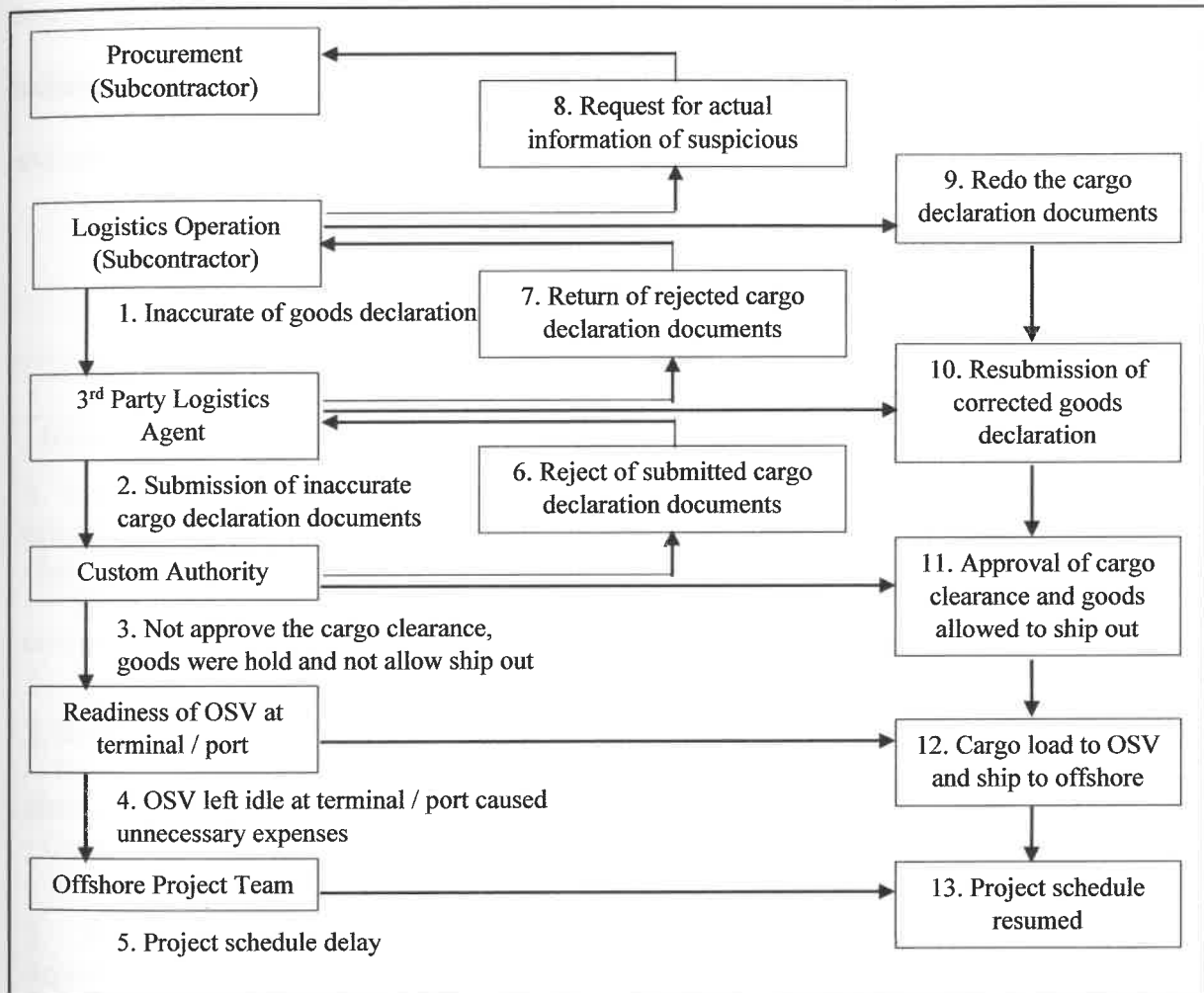
In addition, the repercussion of inadequate information causes tends to stop offshore-support vessel (OSV) activities, thus causing much delay in the HUC project schedule. This, in turn, causes issues related to customs clearance due to inaccurate goods declaration. Furthermore, the clients normally prefer proper verification of goods before shipment due to unclear item information. The latter tends to slow down the OSV activities in seaport / terminal, thus hindering the loading and unloading of cargos, and contributing to the delay in project schedule. Moreover, as reported by Lim (2016), one of the notoriously expenses in oil and gas development and production is due to suspended OSV; for example, one small OSV halted could cost around RM50,000 a month (this amount has yet to include financing cost) for the take-up space.

Another disparity of SCI process, causes an extension in supply chain operation and delay of construction progress. See illustration in Figure 1.6 a profitability reduction in supply chain due to operation wastage when process of re-declaration of goods after being rejected by custom authority of inaccurate cargo declaration documents. This re-take process is most concern by the third party logistic provider especially. In fact, all related parties involve will be effected.

Operation wastages will result in an increase in oil producing cost. Various internal factor of weak operational competencies in an organization plus external factor of economics have impact in lowering down the breakeven point of oil production as illustrated in Figure 1.7. In refer to recent 2015 oil prices crisis, implementation of Goods and Services Tax (GST)

in Malaysia, depreciation of Malaysia currency (Ringgit Malaysia) and other factors caused an economy downturn in Malaysia.

Figure 1.6: **Incomplete SCI Process in HUC Project and Operation Wastages in All Supply Chain**



Source: Original Work by Researcher

Prior to oil prices crisis in the world last year, prices per barrel exceed production cost which taken into account the cost wastages (Zainul, 2016). With today oil prices and depreciation of Ringgit Malaysia (Ringgit Falls Most in Three Weeks as Oil Prices Slump Overnight, 2015), the wastages of oil and gas operation seems making obvious high breakeven point in oil production cost. Petronas had seen taking steps to cope and sustaining its present

during this economy switch; one of its steps which include, staff retrenchment. A total of 51,000 staffs had been laid off since the VSS (voluntary separation scheme) exercises in 2015; a total of RM50 billion capital and operation expenses has been scrutinized and this cost cutting will be practise for the next four years (Petronas May Retrench Staff, Says Report, 2016). These cost-cutting strategies have seen been practise by other multi-national corporations within the industry such as Shell Malaysia, Murphy Oil, ExxonMobil Malaysia, SBM Malaysia, MMHE, and others (Tan, 2016).

Figure 1.7: **Internal and External Environmental Factors Affecting Malaysia's Oil and Gas Overall Performance**

Environmental changes affecting Malaysia's oil and gas industry	
Internal factor of organization capabilities	External factor of economics
1. Weak organization capabilities to produce effectiveness of SCI process along all supply chain: - Weak performance of operational competencies. 2. Resource wastages: - Operational wastages along all supply chain. - Overpaid of duty. 3. Weak supportive among internal department: - Redundancy work in internal department. - Inaccuracy of cargo declaration documents.	1. Oil prices crisis 2015, decreasing the breakeven point of oil production. 2. Depreciation of Ringgit Malaysia. 3. Economy downturn (High retrenchment and expending cut down from project client) 4. Increasing bargaining power of project clients due focusing on high cost saving project. 4. Implementation of Goods and Services Tax (GST). 5. Weaker and downgraded of oil and gas corporates' stock performance
Overall: Less competitive advantage in industry: - Production cost access with breakeven of production cost.	

Source: Original Work by Researcher

By the major cost-cutting strategies, had seen taking a toll on firms that provides HUC services. On top of that, the implemented Goods and Services Tax (GST) from year 2014 had

worsened the economy situation in Malaysia (Insiderasia, 2016). Those listed in KLSE board had appear weaken transaction of stock business and had seen on a bear run since the short-term recovery of crude oil prices amid speculation of a supply cut by major oil producers (Puspadevi, 2016).

According to Lim (2016), the world crude oil prices stay depressed between US\$30 and US\$40 per barrel for the medium to long term, which are below the oil producing cost; for short-term trading positions, shares of SapuraKencana Petroleum (SKP) have among the strongest correlation with crude oil prices, whereby SKP's stocks were down almost 40% in the past one year with the stock closed at RM1.80 as of February 16, 2016. According to Bousso and Wade (2016), during the tough period of continuous falling of oil prices, the executives at energy firms must face the tough decision to cut the spending in order to stay financially afloat. These continuous environmental factors will continue to affect HUCs' overall performance, hence cost control measure in assuring operational competencies within HUC firms' as much as possible by minimizing operational wastages.

The first local firm/service provider awarded with a HUC project in Malaysia was in year 2000 (The History of Perdana Petroleum Berhad, n.d.). Petronas awarded six local service providers with major 13-packages, 5 years' contract term commencing from year 2013 offshore HUC and maintenance with the total worth about RM10 billion (Petronas Awards Major Offshore Hook-Up, Commissioning and Maintenance Contract, 2013). There are many established HUC service providers in Malaysia besides the few giants mentioned above.

From 2000 onward there have been many local HUC operators, and within 13 years, the number of operators has increased that require open bidding to select the best bidder for project awarded by Petronas. Kamal and Irani (2014) found firms that are capable of collaboration and create seamless supply chain operation in the competitive business environment by fusing SCI into supply chain management (SCM) theories and practices. This

is take some time for Malaysia's HUC service providers before acquiring a wholesome SCI implementation.

Where else, procurement department within an organization plays the role of facilitating between finance and operation department to reduce or avoid unnecessary cost via controlled budget (Johnson and Flynn, 2015). The fact is that in ensuring operating cost working below the breakeven point of oil production cost, it is necessary to implement change. It is necessary for full SCI process implementation not just within the procurement process, but also within logistics processes.

According to Chima (2007), oil and gas companies are looking for alternative way associating to wastages, mostly involved logistics network and operational innovation. This does imply SCI implementation is definite a new measure necessary for change in the procurement and logistics culture, with the intention to increase operational competencies which bring forth the burden of this study.

However, this measure has yet to reach its full potential in oil & gas industry in Malaysia due to the current situation where very little realization and knowledge has been obtaining among the community. The toleration of imperfect logistics operation due to partial SCI process is occurring ever since day one. Many have been believing and practicing the since and no sign of change initiative. Therefore, this study was carried out, with the hope to expose the low coordination level of procurement that cause the overall imperfect HUC logistics operations.

1.2 Objectives of the Study

The objectives of this study are as follows:

1. To determine how the SCI process implementation is affect the procurement process within logistics processes.
2. To expose the low coordination level of procurement that cause the overall imperfect HUC logistics operations.
3. To provide possible solution related to improving accurate cargo declaration.
4. To suggest change requires for procurement management.

1.3 Research Questions

The research questions in this study are as follows:

1. How to successfully implement the SCI process to improve procurement process within the logistics processes?
2. Focusing on the root cause, in ensuring accurate detail declaration of cargo are key. What is the cause of inaccurate cargo declaration?
3. Why is it not possible for logistics personnel to provide accurate information in declaration documents?
4. Did the procurement team take necessary steps to correct and rectify problem?

1.4 Significance of the Study

This study suggests alternative avenue for better procurement management by improving information sharing through practising transparency within the oil & gas industry. The highest level of integrity information sharing among supply chain can be achieve through modelling approach of SCI process within the industry.

These also applies to other kind of upstream procurement and logistics operation like exploration, drilling, onshore fabrication, subsea services, transportation and installation. This change will give hope to oil and gas industry at current economy switch in our Country. In a nutshell, in order to stay relevant, option such as reducing overhead and eliminate wastage would be the prime force behind this study.

1.5 Limitation of the Study

The case study only covers the procurement process of various HUC onshore logistics operation within the Country. The quality of shared information from procurement to logistics operation, and the proper cargo declaration documents (cargo manifest/consignment of goods, COG) by logistics personnel based on information provided by procurement are the core of this study. The result will clearly advocate the implementation of SCI process within HUC firms' and the necessary change require in managing procurement.

The constrains in this study are costs and time. The big scale research on all HUC firms throughout Malaysia was unable due to high travelling expenses required. Only three logistics operation bases ware selected as observation and documentation, such as Kemaman, Bintulu and Labuan. Due to time constraint, only 85 persons were involved in interview. However, this study does have potential in big scale of research in future.