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Abbreviations

CCS	China Continent Shelf
CDE	COSL Drilling Europe As
COSL	China Oilfield Services Limited
CNPC	China National Petroleum Corporation
CNOOC	China National Offshore Oil Corporation
Fdi	Foreign Direct Investment
IRF	International Regulators Form
M&A	Merge and Acquisition
NCS	Norwegian Continent Shelf

Chapter 1. Introduction

1.1. Industrial background

How long will the petroleum on Earth last is often the question being asked by people with sense of crisis when they look out of windows and find petro-consumed Auto mobiles running almost everywhere on the planet , the answer is mainly depending on how much is left and how fast we consumed, or in a more quantitative explanation, the ratio of how much oil we discovered compared with how much we consumed in the same time interval, history data shows that at the start point of petroleum industry in 1940, five times as much oil was discovered as we consumed, in 1980, the number is almost decreased to 1, further after stepping into the 21st century, the world consumption of petroleum was three times the amount that was discovered(Thresher, 1996), many believe that the petroleum will end soon after entering the 22nd century or even earlier than 2070(Botkin and Perez, 2010).

What cause this in-sight petroleum shortage more complicated is that the petroleum reservations are not evenly separated on Earth, as shown in Figure 1, instead for regions such as Middle East whereas energy consumption is relatively low has 63% of the world's total reservation, China and the other Asia Pacific countries whereas petroleum is critical for overall developing only have 2.5% of the world's total reservation at year 2011(BP.P.L.C, 2012).

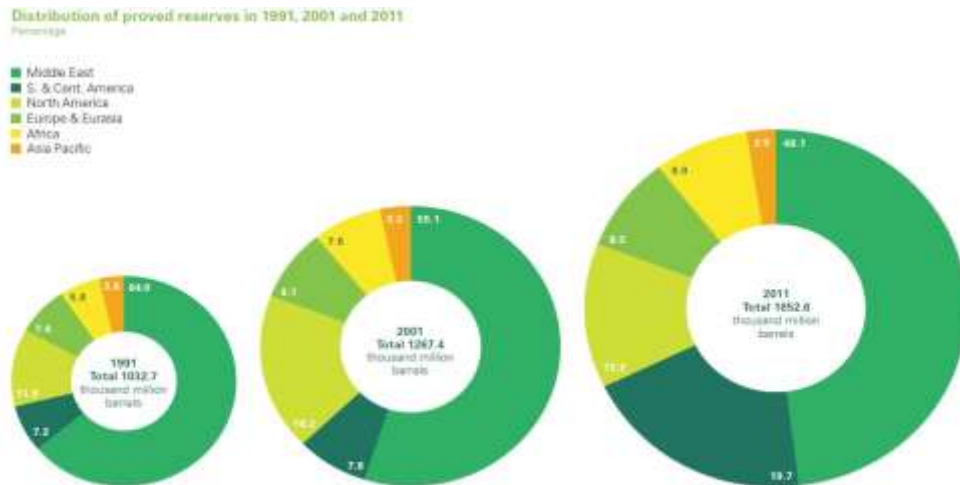


Figure 1 Oil reservation Distribution(BP.P.L.C, 2012)

Because neither countries can be self-contained domestically nor can the other fully utilize their domestic abundant resources due to the geographically uneven distribution, international exploration and trading of petroleum resources is inevitable for almost all nations worldwide, as data shown from Figure 2 below, Middle East has exported 958.8 Million Ton's Oil Equivalents to more than 8 countries at 2011, meanwhile US as the biggest petroleum consumer, has imported 559.8 Million Tons Oil Equivalents from 8 countries worldwide(BP.P.L.C, 2012), not one single

country has close their doors for international trading of petroleum .

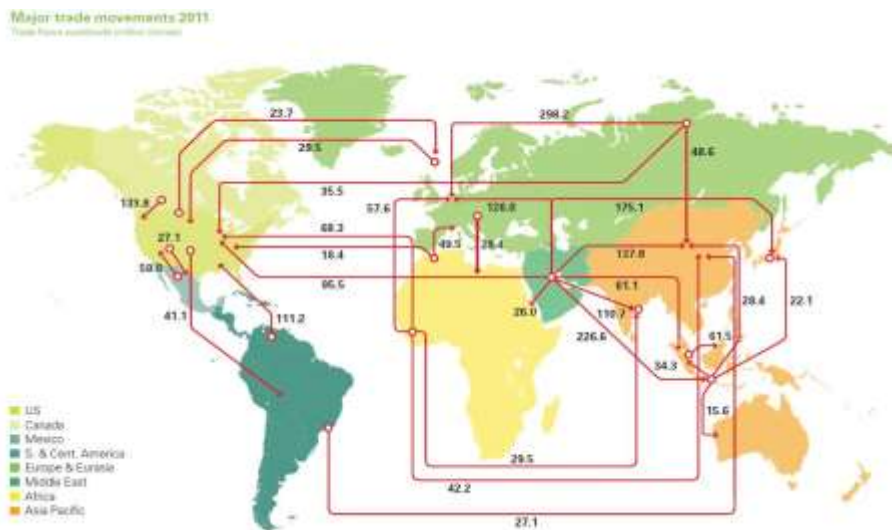


Figure 2 Oil Trade Movement(BP.P.L.C, 2012)

The globalized exploration and trading of petroleum has led the industry become one of the most internationalized business. Moreover petroleum industry is highly depending on filed operation of engineering assets, therefore both the International Oil Companies such as ExxonMobil, BP, ConocoPhillips, and the National Oil Companies for instance China National Petroleum Corporation (CNPC) has allocated and managed their Engineering Assets on global context, for example, majority of ExxonMobil’s engineering projects and facilities for Conventional Petro resources and Liquid Natural Gas are located globally and outside of US territory as shown in figure 3 below (Exxon Mobil Corporation, 2012).



Figure 3 ExxonMobil's global assets allocation(Exxon Mobil Corporation, 2012)

The globalization of petroleum companies has also urged the oilfield service companies operating globally. For instance, world’s most competitive oilfield services companies such as Schlumberger, Baker Hughes and Halliburton have allocated their engineering assets globally to catch up most of the world’s conventional as well as emerging markets, moreover international markets participation, onsite operation and assets mobilization and management in nowadays are more and more inner related and proceed simultaneously with one another in order to provide the

services in a “just in time” delivery mode with the lowest logistic cost and the fastest response time.

1.2. Industrial challenge for Asian Countries

The previous described trend of the globalized competition of the petroleum industry has pressured on most of the Asia developing countries because industrial developing and economical take-off are all depending on sufficient petroleum supply yet natural reservation is quite limit, for example, China’s oil consumption in year 2011 is 522.7 Million Tonnes while the self- production at the same year is about 203.6 Million Tonnes, thus the “oil gap” for China at 2011 was nearly 320 Million Tonnes and for the Entire Asia Pacific that was 928 Million Tonnes which was much more than the entire oil production of Europe and Eurasia at the same year(BP.P.L.C, 2012), this energy challenge has evoke great political response, Chinese NOCs has received intense pressure from government and started its oversea expansion since 1990s(Ma and Andrews - Speed, 2006), a summary of Chinese NOCs foreign activities until 2004 in Table 1 can be a good example for the still ongoing expansions:

Table 1 Chinese NOCs FDI Activities until 2004

Region	Country	Project Nature	Chinese NOC Involvement
African	Algeria	E,DP,R,S	CNPC, Sinopec, CNOOC
	Angola	P	CNPC
	Chad	E	
	Egypt	E,DP,S	Sinopec
	Gabon	E,CS	Sinopec
	Libya	S	CNPC
	Mauritania	E,DP	CNPC
	Morocco	E	CNPC
	Niger	E	CNPC
	Nigeria	E,DP,S,CS	CNPC, Sinopec, Sinosure, CNOOC
	Sudan	E,DP,R,S,PP	CNPC, Sinopec
Tunisia	E,E(g)	Sinochem	
Middle East	Iraq	DP,CS	CNPC, Sinochem,
	Iran	E,DP,S,CS	CNPC, Sinopec
	Kuwait	P	Sinopec
	Oman	E(g),DP,DP(g)	CNOC, Sinopec, Sinochem
	Saudi Arabia	E(g),D(g),S,CS(g)	Sinopec, Sinochem,
	Syria	DP,S	CNPC
	UAE	P(g)	Sinochem
	Yemen	E,DP,DP(g)	Sinopec
S & E Asia/ Australasia	Australia	CS(g),E(g),DP(g)	CNOOC
	Brunei	CS	Sinopec
	Indonesia	E,E(g),DP,DP(g),R,CS(g)	CNPC/Petrochina, CNOOC, Sinopec
	Hong Kong	o	CAO

	Mongolia	S,P,R	Others
	Myanmar	E,E(g),DP	CNPC, Sinopec
	Pakistan	S	CPECC
	Papua New Guinea	E	CNPC, Citic
	Philippines	E	CNOOC
	Singapore	R	CAO
	Taiwan	E	CNOOC
	Thailand	DP	CNPC
Americas	Brazil	E,P,CS	CNPC, Sinopec
	Canada	DP,P(OIL SAND)	CNPC/PetroChina, Sinopec, CNOOC
	Cuba	E,DP	Sinopec
	Ecuador	E,DP,PP,S	CNPC/PetroChina, Sinopec, Sinochem
	Peru	DP,DP(g)	CNPC
	US	P	CNOOC
	Venezuela	E,CS,DP	CNPC
FSU	Azerbaijan	E,S,DP,DP(g)	CNPC, Sinopec
	Kazakhstan	CS(g),E,DP,PP,S	CNPC/PetroChina, Sinopec
	Kyrgyzstan	R	
	Russia	CS,PP	CNPC, Sinopec
	Turkmenistan	S	CNPC
	Uzbekistan	D,S	CNPC, others

<The Overseas Activities of China's National Oil Companies: Rationale and Outlook>
(Ma and Andrews - Speed, 2006)

Projects Nature

- E: Exploration;
- DP: Development and Production;
- P: Production;
- R: Refinery;
- PP: Pipeline;
- CS: Oil Supply Contract;
- CS(g): Gas Supply Contract;
- S: Service Contract;
- O: others; (g): gas.

Chinese NOCs

- CNPC: China National Petroleum Corporation
- PetroChina: PetroChina Company Limited
- Sinopec: China Petrochemical Corporation
- Sinosure: China Export & Credit Insurance Corporation
- Sinochem: Sinochem Corporation
- CNOOC: China National Offshore Oil Corporation
- CAO: China Aviation Oil (Singapore) Corporation Ltd

According to the data from China Petroleum and Chemical Industry Federation (CPCIF), until the end of 2010, Chinese NOCs' Foreign Direct Investment (FDI) has reached 70 \$ Billions for 144 oversea engineering projects(CPCIF, 2010). For instance, CNOOC now have 72 foreign offices & operating facilities located in more than 42 countries worldwide (as showing in Figure 4), while CNPC has 26 foreign Subsidiaries with more numbers of operating facilities allocated all over the world's oilfields, hose FDI has created tremendous engineering assets more than ever globally separated which on one hand recognized as private by local authorities yet on the other hand treated by Chinese government as state owned.

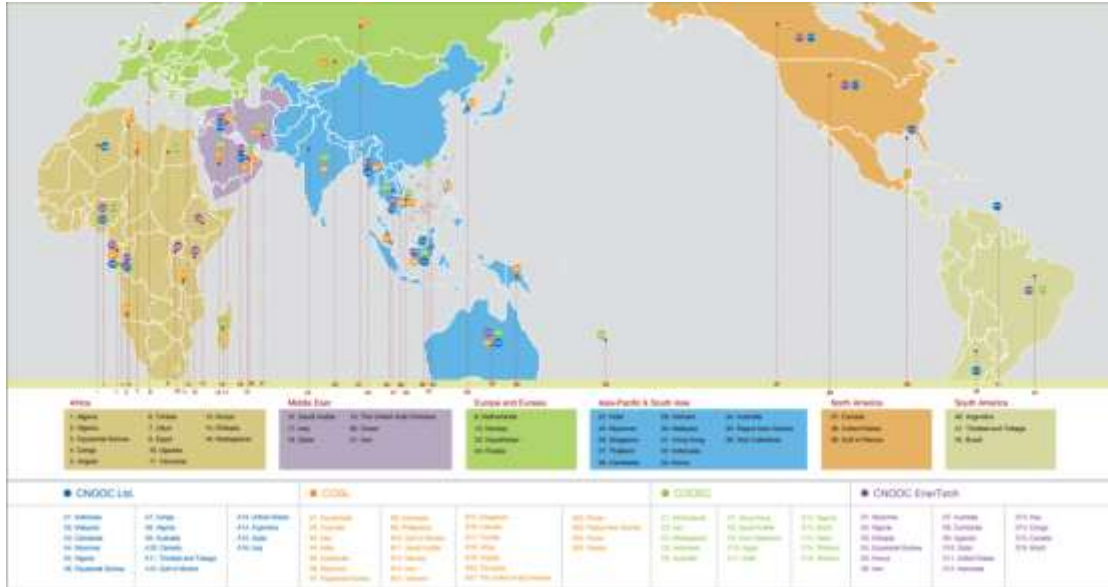


Figure 4 CNOOC Oversea Locations

How to mobilize and manage those engineering assets has been challenges for Chinese NOCs as a new comer to the international petroleum industry, depending on Yin Yijie’s report on 21st Century Business Herald, 2/3 engineering projects of Chinese NOCs’ 70 \$ Billions FDI are general debility caused by managerial defects and markets limitations (Yin Yijie, 2011), even the Chinese NOCs has behavior in recent years more like private companies in international markets , still they have to overcome the following barriers:

1.2.1 Political obstructions

As one of the last few countries ruling by Communist Party, as well as the world’s second largest economy entirety and the first emerging economics, naturally China are recognized by many as opportunities while threats at the same time by the others - “ the close involvement of China’s government in some of the projects, the frequency with which petroleum projects are integrated into a wider package of economic and political deals, and the political nature of some of the host governments has triggered a wide range of political and strategic concerns” (Ma and Andrews - Speed, 2006). Not mention CNOOC’s acquisition of Unocal Corporation had been blocked by US government due to the energy sensitivities, even those conventional industry such as information technology and civil engineering has also been questioned and inspected by one of the most matured market economy - the US Congress has condemned Huawei and SANY as threaten of National Security can be other example of the political obstructions of Chinese companies internationalization process.

1.2.2 Shortage of innovation and R&D activities, Technology Backwards.

Chinese NOCs, particularly Chinese Oilfield Services Companies, as the new comer of the international petroleum industry, have not accumulated adequate technologies and experiences

for efficient and productive innovation and R&D activities. Technology backwards has be the major challenges for Chinese oilfield services companies enter the international arena

1.2.3 Shortage of internationalized talents, inefficient management mechanism

After 20 years' Economical Open Up since 1980s, internationalized human resources are still not enough to support Chinese NOCs foreign operations and management due to lack of training and non-competitive salary system. Meanwhile, huge differences of business environment exist between domestic and oversea markets have caused problems for the centralized Management System.

1.3. Scope & Objectives

The scope of the thesis is try to identify the proper strategies and practices for Chinese oilfield services companies to deploy and manage its internationalized Engineering assets; five major aspects have been examined as follows:

1.3.1 International Oilfield Services Industry Review

A status quo will be conducted to summary the world's major oilfield services companies' global assets deploying strategy for sustainable developing and catching up emerging markets with new opportunities. Further a survey of the admittance regulations and marketing limitations of the world's premiere oilfield services markets will be conducted to highlight the possible competence gaps for Chinese Companies to overcome with. At last in this chapter together with an introduction of COSL the case company, the author will provide a closer look of the current status of case company COSL' oversea engineering assets management.

1.3.2 Company Internal strengths review

Companies internal strengths for oversea expansion and assets management such as human resources, technological capabilities, service innovation and organizational capabilities will be systematically examined, Conclusion of the advantages and disadvantages of the Chinese oilfields services companies' internal strength will be given based on comparison to other Major international Oilfield services companies.

1.3.3 Choosing the right entry mode to mobilize assets to the foreign markets

Three assets deployment models are discussed in this chapter:

- The green field strategy: Green field strategy as an entry model was described by Hennart and Park at 1993 as the companies' foreign direct investment to clone the

parents' strategy and structure in the foreign plant by transferring its technology, supply chain, organizational structure, and corporate culture

- International mergers and acquisitions strategy: As defined by Frynas and Mellahi in the book <Global strategic management >, "An international merger is a transaction that combines two companies from different countries to establish a new legal entity, and acquisition is one company to purchase other company and no new identify is established." .
- Export products, services from domestic bases and manufactures to the international markets.

1.3.4 Way forward

This chapter will discuss the decision making process for choosing locations with strategic importance to build assets management facilities to support companies' international markets participations by designing the assets facilities with integrated functions such as operation supporting, manufacturing and maintenance, regional and international logistics hub, R&D and training etc. based on Yap's global strategy frame work. The conclusion in this chapter will be considered as suggesting for COSL and the other Chinese oilfield companies' next move in future's overseas expansions.

1.4. Methodology

Author has stationed in COSL's Singapore Subsidiaries to write the thesis mainly based on the real company case of COSL and its major overseas Subsidiaries.

Start from cross comparison of assets management literatures and theories to the case company COSL's overseas assets managerial strategy and practices, the thesis is try to draw out conclusions with regarding to the 4 perspective mentioned at 1.3 in this chapter . Data are mainly collected from companies' annual reports, official websites and meeting presentations etc., author had conducted several interviews with key personal to obtain data in COSL HQ and some of its Overseas Subsidiaries for instance COSL Drilling Europe As and PT COSL Indo.

By analyzing companies' Revenue geographical distribution together with their assets allocations from those data resources, clear overview of companies' assets management strategies and current status can be obtained. Meanwhile, survey for world's major oilfields' admittances requirements of foreign engineering assets are conducted mainly based on local authorities' official websites, publications etc.

The international engineering assets management overview together with the survey of world's major oilfield's assets admittances requirements has found the bases for examining COSL's internal strengths for oversea assets managements, Interviews with COSL's assets management department has drawn close look at the company's current assets management strategy and status, can further identify the challenges and opportunities the company may confront in future.

COSL's two overseas subsidiaries which located in Norway and Indonesia will be introduced in detail to elaborate the decision making process of foreign assets enter modes and management framework, step further from here, COSL's new built operation supporting base in Singapore will be used as reference to discuss how to develop and manage international assets as an network to support the company's regional and international operations.

1.5. Limitations

To summary the challenges and resolutions of a Chinese Oilfield Services Companies' deploying and managing internationalized assets require good insights of the industry as well as enough experiences and knowledge of the particular case company COSL. Author do have 6 years work experiences via different positions within the case company COSL, but it is still challenge for the author to reflect the impacts of other environmental factors such as external Economy and Politic influences into the Industry as a whole due to author's knowledge limitations.

Meanwhile international Assets deploying and management in nowadays are closely interact with internationalized marketing and operations strategies due to demands of "just in time" delivery. Therefore to examine assets deploying and management strategies and practices also require good understanding of the marketing and operations strategies which again could be challenges for the author.

Further the research based on analysis of an oilfield services company might not be relevant for the other industries' oversea assets management, for instance, most of the engineering assets of the oilfield services industry such as Drilling Rigs, Cement pumps, Coil tubing equipments are all high-tech oriented and specific equipments which needs much more attention in the process of logistics, operations and maintenances, challenges and solutions met in those assets management process might not be issue for other such as automobile and civil industries. Meanwhile the particular challenges met by Chinese state-owned Companies as the new comer in the international oilfield services industry also may not be an issue for companies in other developed country with long history of internationalization.

Chapter 2. Review of International Oilfield Services Industry.

2.1. Status Quo

As previously mentioned, in order to take share of most of the world's conventional as well as emerging oilfield services markets, Major Oilfield services provider all operate in global context, infrastructures and facilities for Assets mobilization and management in such circumstance are the core competences to support companies' global markets competition, according to Paal Kibsgaard, Schlumberger CEO addressed on Howard Weil Energy Conference 2013: "Schlumberger's world-class maintenance facilities provides a strong operational foundation and enables us to provide call-out services on rigs where our competitors are unable to perform", also as points stated in Baker Hughes Enterprise Magazines: Baker Hughes' new facilities are strategically placed in growth markets around the world cause the right locations of the investments are critical for regional business success.

2.2. Leading oilfield services companies' Internationalized Assets allocation and their regional operation performance

Schlumberger is well known for its "services delivery anytime anywhere" model. The company has more than 370 operating facilities located in 84 countries such as in Russia (137), Middle East (109), Africa (84) and China (40). Together with 25 research, development, and technology centers operated all over the world, Schlumberger is one of the most globally succeed oilfield services company worldwide. Schlumberger's Total Revenue in 2012 was about 42,149 Million USD (Figure 5).

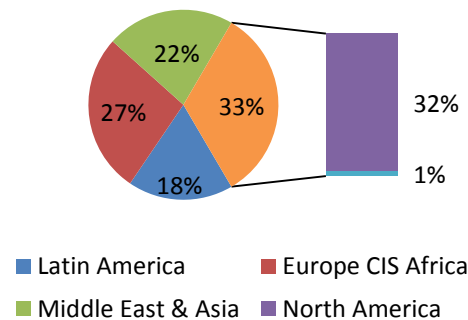


Figure 5 Schlumberger Revenue Graphical Distribution 2012

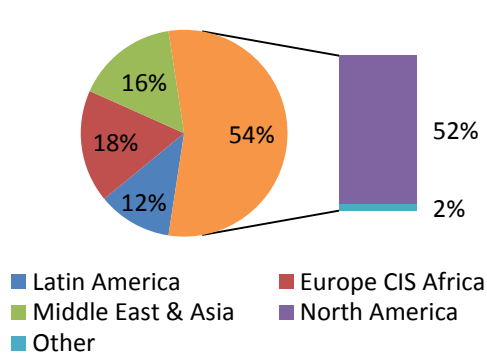


Figure 6 Baker Hughes Revenue Graphical Distribution 2012

Baker Hughes has 56 operating supporting base and manufacture center, 5 R&D and Training center and 1 drilling wastes processing facility located worldwide (as showing in Figure 7). From 2007 to 2011, Baker Hughes has invested 1.1 Billion US Dollars to build more than 836,000 M²s facilities for operating, manufacturing, training and R&D activities. Baker Hughes's Revenue in 2012 was 21,361 Million USD which was graphically distributed as shown in Figure 6.

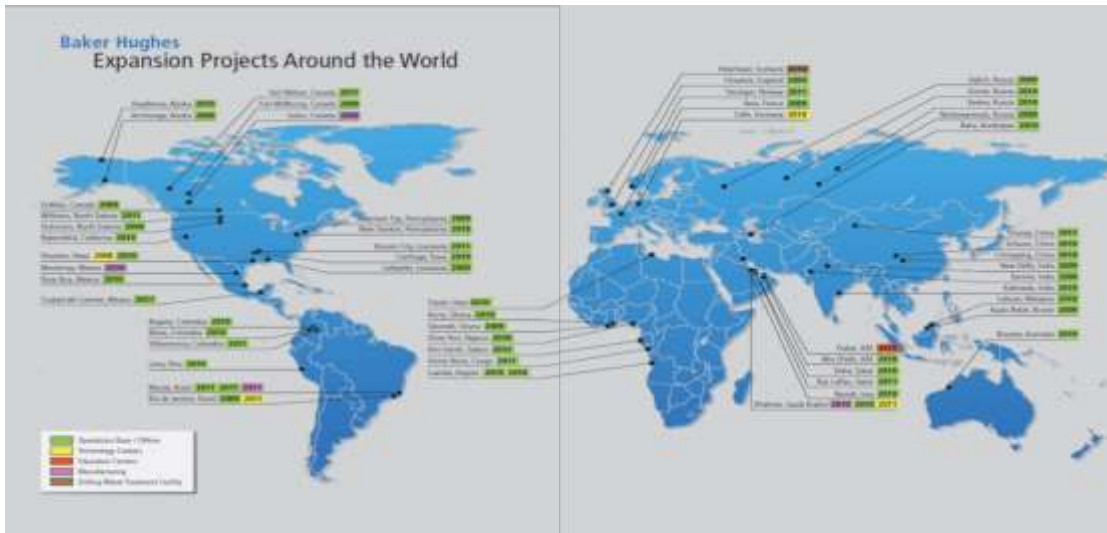


Figure 7 Baker Hughes Global Locations

Halliburton has more than 250 facilities together with 14 R&D centers located in more than 80 countries to support its global operation (as showing in Figure 8 below.) Halliburton’s Revenue in 2012 was 28,503 Million USD which was graphically distributed as shown in Figure 9

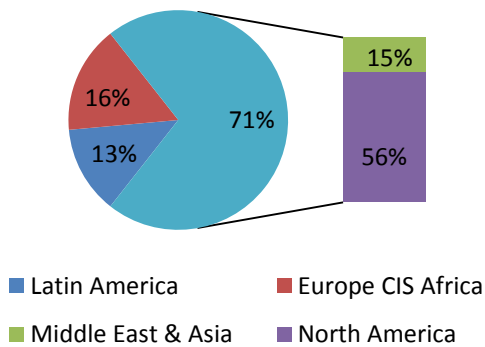


Figure 9 Halliburton Revenue Graphical Distribution 2012

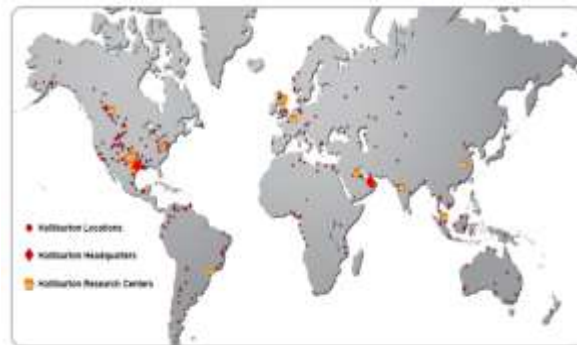


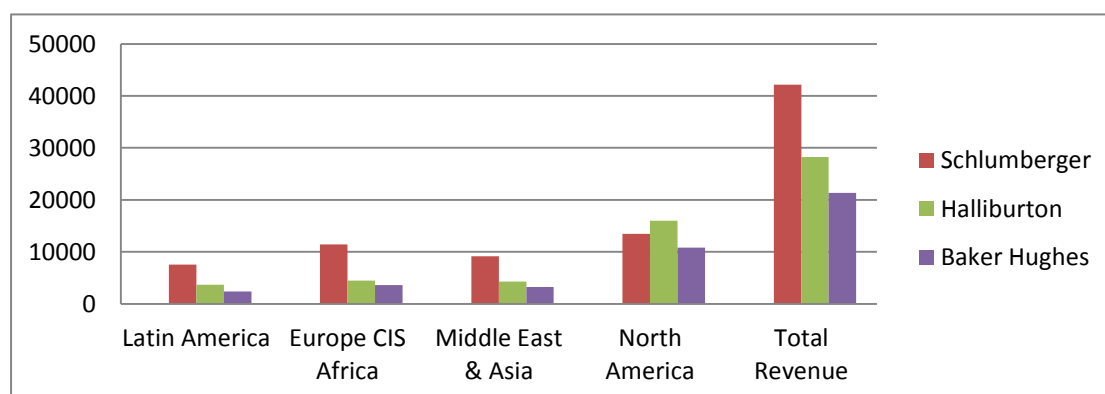
Figure 8 Halliburton Global Location

From Table 2, one can find that North America, with nearly half of Middle East’s Oil & Gas production in 2012, has been the major markets generating more than twice revenue compare to Middle East in the same year, this is mainly because first, E&P activities in North America such as Gulf Mexico involve much more high – tech and complex operations because offshore environment intensively effected by water depth and whether conditions whereas higher Capex from E&P companies are expected, moreover, oilfield like Gulf Mexico has always been the frontier of the oilfield services technology and generally is the arena for the major service companies to demonstrate their state-of-the-art technologies and equipments, then higher investments are also driven by the services providers, therefore engineering assets in this region are in highly concentrated form and generate majority of their revenues for almost all the major services providers.

Furthermore , from the above data one can find that the revenue geographic distribution is generally followed the ratio of geographic locations of the assets, for instance Schlumberger’s

global outstanding performance has a very important contributive factor is that their assets are not only concentrated in one region such as North America and scattered in the other, instead, they have equal developing commitment to all the major markets whereas localized infrastructures and facilities for assets management and operating supporting has been successfully developed and operated by clear perspective of its regional and global strategic purpose.

Table 2 Principle competitors' regional Performance in 2012 (Million USD)



2.3. Review of regulating conditions in International scale

All the countries around the world's major oilfields have set up their requirements and standards to regulate foreign engineering assets entering and operating in their own continents shelves, the differences sometimes can be significant cross regions. To comply with those different regulations and requirements is the first step for overseas engineering assets deploying and management. A quick review of the world's regulating conditions of offshore Oil and Gas industry is list in table 3 :

Table 3 Survey Of Regulatory System in Major Oil Countries

(International Regulators' Forum, 2010)

Country	Regulatory Body	Assurance Mechanism	Admittance Certificates
Norway	The petroleum safety authority Norway (PSA)	Direct / Delegating Auditing and verification/	AOC
UK	Health and Safety Executive- HSE's Offshore Division	Direct Inspection	Safety Case accepted in writing by HSE
US	Bureau of Safety and Environmental Enforcement (BSEE)	Direct inspection and investigations, industry self-inspections/ 3 rd party reviews for deep water projects	Written permits from District Manager
Mexico	National Hydrocarbons Commission (CNH)	Assessment of Safety Case for Deep water Projects/ technical assessment for shallow and onshore activities	Written approval from CNH
Canada	Canada-Newfoundland & Labrador Offshore Petroleum Board (C-NLOPB) Canada-Nova Scotia Offshore Petroleum	Direct inspection, audit/ self-inspection/ joint requirements from other	A Certificate of Fitness from recognized

	Board (CNSOPB) National Energy Board (NEB)	entirety	authorities
Indonesia	Directorate General of Oil and Gas (MIGAS) of the Department of Mines and Energy/ Technical Directorate of Oil and Gas exploration and Production	Inspection by 3 rd party authorization	Certificates From MIGAS
Russia	Federal mining and industrial inspectorate of Russia (GOSGORTEKHNADZOR-GGTN) Committee of the Russian federation on standardization, metrology and certification (GOSSTANDART)	Application examine / facilities direct Audits by government agencies	Certificate and License for Application of a mark of compliance

Counties list in table 3 can generally be divided into two kinds:

■ International Regulators' Forum (IRF) and its member counties:

The IRF is a group of ten regulators of health and safety in the offshore upstream oil and gas industry (International Regulators' Forum, 2010). IRF is the place member countries can cooperate on Standardization activities, sharing incident and data and performance measures. Generally IRF represent the mature regulatory environments of the offshore petroleum activities in most developed countries which including the following:

- Australia
- Brazil
- Canada
- Netherlands
- New Zealand
- Norway
- United Kingdom
- United States

Offshore operation and assets management in those counties need to follow high QHSE standards and require extremely fitness of the facilities and equipments for particular operation environment. However thanks for the matureness and transparency of national regulatory system in those regions, international oilfield service companies can obtain permits and operate under stable regulatory environment as long as they commit to comply with those requirements which are mainly in-line with international standards and equally applied to everyone who is interested.

■ countries which are not member of IRF

Such countries like Russia has quite unique regulatory system for offshore operations, for instance, Application for Oil and Gas Equipments operation permits needs to follow 35 Russian state standards (GOST) and more than 1000 state and branch standards for complementary parts and also more than 300 technical specs for certain type of equipments (Kozlov and Kozlov, 2002). International oilfield services companies sometimes find it is difficult to bring their global

standards and applications into Russia and the best way for fast fit in is M&A strategy which allows them to develop their global technical and management advantages through acquired local subsidiaries with Russian faces.

Other countries besides Russia which not belong to IRF are countries with relatively lower standards or immature regulatory systems in developing regions such as China, Vietnam, Indonesia and African countries. International oilfield services companies generally adopted green field strategy in those regional but sometimes there are challenges to deal with emergencies with regarding to social, political and environmental issues.

Chapter 3. The case of China Oilfield Services Limited (COSL)

3.1. Status of the Chinese Oilfield services companies

One special condition of the Chinese NOCs is that they all have their own oilfield services companies as independent operating subsidiaries to cover almost the entire oilfield service chains both in their domestic and foreign markets. Therefore most of the Chinese Oilfield Services companies are actually state-owned and generally follow their mother companies' oversea expansion steps. Major Chinese oilfield services companies and its affiliates are list in Table 4

Table 4 Chinese Oilfield Services Companies Summary

Mother company	Oilfield services Subsidiaries	Services scope								
		O	L	GS	DS	WS	MS	CS	PS	MF
CNPC	CNODC									
	BGP									
	GWDC									
SINOPEC	SINOPEC SERVICE Ltd									
	SIPC									
CNOOC	COSL									
	COOEC									

Oilfield Service Companies

- CNODC: China National Oil & Gas Exploration & Development Company
- BGP: Bureau of Geophysical Prospecting
- GWDC: Great Wall Drilling Company
- SIPC: Sinopec International Petroleum Exploration and Production Corporation
- COSL: China Oilfield Services Limited
- COOEC: Offshore Oil Engineering Co. Ltd

Service Scope

- O: Offshore
- L: Land
- GS: Geographic Services
- DS: Drilling Services
- WS: Well Services
- MS: Marine Services
- CS: Construction Services
- MF: Manufactures
- PS: Production Services

3.2. Services Segments and Business performance overview of COSL

3.2.1 Four Services Segments

As being the largest listed offshore oilfield services company in China, COSL has four services segments to cover all major engineering sections of the offshore oil and gas exploration activities:

■ Geophysical services:

Marine seismic data collection, procession and interpretation services; marine surveying and underwater engineering services; geology and civil construction services in land, swamps and beach. The company now owns 7 seismic vessels, 2 Ocean Bottom Cables vessels, annual data collection capability is about 22,000 km² for 3D and 65,000 km for 2D, one of the company's cables vessels HYSY720 is namely the most advanced 12-cables seismic vessel in Asia region. In 2012, four seismic vessels had operated in Myanmar, Thailand and Pakistan.

■ Drilling services:

Operation of 5 semi-submersibles rigs, 27 jack up rigs, 2 accommodation rigs, 4 module rigs and 6 land drilling rigs, with operation depth from 5- 750 m; 2 accommodation rigs; 4 modular rigs and 6 land drilling rigs. Drilling services had contributed 85% of COSL's oversea revenue in 2012 with 33 rigs operated in UK, Norway, Iran, Iraq, Mexico and Indonesia.

■ Well services:

Well-tech services including FCT (Formation Characteristic Tool), FET (Formation Evaluation Tool), LWD (Logging-While-Drilling) and ERSC (ELIS Rotary Sidewall Coring Tool), etc.; Oilfield chemicals and optimization services. ELIS sidewall coring tool, Casing logging equipment, cement pump units, work over equipments has always been the engineering assets deployed and operated in oversea markets, in 2012, Indonesia was the major oversea markets for COSL's well services

■ Marine services:

Marine services including operating 90 utility vessels of various types, 3 oil tankers, 5 chemical carriers, which were mainly operated in offshore China, in 2012, 4 COSL offshore supporting barges had operated in Indonesia.

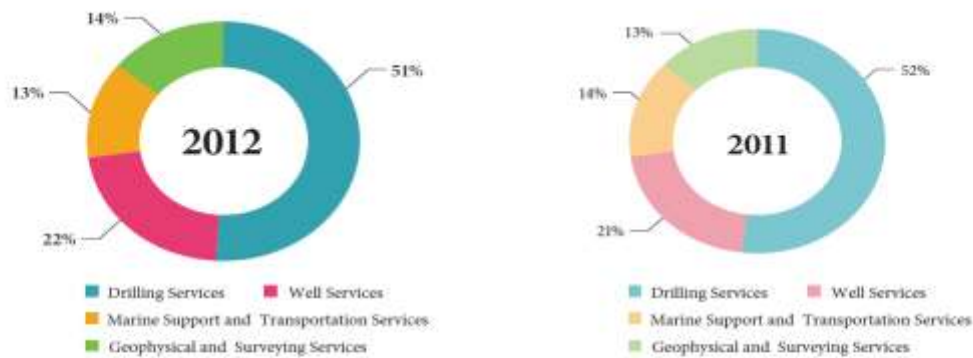


Figure 10 Engineering Assets of COSL (COSL, 2010)

3.2.2 Business Performance

COSL's Market Cap to date is 69.812 billion RMB, the annual result shows that in 2012, after 10 years since listed in Hong Kong stock exchange market, the company's total revenue reached about 22,104.7 million RMB With 31.1% revenue generated from overseas assets which count for 51% of the total engineering assets of the company. Analyzing by services segments, drilling service were in the first place to contribute 51 % of the total revenue and followed by 22% generated from Well services in the second place.

Table 5 COSL Revenue Analysis By Region



Analysis by operation area

Region	2012	2011	Increase/ (Decrease)	Percentage change
Domestic	15,225.3	13,252.6	1,972.7	14.9%
Overseas	6,879.4	5,173.5	1,705.9	33.0%
Total	22,104.7	18,426.1	3,678.6	20.0%

Unit: RMB million

By regions, North Europe comes to the first place to contribute 28% of the total overseas revenue and South East Asia with about 26% in the second place as showing in the chart below:

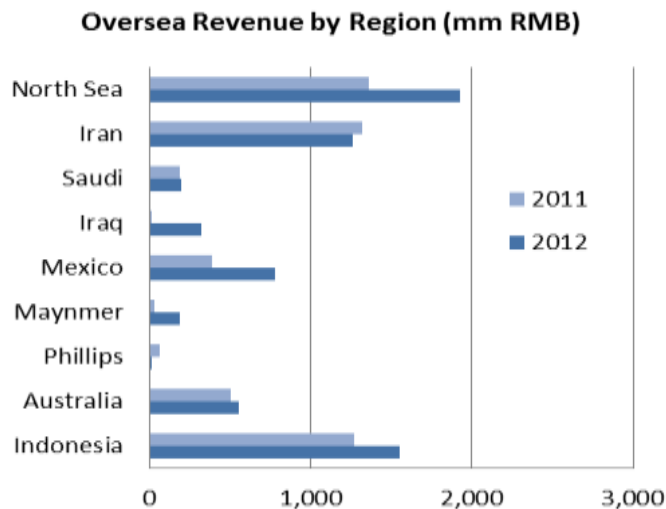


Table 6 COSL Overseas Revenue Analysis By Region

3.3. Internationalization process of COSL

Internationalization has been the long term strategy of COSL for a decade. COSL’s management has not limited the company only in the market share of the Chinese continental shelf (CCS) even there is still great potentials in South and East China Sea, not only because the internationalization trend of the Oil& Gas Industry mentioned previously, but also because the tendency of the offshore development has skipped to deep water whereas is the future of oil-gas industry, and, not like the other worlds’ giant energy consumption countries, 90% of CCS is shallow-middle water with relative low profile of oil reservation which is not likely, neither of the past nor in the future, to be the frontier and hot zone of the world’s oilfield services industry such as Golf Mexico and Coast of Brazil, Therefore go globe is the best way for COSL to break through its bottleneck to achieve sustainable development.

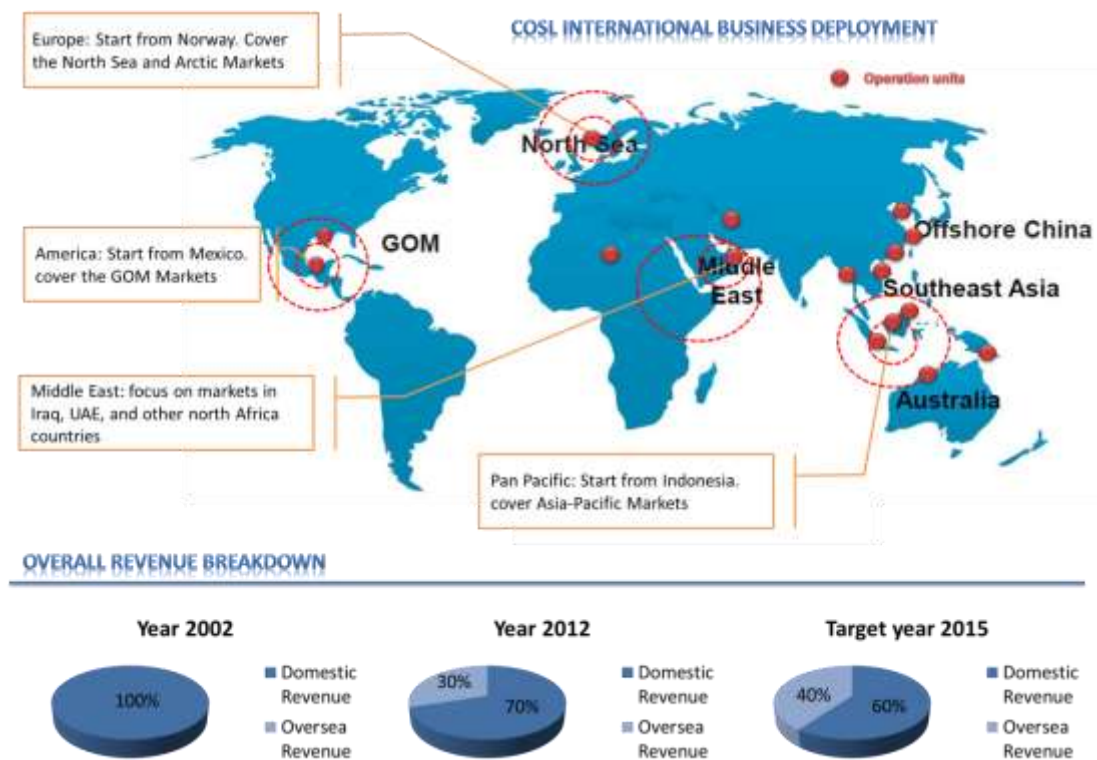


Figure 11 COSL International Business Deployments(COSL, 2012)

Chapter 4. Review of Internal capabilities of COSL

Companies' internationalization pattern and processes are in large extent decided by the companies' internal capabilities including Management Commitment, Human Resources, Organization capacities, technological specs, Services model etc., as previously discussed, due to the internationalization trend of the industry, COSL's Management has high commitment and devote constantly efforts in order to forge the company into an competitive participants in international markets. However the previously mentioned local industrial challenges have still reflected into the company's internal capacities and affected its short and long term strategy for internationalizations.

4.1. Psychic distance to overseas markets

When matching company's internal capacities to their oversea expansion strategies, psychic distance is the first and also the most comprehensive topic one should look into to identify suitability of companies' "software" for overseas operations. According to Johanson and Wiedersheim's observation of companies internalize process at 1975, at the start point of internationalization , firms are tend to start their expansions in countries with small Psychic Distance, the concept of Psychic Distance is the extend of the difference between the companies origin location and the targeted foreign markets with regarding to the following factors including geographical distance, logistics infrastructures, language, religion, education levels, levels of industrial development, political systems, legal systems and government regulations.(Johanson and Wiedersheim-Paul, 1975). Many researches had been conducted to measure the Psychic Distances between the origins and different overseas distention in a quantities way. A relatively integrated method being introduced by Dow Douglas and Karunaratna Amal has argued that one should measure the Psychic Distance from factors in Macro-Level as showing in figure 7(Dow and Karunaratna, 2006):

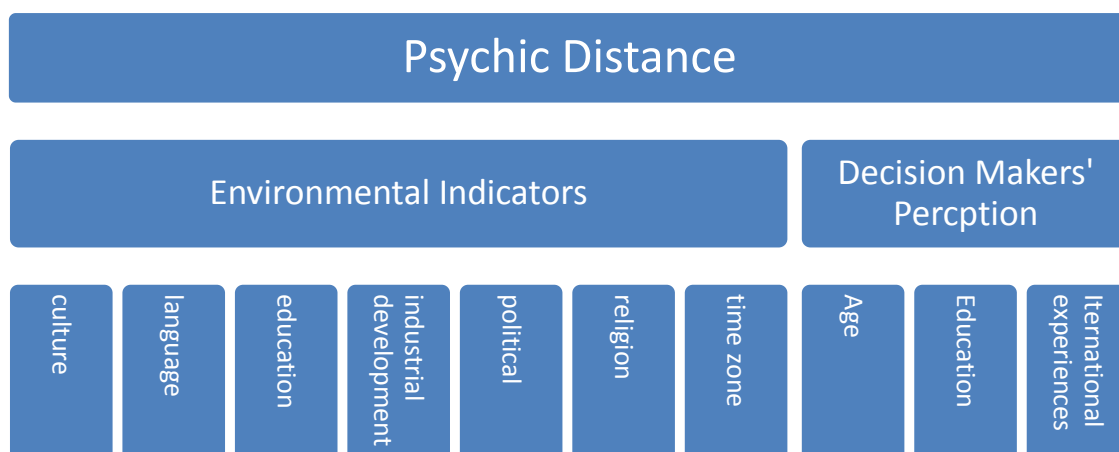


Figure 12 Psychic Distance(Dow and Karunaratna, 2006)

4.1.1 COSL's Psychic distance to overseas markets

Based on the indicators shown in Figure 7, we choose the countries where COSL establish their major oversea Subsidiaries and units as the target markets to measure the Psychic Distance. Micro-level indicators list in Figure 7 has been differentiated into various levels and calculated via formula 1 as below:

$$\text{Psychic Distance}_n = \sum_{k=1,2,3,4,5,6,7}^{k=1,2,3,4,5,6,7} \text{score}_n^k$$

Equation 1 Psychic distance calculating

Countries n: Norway (1), Australia (2), Mexico (3), Middle East (4), North Africa (5), Singapore (6), Indonesia (7)

Indicators K: Culture¹, Language², Education³, Ind. Develop⁴, Political⁵, Religion⁶, , Mgmt. Perception⁷

Score:

- Totally different: weighted 3
- Very different : weighted 2
- Quite Different but with countable similarities: weighted 1
- Difference equal to similarities: weighted 0
- Similar but with countable difference: weighted -1
- Very similar: weighted -2
- The same: weighted -3

4.1.2 Decision Makers Perception

After going through the introduction of the company senior management, we obtained the following facts based on which the scores has been given as showing in chart 1

■ Chairman of the Board:	■ President and CEO:
Liu Jian Born: 1958 Education: MBA (Tian Jing University), BSc (China) English Proficiency: Good Foreign Experience: Abandoned Work Experience in Oil& Gas Industry: 30 years. Commit to the company's internationalization:	Li Yong Born: 1963 Education: MBA (Peking University), MSc (Italy), BSc (China) English Proficiency: Good Foreign Experience: Abandoned Work Experience in Oil& Gas Industry: 28 years. Commit to the company's internationalization:

“The Company will strengthen its technique and staff training, build up and prepare a management team and equipment for deep-water operation with world-class competitive strength”(Jian. Liu, 2013)	“In 2012, we should be proud of our operating performance and business progress. But we are well aware of that, we still have to face lots of challenges to build COSL into an oilfield services company with international competitiveness.” .(Yong . Li, 2013)
--	---

From the facts above, based on common understanding, the weight of the management perception has been given as – 3

4.1.3 Environment Indicator

For environmental indicators, since there is no absolute conclusion, the scoring has to be based on common understanding of the difference between China and the other countries and regions in contemporary time. Together with the scores of Management Perception given by -3, the total score to indicate the degree of the psychic distance between COSL and other market countries are showing in table below.

Countries ⁿ	Norway ₁	Australia ₂	Mexico ₃	Middle East ₄	North Africa ₅	Singapore ₆	Indonesia ₇
Indicators ^k							
Culture ¹	3	3	3	3	3	0	1
Language ²	3	3	3	3	3	0	1
Education ³	2	2	2	2	1	2	1
Ind. Development. ⁴	3	3	2	2	1	1	1
Political ⁵	3	3	3	3	3	1	0
Religion ⁶	3	3	3	3	3	0	1
Mgmt. Perception ⁸	-3	-3	-3	-3	-3	-3	-3
Psychic Distance	14	14	13	13	11	3	2

Table 7 Psychic Distance measurement

4.1.4 Bridging the Psychic Distance

Many international companies, especially Asia business enteritis such as Samsung, Acer and Haier, had confronted this Psychic Distance in the beginning of their oversea expansions; one of their common practices to minimize the Psychic Distance is to employ internationalized talents and conduct internationalized training for managers in order to bridge the prescribed environmental and perceptual gaps because, as previous discussion, environmental indicators of psychic distances are hard to change in short timing by actions alone, In contrast, decision makers , or in a more macro- perspective, the employees’ perceptions can be changed relatively easier by relevant recruiting and training of international talents. Definitions of International talents are vary, but as Reid found in 1981 that talents are better to make decisions in international environment with the following characteristics (Stan D Reid, 1981):

- Foreign travel, education, work and living experiences. Employees with such experiences are:
 - More easily to adopt themselves into the foreign environment, and
 - more sensitive to grasp and utilize external resources offered by foreign environments,
 - also more capable to deal with foreigners in the circumstance of negotiation or collaboration etc.
- Foreign language proficiency. Chinese top managers who speaking good English are:
 - most likely have great interests as well as experiences of oversea business,
 - easier to establish foreign social and business networks ,
 - More confident and language-wise in negotiation and public events.
- Personal characteristics such as self- Challenging, high ambitious and risk takers are more likely to encourage themselves to deal foreign affairs instead of play safe in domestic environment.

Those characteristics, as foundations together with proper international business, marketing, cultural awareness and technical training, can short the companies' psychic distance from target markets effectively in various context from strategy making to front line operations.

4.2. COSL's Internationalized Human Resource Strategy

To bridge the Psychic distance by employing internationalized talents has been the consent of COSL's management as they had addressed: "the first step for COSL to going global markets is to optimize our human resources structures, and developing internationalized talents pools to bridge the significant psychic distance between Chinese State owned energy company and the global markets", It has been a tradition for COSL to training and develop internationalized talent pools for decade under special circumstance as a state holding company in China.

- Recruiting domestic newly graduates with higher education background

One of the specialties of the HR routines for Chinese State-Owned company is that on general basis, neither the company will dismiss employees going with the company for years even if they are not capable to serve their job when environments changed due to the companies' undertaking of political responsibilities, nor the employees will resign their job in such situation in seeking of life stability. Therefore unlike Samsung Group, COSL's HR internationalize strategy has to be focused on training and developing domestic permanent employees instead of heavily recruiting existing internationalized talents externally at least in the primary stages of its oversea expansion, not only because COSL has to take the political responsibility to recruit from millions of newly graduates from Chinese Universities every year, but also the management found that those graduates are cost less but have good potentials to take managerial positions especially in dealing with foreign affairs after training and work for a while, because first they have good foreign language proficiencies, second, as young generation of China, mainly of them have better understanding of western cultural and business context, further they cherish the chance to developing their career in international back ground which will grant them with much broader career ladders, finally this group of employees, unlike the existing talents directly recruit

externally, are more loyal and also easier to accept company's cultures.

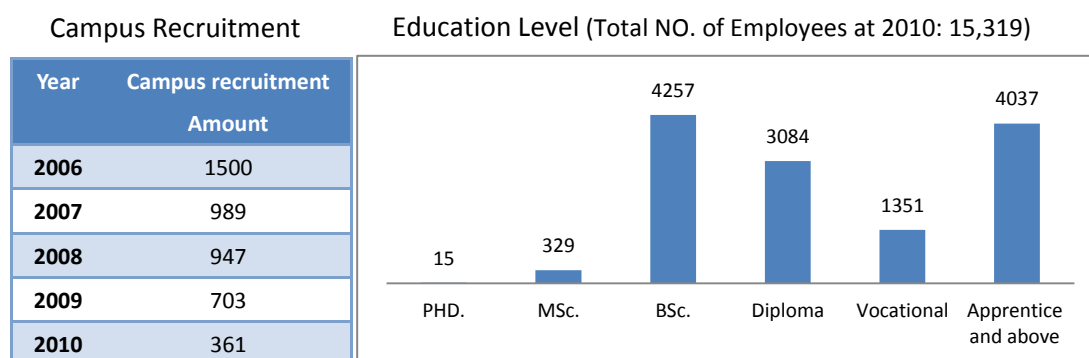


Table 8 Distribution of Employees Education level(COSL HR Dept, 2011)

Those graduates will first be assigned to front-line for several years to gain experience and basic understandings of the actual business, then depending on their personalities and the abilities to work, some may choose to stay in front line to develop their career as technician, operators and engineers, while the others may be assigned to overseas' Subsidiaries to gain more broaden international experiences, this group of employees lies the foundation of COSL's internationalized talents pools. In 2011, the companies' internationalized employees has reached a number of approximate 1500 which is 10% of its total human resources , and so far it is also the major workforces to support COSL's overseas operations(COSL HR Dept, 2011).

Training level	Training content	Achieved till 2010	Targets in 2015
Executives training	MBA courses training in International Institutions	27	50
Training for Middle managements	International financial and marketing training; Western cultural training; job training in overseas Subsidiaries and units	73	250
Training for promising younger employees	MSc, MBA diploma training in International Universities	17	50
Training for front-line workers	Language proficiency / Management/ operational skill trainings	1300	1900

Table 9 COSL's Internationalized Training(COSL HR Dept, 2011)

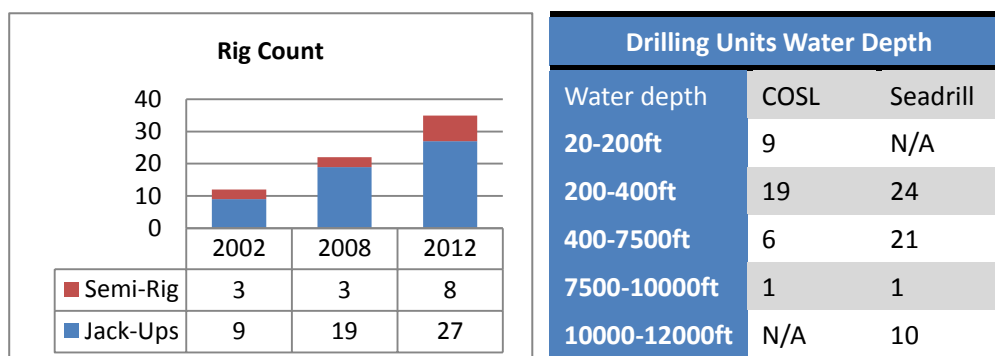
4.3. Technical capacities of COSL's Engineering Assets

4.3.1 Offshore mobilization units

Drilling services has contributed more than half COSL's revenue in 2012, therefore the technical capacities of the drilling units will in large extent decide the company's service capacities and performance level. after decades since COSL listed in Hong Kong Stock Market, COSL's offshore Drilling units has increased almost triple in amount, Summary of COSL's offshore Drilling Units are

shown below

Table 10 COSL Rig Counts



Drilling Units Water Depth		
Water depth	COSL	Seadrill
20-200ft	9	N/A
200-400ft	19	24
400-7500ft	6	21
7500-10000ft	1	1
10000-12000ft	N/A	10

■ **Capable to cover traditional shallow-middle waters**

From the chart above, one will find that almost 28 drilling units are capable to cover traditional shallow-middle water zones in domestic and overseas markets. In 2012, 12 Jack up rigs operated in Iran, Iraq and Indonesia, Mexico and Saudi Arab with short term or long term contract. 3 semi-submersibles-rigs have operated in Norwegian waters for long term contracts.

■ **Incompetent to cover deep-water frontier and extreme Weather conditions**

The operation capacity of the deep-water frontier is still weak comparing to peer companies in the markets such as Sea Drill Ltd. In 2012, on stream of COSL's first ultra-deep water drilling Rig HYSY 981 which is named as the most advanced in Asia to date represent new horizon of COSL's business segments. The semi- submersibles rig COSLProspector under construction is the only rig designed for harsh weather conditions in North Sea and the arctic regions.

■ **Offshore logging equipment**

Besides 15 offshore logging and surveying vessels operated on middle and shallow water on regular basis, COSL's currently only deep-water surveying vessel "HYSY708" is on stream recently with fare performance

■ **Available day utilization rate up to 100%**

High utilization rate of the drilling units certificated COSL's management capacities as well as the high demands from the markets; COSL still has great space to upgrade the technical capacity of its engineering assets.

Chapter 5. Choosing the DIFFERENT entry modes to mobilize assets to foreign markets

5.1. The Uppsala Model

The well-known Uppsala Model (Johanson and Vahlne, 1977) suggested the firm's internationalization path is a successive incremental steps including gradually increased international marketing knowledge with greater market commitments thereafter as shown in the figure below.

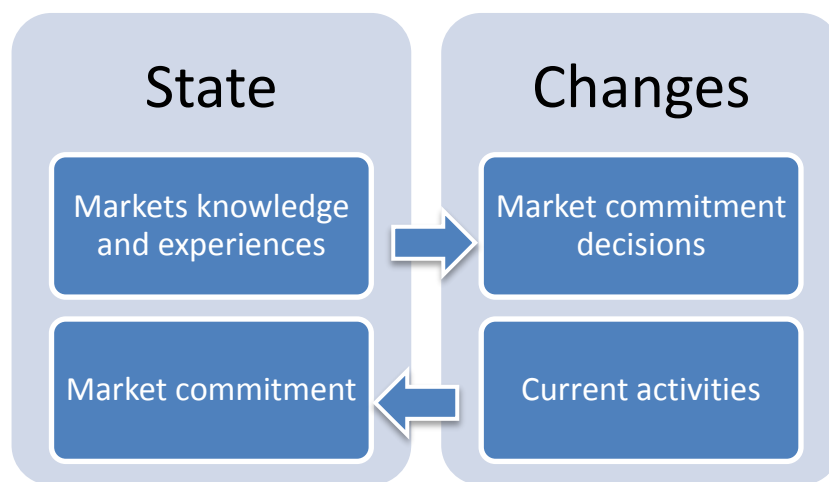


Figure 13 Uppsala Model (Johanson and Vahlne, 1977)

The Uppsala Model suggests that international market experiences and knowledge are the key elements in a company's internationalization process. The model assumes that if a company acquires more foreign market experiences, it tends to invest in that market with higher commitment. With higher investment commitments, more experience and knowledge will be gained, and the process will continue until the company's foreign business reaches an ideal status. The Uppsala Model explains why firms always choose their first foreign markets with less psychic distance, whereas market knowledge is easier to acquire among others. Typical footprints of business internationalization, as well as assets overseas deployment, are listed below:

- Step 1: Non-regular export activities
- Step 2: Export activities via independent representatives and agents
- Step 3: Establish overseas subsidiaries by FDI
- Step 4: Establish overseas production, manufacturing, R&D centers

The last two steps of the internationalization of companies, which follow the Uppsala model, represent the company's start of transformation from internationalization to globalization with FDI and aim to build worldwide value creation networks.

Adequate foreign markets' experiences are not the only striving factor for firms' international expansion, moreover, sometimes company will choose to conduct FDI in counties with larger physic distance due to strategic purposes for cost reduction or participation in emerging markets, for instance, companies in Europe may chose FDI in China and Vietnam instead of adjacent counties for the cheaper manufacturing costs, the international car industry has in a very early stage chosen China as their manufacturing center not only because the cheap costs, but also because the emerging needs of automobile in domestic China has become the major striving force for the companies turnover. Meanwhile, for the previously described reason, just like Samsun Inc. and Haier Inc. which are oriented from emerging economics, participating in international markets has been recognized as good way by many companies to promote not only their international brands but also domestic images.

For petroleum industry especially the oilfield services industry, the suitable FDI mode are much limit compare to other industries due to the advanced technology and high costs in daily operations which require much stronger connections between foreign Subsidiaries and their domestic mother companies, thus most of the oilfield services companies choose Wholly-owned FDI as the entry modes in order to obtain enough control of the foreign Subsidiaries' operation:

■ Greenfield Strategy

A company fully cloning mother companies' business strategies and operational structures to a foreign branch, from the planning stages to actually operation is called Greenfield Strategy(Hennart and Park, 1993) , Greenfield strategy has the following advantages :

- Efficient to transfer the managerial, technical advantages from the mother company to the overseas Subsidiaries
- Able to recruit new labor forces or assign inherit employees from the mother company to the overseas Subsidiaries
- Easily to establish direct control to overseas Subsidiaries
- Free to mobilize assets from original country to overseas Subsidiaries
- More flexible to choose locations or build new facilities for the new Subsidiaries.

Greenfield strategy is always chosen when psychic distance is obvious and the industry developing in the target country is in the status of immature or relatively low. The company could take advantages to transfer its managerial skills and organizational structures to the target country, meanwhile be free to restrictions of employment and organization issues, this is usually the case when European and America firms conduct FDI in Asia developing countries such as China, India, Indonesia etc.

■ Mergers and Acquisitions (M&As) Strategy

"Mergers and acquisitions (abbreviated M&A) is an aspect of corporate strategy, corporate finance and management dealing with the buying, selling, dividing and combining of different companies and similar entities that can help an enterprise grow rapidly in its sector or location of origin, or a new field or new location, without creating a subsidiary, other child entity or using a joint venture. The distinction between a "merger" and an "acquisition" has become increasingly

blurred in various respects (particularly in terms of the ultimate economic outcome), although it has not completely disappeared in all situations”(WIKIPEDIA, 2013) . M&A has the following advantages:

- Easiest way to enter a new markets with mature but sophisticate regulations and rules
- Efficient to acquire new skills, local knowledge and customers
- Acquire local engineering assets with Less costs than mobilization assets from the origin country

Company will always choose M&A strategies when they plan to enter a new region in a short timing with less local knowledge and skills, especially the industrial standards is different and psychic distance is quite high in the target markets. One will find that as previously discussed that the regulatory system of the petroleum engineering assets in Russia is much different compare with other mature markets, therefore global oilfield services companies such as Schlumberger employ M&A strategy in Russia heavily to achieve its regional success which can hardly be outstand by peer companies, across Russia Schlumberger has 137 operating facilities and approximately 13,900 employees with 96% nationals to date, Schlumberger’s Major M&A activities in Russia can be found in the following chart:



Figure 14 Schlumberger's M&A in Russia

5.2. COSL’s foreign assets mobilization and managing mode

COSL’s internationalization basically follows the sequence of Uppsala Model as well as presumes strategic targets occasionally, The Internationalization process can generally be classified in three phases to date:

- The first phase of COSL’s Internationalization is about the same time when Chinese Continental Shelf (NCS) was open for International Oil Companies at 1982 and former Conoco

INC (Now ConocoPhillips) entered as pioneer of offshore operations in China, since that time ConocoPhillips has brought the international operation environment to the Chinese Domestic Oilfield Services Industry and has provided the opportunities for COSL's Precedes companies to practice "semi-international operations" in domestic environment on non-regular basis.

- The second phase started from COSL's holding Company - China National Offshore Oil Corporation (CNOOC) overseas expansions at 2000s, affiliated with which, COSL startup its business in pure foreign environments and start to provide services to CNOOC overseas projects and other global oil giants' adjacent projects as an independent oilfield services providers.
- The third phase start from COSL Official listing in Hong Kong Stock Exchange Markets at 2002, In 2012, after years' devoting, COSL's overseas operation has contributed 32 % of the company's total revenue with utilizing of overseas subsidiaries and operation units which located in North and South America, Middle East, Africa, Europe, South East Asia, Australia and more are in the front

5.3. Green Field strategy in Indonesia

As previously discussed, Indonesia as the region with lowest psychic distance to COSL, therefore naturally be the first place for COSL choosing to mobilize their engineering assets and build fully controlled subsidiaries for regional business.

5.3.1 Managerial structures Transferred into Indonesia by Green Field strategy

So far COSL has established one regional branch and 5 business lines to serve international and local oil companies operate in Pan-Pacific region as showing in the figure below,

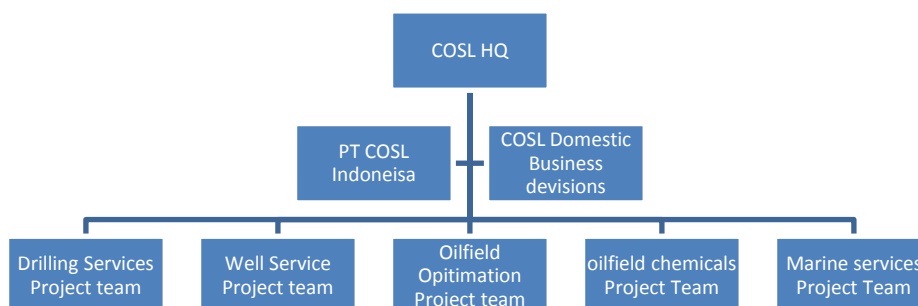


Figure 15 COSL Overseas Branches' Managerial Structure

- **COSL HQ:**
Provide central management and coordination of COSL's business divisions and the 4 services segment to collaborate in Indonesia markets within top level matters.

- **PT COSL Indonesia:**
 - Provide unified interface for COSL's four services segments to local customers for tendering, contracting, operation management, also provide government - social relationships maintenance
 - Local supporting and management for the four services segments including infrastructures, logistics, warehouse, catering and accommodations.
- **COSL domestic Business Divisions:**
 - Domestic Driven force for revenue increasing in Indonesia by direct instructions and management
 - Act as the domestic base to support overseas operations in Indonesia including engineering assets, labor and technician exporting, technical supporting etc.
- **Services project team**
 - Engineering Assets Operation and Management
 - Onsite services to customers

5.3.2 Advantages of the managerial structure

Unlike the usually centralized managerial structure of the Chinese State-owned Companies, COSL's overseas' Subsidiaries and operation units has more flexibility to react to front line challenges, meanwhile COSL HQ has absolute control over top matters but services in a way as backup for those overseas units, this treats enable all the overseas subsidiaries and operation units to implement COSL's overall marketing strategy efficiently and united as a whole, synergy effects therefore can be achieved between all the four services segment. Moreover, enough authorities granted to the overseas operation units enable them to act as an independent operator to satisfy the needs from markets and customers with utilizing their best potentials and the company nature as a Chinese state-owned therefore is fade up.

5.3.3 Service lines and Engineering Assets in Indonesia at 2012

In 2012, Indonesia markets has become the top overseas markets with its largest business, largest number of customers and largest number of operating projects (COSL 2012 Annual Report). Indonesia had contributed 26% of COSL's overseas revenue in 2012. Major services lines and Assets deploying and mobilize in Indonesia at 2012 as lists below:

Table 11 Services Lines and Engineering Assets in Indonesia

Services line	Engineering assets	Quantity
Drilling Services	Jack Up Rigs	4
	Drilling & Work over Units	5
Well Services	Elis Well Logging units	16
	Tubing Conveyed Perforating units (TCP) Logging	10

	VSP Logging System	9
	MWD Units	1
Oil Chemicals	Cementing Pump Units	36
	Mud Centrifuge	7
Marine services	Well work over supporting barges	5

These Assets in above charts are generally deployed and management into Indonesia in two ways

- **Service & Assets Exporting - Mobilized from domestic base in China to Indonesia based on services Contracts**

Four Jack-up rigs and the Drilling Work Over units are directly mobilized from Base in China to Indonesia for Drilling and Work Over contracts, PT COSL Indo providing operation base services but without yards for Major Rig maintenance. This means when contract is over, rigs have to be demobilized back to China on regular basis. In this term, jack-up rigs and drilling services are still following the traditional Exporting Formula.

- **Services based on Local assets.**

Assets in the above table except drilling rigs and work-over units were exported from China but are generally operated locally and maintained in PT COSL INDO Base in the time window, Therefore It can be recognized as local assets and services products instead of services and Assets exporting from China.

5.3.4 **Contributes for COSL's regional success in Indonesia**

- **Lowest Psychic Distance**

The similar industry, social, political developing level, relatively flexible regulatory system, and long history of multinational operation environment let Indonesia become the most suitable markets for COSL to implement its green field strategy with lowest psychic distance whereas, three previously discussed challenges list below are not critical:

- Relatively lower awareness of political difference among local and international operators
- Lower admittances requirements for technology and engineering assets
- Less requirements for language skills and cultural difference awareness to exporting labor and technicians

- **Integrate services contribute to business scale.**

The integrate services strategy has benefited COSL's Indonesia regional business whereas leading by drilling services segment, in forms of integration, other business lines such as well services, oilfield optimization services, marine support services, Oil chemical services increase steadily .

- **Assets management performance being recognized by more and more regional and international operators.**

Drilling Fleets available day's utilization rates has reached 100% means COSL as the Chinese State-owned company has reach certain assets management level which can provide solid foundation for overseas expansion.

Meanwhile more and more international operators start to recognize COSL's engineering assets management competences. For instance, In Indonesia Markets, one 30 years aging jack-up rig "Bohai 8 " owned and operated by COSL Drilling won one contract from Husky in Indonesia with competitive day rates in the markets. Moreover COSL's Drilling services expansion to Thailand's markets can be other approve

5.4. Acquisition of former Norwegian drilling company for Strategic purpose:

COSL acquired Former Norwegian Drilling Company Awilco for 25 million US \$ at 2008 in order to access high-end markets and technology in North Sea area which was quite a technical and managerial jump-up at that time . According to Thomson Reuters, this acquisition would be the fourth largest by Chinese NOCs to date and is the first cross country acquisition of COSL.

5.4.1 Summary of the Acquisition

Assets before acquisition at 2008 of the Former Awilco including: Three Semi-submersible rigs and one drilling package under construction; Eight 375-400 ft. Jack up Drilling rigs in operation and /or construction; two accommodation rigs under operation. After takeover by COSL in 2008, The Company was renamed as COSL Drilling Europe AS (CDE). In the five years followed by the acquisition, three semi-submersibles rigs were delivered, awarded contracts and operated on NCS sequentially, 8 Jack-Up rigs and two Accommodation rigs have continuously been operated without negative effects from the acquisition and takeover. To date, the forth Semi-submersible - rig COSLProspector whose building contract had been awarded to CIMC in December of 2011 are under construction and will be delivered in third quarter of 2014, current progress is a little ahead of schedule.

5.4.2 Engineering Assets performance after the acquisition

Rigs under operation

- COSL Pioneer: Left Shipping Yard in China on 2011.01.05, arrived Norway on April 18th. Obtained AoC on 17th June and started operation on 15th August for Statoil in the same year. COSL Pioneer is the first Semi-submersibles rig on stream after the acquisition, after the forth well drilled by the brand new rig for Statoil; the rig had been awarded "Star of the Month" for the best performance among about 30 drilling units rigs

operated for Statoil in May. Of 2012 and Feb. of 2013. Operation of the COSL Pioneer are recognized as a meaningful success for the newly start-up company.

- COSL Innovator: Left shipping yard in China on 2011.12.21, arrived Norway on 10th .March 2012 and started operation in November at the same year, COSL Innovator spent more time than Pioneer for third party equipments installation and rig commission before operation, delay partially caused by defects left by rig construction stage whereas the company's Quality Control management was not sufficient.
- COSL Promoter: left Shipping Yard in China on 15th. May 2012 and start operation in Norway for Statoil on 2nd. April 2013. The installation and commission again delayed the entire process.
- Accommodation rigs: COSLRival and COSLRigmar are continuously in operation for ConocoPhillips UK and ConocoPhillips Norway respectively.
- The other 8 jackups are in operation and managed by COSL's other subsidiary– COSL Drilling Pan – Pacific Ltd

Rig under construction: the forth Semi-submersibles-Rig (5000 ft.) COSLProspector commenced Construction in July 2012, will be delivered in September 2014.

Assets performance of the company is generally recognized as success after the acquisition, contributors are the following:

- Human Resources Localization has enable the company went through taking over without major obstacles, CDE now has 800 employees with 90% are local citizens who has gone with the company long before acquisition, local management team has also obtained enough trusts from COSL HQ to run the company fully in Norwegian way which enable new rigs to obtain AoC from PSA in short time and contracting with Statoil successfully.
- Investments of Assets are driven by market demands; CDE's three Semi-submersibles rigs are all 2500 ft. which is suitable for the Norwegian Continent Shelf. Instead of building deep water drilling rigs like Seadrill, the company building rigs targeting in the middle-water of NCS has been approved as correct decision by long-term contracts with Statoil.
- 3 identical rigs has optimized the warehouse and maintenance management, sharing of parts and equipments between three identical rigs has in large extent reduced the inventory and costs.

5.4.3 Strategic purposes of the Acquisition

COSL's engineering assets technical and managerial capacities before the acquisition were not sufficient to export services and assets to North Europe Markets on regular basis, yet to

participating in the high-end markets is a must go for the company besides its steady expansion in Pan - Pacific Region for the following strategic targets:

- Participating in high-end markets will in certain degree promote the company's global image which will contribute to the developing markets as well, this strategy has been adopted by Mr. Zhang Ruiming , the CEO of Hair Group which is the third largest home appliances manufacture worldwide, as he addressed:” We started exporting to developed markets first because if your products are good enough for consumers in Europe and in the US, you will have better products in developing markets”, this strategy has also been recognized and implemented by COSL management.
- Participating in the takeover and the management afterwards of a foreign company in developed Countries' markets will bring abundant practical experiences, knowledge and skills in the respective of international M&A, Operation Management, QHSE management, Cross cultural management etc., all of which are quite important for a company in developing markets on the way of internationalization.
- Cost and time efficiency to enlarge the technical capacities of the engineering assets, For instance:
 - Three Semi-submersible-Rigs has immediately increased the drilling water depth coverage to 2500 ft. (before the acquisition, the water depth coverage is only 20- 1500 ft. which only capable for shallow water)
 - 8 Jack-ups has also lowered COSL's averages ages of fleets from 18 years (before acquisition) to 15 years, and over 50 % fleets' age are below 10 years.
 - The acquisition has also increased the ratio of High specs fleets among the others up to 50 %.

Those technical capacities jumped up have increased COSL's business profile and bring the company step further to a new services level to the international arena

Chapter 6. Way forward - Regional assets support and management

Hub

The last step of Uppsala Model is establishing of overseas production and manufacturing units, logistic and supporting centers. With adequate experiences and knowledge of local markets, the companies are confident to start build overseas facilities to employ more local and international resources instead of mainly depending on domestic production activities, As Yip's global strategy frame work has stressed, it is important for an internationalization company to find the right place to build value creation chains to support its global markets participating. Facilities' location is the key for regional success, just like Baker Hughes' comments on this point: improper location could ruin all efforts in van, like property industry, location is the most important factors; new facilities' locations should benefit the implementation of company's global marketing strategy.

One of COSL's token activities at this stage is that the company start to build an Integrated Offshore Operation Supporting Base in Singapore - COSL (Singapore) Base, to support its business in Pan-Pacific region, Geographical advantages of the location of the base are obvious, with shortcuts to South China Sea and Strait of Malacca, the Base is on the most popular water way from east to west:

- Pan – Pacific Region: the Base can effectively support COSL's operations in Indonesia, Phillip, Malaysia and Thailand.
- South China Sea: with the short cut from one of the world's most open and stable ports in Singapore, COSL's fleets can be mobilized and demobilized to South China Sea with less costs and low risks.
- Best Intermediate Hub: Singapore is the best hub for bulking and supplies when towing Drilling Fleets from Asian to Europe through Strait of Malacca. COSL Drilling Europe As's three Semi-submersible- Rigs were all towed through Strait of Malacca and added supplies and bulks in Hub of Singapore. Therefore a Base in Singapore will provide great convenience for COSL's own logistics, assets mobilizations and demobilizations between Asia and Europe.



Figure 16 Singapore's Strategic Importance

The Supporting Base is planned to put in use at July of 2015 with providing the following functions:

a) Oversea logistics center

The industrial development has 240 meter water front with 100 meters jetty which allow at least two tags to off and up loading, 12,000 m² outdoor yards besides 6000m² indoor storage space is capable to store giant equipments and heavy materials, meanwhile are modern office building with approximately 110 offices are efficient for later 30 years usage, with those facilities, COSL (Singapore) Base become the first overseas logistics center both of COSL and CNOOC.

b) Researching and Developing center;

The R&D center in COSL (Singapore) Base will accommodate R&D activities for down-hole drilling tools and well-logging systems. COSL Oil-Tech Business Department will relocated their Research Institute partially to the Base in order to utilize Singapore's local resources and Preferential policies from the government.

c) Oil-tools maintaining;

The Base has about 6000 m² factory with two five tons overhead cranes to provide repairing and maintenance services for Oilfield equipments. This function suggests that COSL's rig and other engineering assets will not necessarily go back to China for Maintenance in the time windows which is definitely a meaningful progress in COSL's internationalization process.

d) Overseas assets management centers

Oilfield services are combinations of engineering assets selling or renting and technical, operational services based on the engineering assets. It is widely accept way to divide assets management and assets operation into two different divisions to reduce risks, COSL plan to develop COSL (Singapore) Base as its overseas assets management centers by utilizing Singapore's great advantages of customs policy and tax policies.

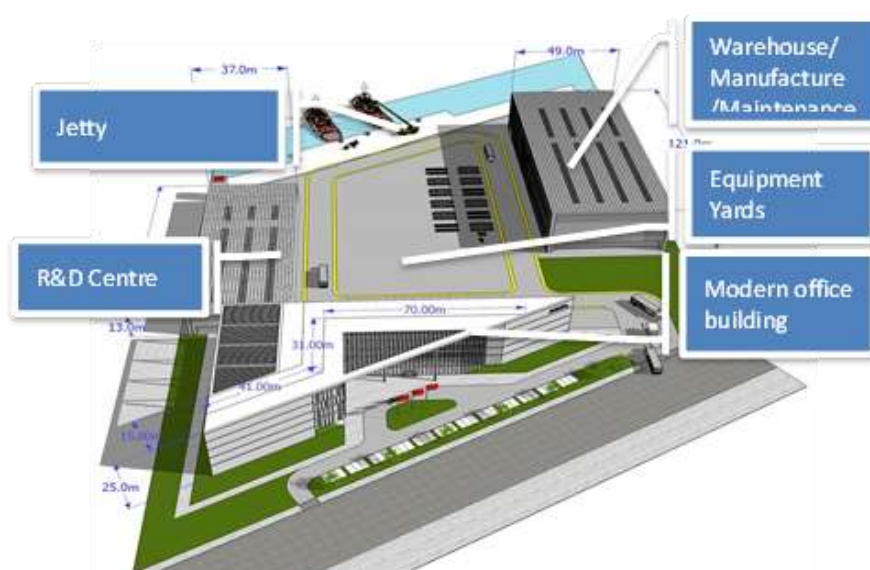


Figure 17 COSL Singapore Base

Chapter 7. Discussion

The thesis examine Major steps of COSL's international assets mobilizations and management, from which, the author are try to identify the challenges and its resolutions along with the company's internationalization process with focus on assets mobilizations.

7.1. 4 major challenges and its resolutions have been identified as follows:

- Psychic distance for COSL to overseas markets are generally high, through training international talents and enroll employees with good education, the company are now able to export managerial, technical employees as well as labors to the foreign markets. Human resources localization is also the key for overseas regional success.
- Engineering assets with relatively low technical capacities. Through acquisition of Company with high quality assets. COSL has brought their assets' technical capacities to a higher level, meanwhile investing on assets driven by markets' demands as the principle has maintain COSL's assets portfolio in good status with regarding to the company scale and its marketing participating.
- Low markets share in the high and major oilfields, again through acquisition; the company is now developing stably in North Sea markets,
- COSL haven't formed any international assets network which can be used as hot spot for regional assets management and international assets logistic center, with on stream of COSL (Singapore) Base in 2015, this can be changed significantly.

7.2. Recommendations for further steps:

- The psychic distance still cannot be ignored, besides training and enroll Chinese Employees in domestic markets, COSL as an international company should upgrade its human resources composition by enrolling and training international talents directly from overseas markets locally. A complete HR system separate from the system for Chinese domestic employees should be developed to maintain such talents pools for a global reach. Meanwhile, through the marketing exploration process, COSL as an oilfield services contractor should desalinate its connections to CNOOC group and operated fully comply with international markets rules, this may help the company to avoid political influence as a Chinese state-owned company operating internationally.
- Merge and Acquisition is still the best way for COSL to expand in high – end markets with short time and less costs. COSL's engineering assets are still insufficient both in amount and technical capacities to participant high end markets such as Deep-water regions in Gulf of Mexico and Brazil. Besides M&A of drilling companies, COSL should

also considerate M&A of those well-services providers in the markets which could bring state-of-the-art technology as well as R&D productivities to the company.

- Investing in deep water equipments is necessary for COSL to extend its service coverage to the futures of oilfield services industry; right now COSL's deep water equipments and technology are still in primary stage therefore needs more investment to reach a competitive level. Meanwhile exploration in Arctic Ocean can also be a direction for COSL investing in winterization equipments.
- Besides Base in Singapore to cover the Pan-Pacific Region, in order to form a globalized assets management network. COSL need to build more assets center along with its regional development such as in Middle East, GOM and Brazil.

7.3. Challenges confronted in writing the thesis

The challenges author confronted in writing this thesis is first to examine international assets deploying and managing with company internationalization perspectives, in nowadays, with the demands for "Just In time" delivery, assets mobilization itself are high related to marketing and operations as a whole. So the thesis content has to relate to internationalization theories and practices as well besides assets managements. Secondly COSL as an oilfield services provider in relatively small scales in developing country do not share many similarities with other Major oilfield Services Providers such as Schlumberger, Halliburton and Baker Hughes. Therefore comparative discussions are not easy to conduct in the thesis.

Chapter 8. Conclusion

The author went through the developing history of COSL from 1990s to date and found that with 50% of its engineering assets deploying aboard at 2012, the overseas revenue in that year is counted 31% of the total revenue, this can be recognized as success of engineering assets management of a Chinese State - Owned Company's overseas' operations. Meanwhile in the process, the challenges and pitfalls the company faced has always been significant due to many reasons such as significant psychic distances, backwards of industry developing level, insufficient of technical capacities and human resources, defects of the management system etc. Nevertheless the author also find through internationalized training, enrollment of highly educated personal, M&A of companies in developed markets, Green field investment in developing markets, building assets management center in places with strategically importance etc., COSL has successfully reacted to those challenges and obtained remarkable international assets management performance according to its scale in the markets.

Based on the above findings, the author has also proposed several recommendations for the company to achieve better performance in the future such as adjusting HR system to enroll more international talents locally from overseas markets; desalination of the connection with CNOOC group; More M&A investment in technology services companies besides drilling companies ; Investment in engineering assets with deep water and extreme environmental features; building more assets management centers in strategic important locations to create international assets network to support COSL's global marketing participations.

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