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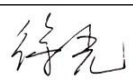
Author: Xu Guang	 (signature author)
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Acknowledgment

This master thesis is written under the knowledge I learned from the University of Stavanger. The topic is: Establishment of High-Performance teams on a platform: A case study of an operation team in COS I want to use the knowledge learned to direct my job, and it expand my eyes and really help me a lot in my job.

I would like to thank the COSL company for giving me such an unexceptionable chance to learn at the University of Stavanger. That one year experience will be my great treasure in my life, I will cherish forever. Also I hope I can utilize the knowledge to do better in my work and life.

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I would like to thank my family and friends. Thank to the support from my wife giving to me always help me to devote my mind on the learning and working. Thank to my friends learning together, I can’t forget the memories of your helps and happy times with all of you.

Abstract

As one oilfield service company, it is the final goal that to get the win-win with the customers. And during the service process, both the customers and company need high quality on the performance performed by the operation team. The performance management is an important task for the company to consider to improve the performance. High Performance management is a efficient approach that been used to achieve the goal of company.

The author organized and joined in the performance management about the operation team on the jack-up platform HYSY902. The high performance management to build the High-Performance team is organized and executed strictly by each operation team. This is one inner high performance managing progress. Standards for conducting the performance are made by the company based on the requirements on the improvement of safety management, equipment management, human sources management, customer service management etc. Those standards are the KPI for the final inspection.The operation team make the plan to comply with all the standards through analysis them. Then, executing the plan step by step until to pass the inspection by the company. But this process is a continual courses to keep improvement as the changes of inner and outer environment.

The High-Performance management focus on the quality of the performance. Following the direction of basic theories and keeping the continual improvement, the operation teams enhanced the attention on the quality to each performance, improved the competitive power, built strong teams to complete challenges in the future.

Key Words:

Performance Management; High-Performance; Standards; Continual Improvement; Quality

Content

Abbreviation

ABS – American Bureau of Shipping

CCS – China Classification Society

CNOOC – China National Offshore Oilfield Company

COSL – China Oilfield Services Limited

DNV – DET NORSKE VERITAS

JSA – Job Safety Analysis

LCC – Life Cycle Cost

PDCA – Plan Do Check Action

PMS – Preventative Maintenance System

PO – Production Optimization

PTW – Permit To Work

QHSE – Quality Healthy Safety and Environment

SOLAS – Safety of Life At Sea

STOP – Safety Training Observation Program

TQM – Total Quality Management

Chapter 1　Introduction

1.1 Background introduction

China Oilfield Services Limited (COSL) is an integrated oilfield service solution provider with nearly 50 years of experience in offshore operation. COSL listed in both shanghai and the HK Stock Exchange (601808.SS/2883.HK).With its four major business segments of geophysical services, drilling services, well services and marine & transportation services covering the exploration, development and production phases of oil and gas industry, COSL is an all-round offshore oilfield service company with integrated functions and bundled service chain in China and even in the world.

COSL possesses the largest fleet of offshore oilfield services facilities in China. To the end of 2013 , COSL operated 40 drilling rigs of which 30 are jack-up drilling rigs and 10 are semi-submersible drilling rigs, 2 accommodation rigs and 4 module rigs. In addition, COSL also owns and operates the largest and most diverse fleets in offshore China, including 69 working vessels and 3 oil tankers, 4 chemical carriers,7 seismic vessels,2 OBC teams, 7 surveying vessels, and a vast array of modern facilities and equipment for logging, drilling fluids, directional drilling, cementing and well work-over services, including FCT （Formation Characteristic Tool）, FET （Formation Evaluation Tool）, LWD （Logging-While-Drilling） and ERSC （ELIS Rotary Sidewall Coring Tool）, etc.

COSL can provide customers with operation services for a single business and integrated package & turnkey services as well. COSL's services not only cover offshore China but also extend to Southeast Asia, Australia, Middle East, America, North Africa, and North Europe etc.

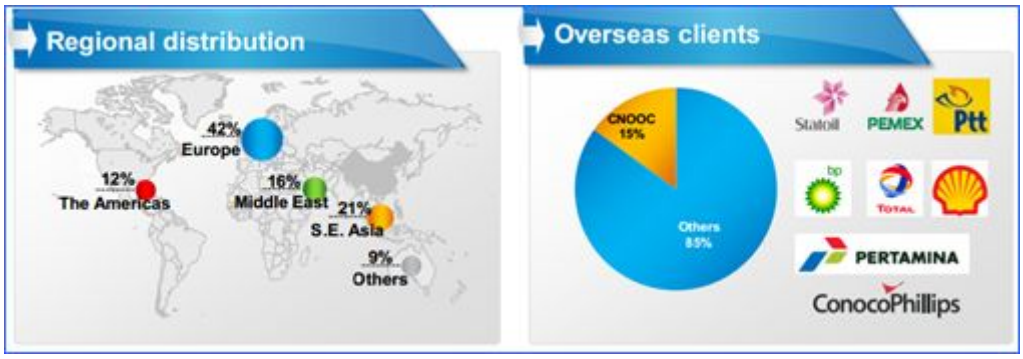

Figure 1　regional distribution and overseas clients of COSL(COSL, 2014b)

COSL employees always adhere to the international QHSE standards and commit themselves to providing first-class services for customers. COSL has obtained the International Safety Management (ISM) certifications, and the QHSE Management System certificates issued by DNV

in compliance with ISO9001, ISO14001 and OHSAS18001 standards.

With the concept “ALWAYS DO BETTER”, COSL will endeavor to provide safe, high-quality, high-efficiency, and valued services for domestic and international customers to realize win-win with shareholders, customers, employees and partners and head towards being one of the world's top-notch oilfield service companies(COSL, 2014a).

There are several divisions in COSL, one of them is Production Optimization Division (PO division). “It is your single contact point for production management, well completion and well intervention to maximize and extend production for the lift of the reservoir. It includes reservoir analysis, fabrication and sales, project design and on site services. It’s operations has successfully expanded to Middle East and the Asia-Pacific, including Iraq, Indonesia, Myanmar and other countries”(COSL, 2014c). As the development of the PO, the business is around the world. There are many similar operation teams are working at the china sea and also other foreign seas. The business competence is not only the price advancement but the performance of the service team .

The PO division starts the “High-Performance Team-building” program from 2012, in order to improve the performance of safety management, equipment management, custom service management , employee training and learning. It is a long term program that will enhance the basics of each team’s ability , improve the service performance for the customers , the working ability of the employees, and keep the high level control to the QHSE.

1.2 Scope and objective of the thesis

The author work at COSL for 8 years and observe the development of the PO division. The company take many ways to ask the operation teams to improve the performance.Many programs had been done such as “Quality Year”, “Safety Year”, “Execution Year” and some other programs. At each program the Division made the requirement on one specific aspect that all the operation teams should achieve. The operation teams on platform took practices and metrics to complete the requirements. Several years through those programs the Division gained a well development on the operation team management .

The High-Performance team building program is the one that has been taken for 2 years, and get some successful experience. The author joined in and manage the program by himself. Through the operation, the author find this is a efficient way to fully improve the performance on the platform. The study is based on the platform HYSY902.

By the studying, the author find the common theory used in the establishment of the High-Performance team at different platforms and how to do the program. It is guideline for the other operation team to build the High-Performance team.

1.3 Limitation of thesis

Performance management is a big tasks and many different theories and books are about such similar content. This thesis mainly study the platforms of PO division at the BoHai Bay. It can be used at other area according the similar condition.

The author works on the platform HYSY902 which is a supporting platform after he finished the study at university. The data collection and analysis is taken on the platform and off-duty time. The analysis may not so sufficient due to the different understanding to the knowledge by the author.

When to apply the thesis to other platform, the different environment should be fully considered. But the thesis has the basic instruction on how the establish the High-Performance team.

1.4 Structure of the thesis

The thesis is one case study according to the experience and knowledge of the author. It is about the reason why the company launch the High-Performance team building program. The theories that the author used in the operation and guided the operations on the platform. The implementation of the approaches that the author used. Discussion and conclusion from the study.

Chapter 2 State of Performance management

2.1 Motivation for the High-Performance management

The Production Optimization Division was established at 2006 with only 11 teams for the oil platform services, and develop to 4 operation company with more than 2500 people at year 2014. The PO division want to improve the team performance from the beginning,

Under the concept " always do better" of COSL, the PO find there are still many aspects need be improved on the safety management, equipment management, services management, human source management etc. The COSL company has carried out the High-Performance management at other divisions, the PO division learned the program and take measures to implement in all the operation teams. "High-Performance Team building" campaign started from 2012. The activities mainly took by the operation teams on the platform, after two years developing there are 4 operation teams win the "High-Performance Team" honorary title.

The program is still carrying out at PO division, through the High-Performance management program the division want to make all the operation teams the achieve the criteria and more operation team get the "High-Performance Team" honorary title, finally to improve the performance management and the competitive of the PO division.

To build a High-Performance activity first need three fundamentals(Christopher and Thor, 1993):

1. Know your operation - assess strengths and weakness. Make the analysis about the work process steps and practices, find the critical performance measurements used.

2. Know industry leaders and competitors - seek the strength and weakness of the leaders and competitors, make the standard that want to achieve.

3. Incorporate the best and gain superiority - emulate the strengths of the best and go beyond.

The COSL company use the approach that is internal High-Performance management. It is the comparison of practices between similar operations within a firm. One distinct benefit of this type of High-Performance is that it forces documentation of the work process, in addition to uncovering best practices(Christopher and Thor, 1993). The 5 steps also in the process of internal High-Performance, they are planning, analysis, integrity, action, maturity.

Through the establishment of the High-performance team the company want to improve the performance mainly on:

- Safety management: Lower the rate on incident and accident; increase the ability of identify

the risk and decrease it; increase the skills on the safety operation; etc.

- Equipment maintenance management: lower the down-time; keep the equipment in the safe condition; optimize the spare parts and cost on them; increase the operation skill of the engineers and etc.

- Working area management:: keep clean and tidy working area; keep safe working area; everyone follow the regulations; save the space on the warehouse and etc.

- Customer service: serve satisfaction to the customers; avoid the complaint;build the well reputation for the company; etc.

- Learning and training: make a atmosphere of learning; increase the work ability; increase the knowledge of everyone;etc..

2.2 COSL framework for High-performance teams

The "High-Performance team building" campaign started from 2012 among all the operation teams of PO division. This campaign has the characteristics of COSL company. The division made up the standards 7 aspects totally 282 articles on the safety production, equipment and material management, manpower management , customer service etc The campaign evaluation group was build to check and evaluate each team's performance.

The standards are equal to 100 scores totally. The campaign evaluation group consists of different department will inspect the performance on the platform an give the scores according each standard. The operation team will pass the evaluation if it get at least 75 and reach "High-Performance team" level if it get 85, otherwise it will not pass the evaluation.

Firstly, the PO division made up the High-Performance standards through the discussion by all the involved department, and gathered on evaluation criteria including 7 aspects, 282 sub articles, the criteria are the standards that the company want each team can achieve so that the performance will be improved during this campaign.. The criteria are sent to each operation teams after made to let them learn and feedback the questions on per criteria. It took 3 months to let everyone understand these standards. Each team on the platform understand the standards and find the gaps between the condition on site and the standards, analysis the gaps and make the measures to fill the gaps; apply the different management theories to support the measures, make detailed regulations to manage the daily operation; execute the measures step by step to improve the performance, recheck the job by themselves; after about one year building, once the team find the gaps has been reduced, applying for the evaluation from the division office; the evaluation group come to the platform and inspect follow each criteria strictly. If the results is satisfied with the requirement of the High-Performance team, the team will be rewarded the "High-Performance team"; otherwise, the team will be asked to keep the improvement until next time to be evaluated.

And the “High-Performance team” is required to accept the annual inspection to check whether it can keep the performance. This a continual progress to improve the performance of the operation team on the platform (Figure 2).

During the campaign, the team building is the basic that concerned with the success. I studied the case of the High-Performance platform Hai Yang Shi You 902, it is clear that a strong team is so important to achieve the goals in the operation.

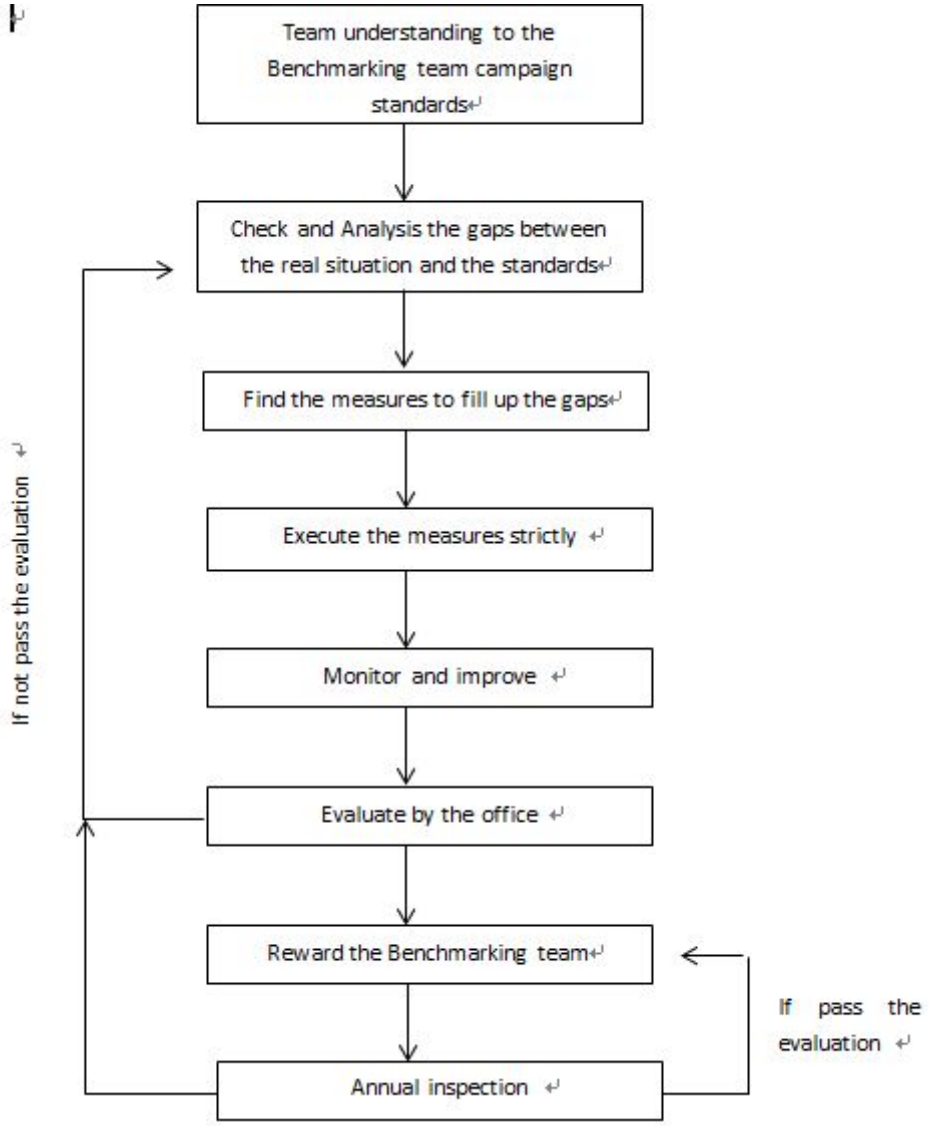

Figure 2 The flow chart to launch the campaign on platform

2.3 Theoretical overview

To well manage the High-Performance program, the company needs the advanced theories as the basic to support the operation. China has learned from the foreign companies many years ago, Chinese want to use those theories and compare them with the real situation in the internal society

to find the way that can be suit for the development of Chinese company.

Below are the basics that the author used and summarized from the application of the High-Performance program of the PO division compared with the scientific knowledge.

2.3.1 Theory on the performance management

The whole High-Performance management course is the same as performance management among the operation of each phase of the High-Performance management. Four steps in the development and deployment of performance management, they are(Andy D. Neely, 2002):

- Design
- Plan and Build
- Implement and operate
- Refresh

The designing processes should identify the real measures that the company need. Make it clear what are the reasons for the measures and so about the original parts of the measurement. When the measures are design, whether the measures are good or not, we need 10 tests: the truth test, the focus test, the relevance test, the consistency test, the access test, the clarity test, the so-what test, the timeless test, the cost test, the gaming test.

After the measures designed, the manager should make the measures be used in the employees daily job to make the measurement skills show the ability to well improve the performance or well manage the employees. To well introduce the measures to the employees, managers should communicate with the employees about the measures about the measure. How to collect the data, how to make the data easily be read, and how to make the data have the ability in leading the way to work, need the managers to do the work for implementing. There are several steps of planning to do as following : step 1: identify redundant measures and process, step 2: define new reports, data sources and analysis, step 3: design reporting presentation and distribution, step 4: confirm new measures owners, users and providers, step 5: agree long-term and short-term performance targets, step 6: plan modified performance management processes, step 7: develop critical path implantation plan, step 8: assess deployment cost/benefit and risk impacts, step 9: specify education and communication requirements.

To well implement and operate the measures in the practice, the manager should do the next jobs: the managers should not just keep focus on the data from the measures, they should use beyond the measurement to management, apply the data to gain understanding and learning with the employees, check data veracity, monitor and analyze performance trends/ correlations and link to

human performance programs.

The measures used in the management are not forever, they should be changed as the need of the new environment and the improvement of the people's quality. The measurement management should be a long developing project to help the organization of the company.

2.3.2 Safety Management

As we know that the oil and gas industry is full of high risk, there are many disasters happened on the offshore platform in history. The study on the risk management on the oil and gas production is popular around the world not only in the institutes but the oil and gas companies. The definition of risk has many different ways, risk can be known as the uncertainty consequence caused by the uncertainty event. Risk management is defined as all measures and activities carried out to manage risk(Aven, 2009). The employees on the platform should identify the risk and find the way to control the hazard or reduce the consequence if real accident happened. To make the risk analysis, there are many efficient methods (Aven, 2009):

Simplified risk analysis:

- Information methods: Brain storm, Checklists etc.

Standard risk analysis

- Qualitative or Quantitative
- Workshops
- Formalized methods: SJA, HAZOP etc.
- Model-based risk analysis
- Fault tree analysis , Event tree analysis, etc

On the site we usually use the different way to discuss and analysis the risk according to the situation and different tasks. The information from the operation and experiences are gathered for the discussion and analysis for the risk according to the specific job. Following the process as below:

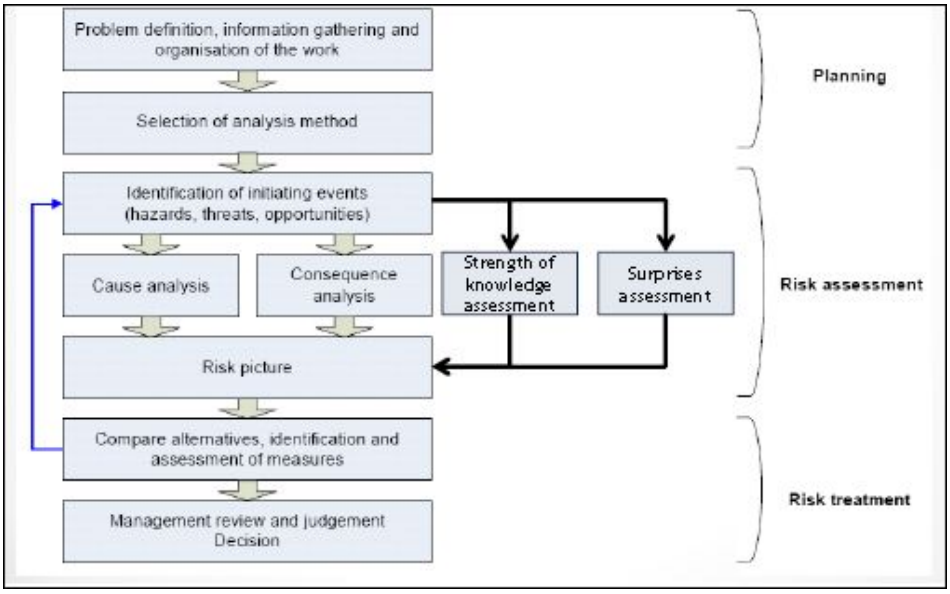

Figure 3 The risk analysis process (Aven, 2013)

The course for everyone of the team to understand the theory should take long time training and supervise. Besides the risk training, the team organizes the training and learning on how to use the risk analysis tools, and training on the standard procedures of per different job. The feedback from the training and learn program give the instruction on the improvement of the risk management job, the managers can know the level of the team, and what measures should be taken to improve the performance. Through the risk analysis can form the picture for the risk control, the team members on the platform follow the use the risk analysis methods and take the proper measures to perform the operation.

2.3.3 Preventive maintenance management

As a service company with specific equipment, it is very important to provide the continuous service with low down-time to the equipment. So the maintenance should be well concerned.

The maintenance management “it deals with business management skills used for integrating: man, machine, technologies, etc. In line with corporate policies and objectives. Maintenance is defined as a combination of all technical, administrative and managerial actions, including supervision actions, during life cycle of an item intended to retain it in, or restore it to, a state in which it can perform the required function”(Markeset, 2014). The equipment from the design to be operated may have probability on the system failures in the design phase, manufacturing phase, operation phase, or maintenance phase.

For the operation on the platform, the workers only meet the operation and maintenance phases, they have less chance to affect the design and manufacture of each equipment. The normal operation has high influence to the performance of the team. If there is down time caused by the

problem of equipment, bad influence will come out to the company. The cost on the repair, the influence to the market, the satisfaction from the customers etc are all the concern by the managers of company. According to IEV 191-02-05,2005 availability is the ability of an item to be in a state to perform a required function under given condition at a given instant of time or over a given time interval, assuming that the required eternal resources are provided.

$$A = \frac{Uptime}{Uptime + Downtime} \quad \text{Eq 1}$$

The service company should supply good services to customer or clients. Especially for the drilling and support platform, the reliability of the equipment has affected on the satisfactory of service, which is extending the Uptime as long as possible(according to Eq 1, A=Availability). There will be downtime caused from the problem in equipment, the appearance of the downtime may be caused by different reasons. Anyway downtime is not the one that company wants to see during the operation. But we know the bathtub curve that can indicate the performance of the equipment to the time. There is failure in the life cycle of the equipment, what the service team should do is find the failure early before it failed, and maintenance on the equipment to extend the life or prevent the failure unexpected.

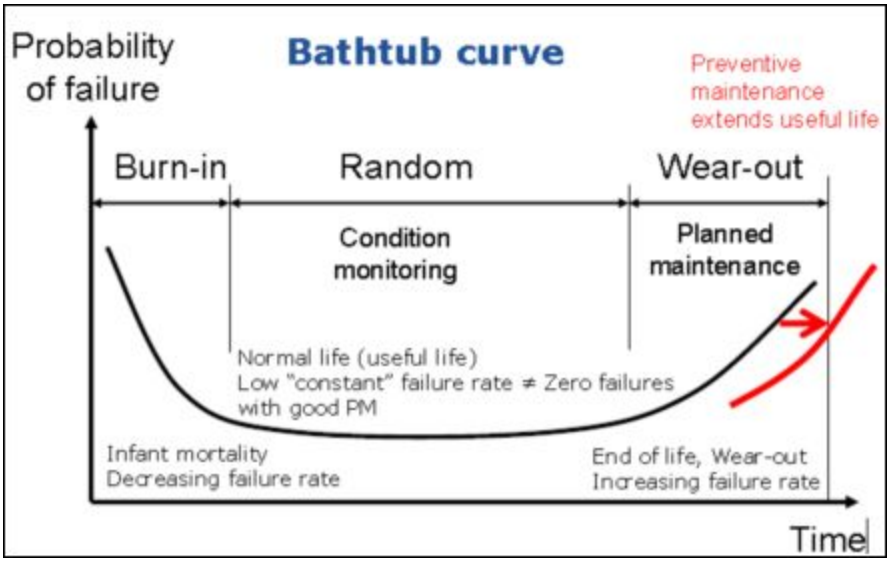

Figure 4 Bathtub Curve (Markeset, 2014)

The main purpose of maintenance is to reduced business risks. From the consideration of QHSE, the maintenance gives the chance to improve the performance and reduce the risks:

- Quality improvement. Reduce the downtime. the service to the customers can fulfill the requirement. The longer useful life can save the cost for the company, the money can be used for the upgrade of the equipment.

- Health improvement. The equipment in the bad running condition can cause noising, smoke which is harmful to the human health. Through the maintenance to keep the equipment in well working condition that can mitigate that influence.

- Safety improvement. The wear out of the equipment may cause mechanical failure, the result may broken the equipment itself, cause fire, mechanical injure to people. Through the maintenance to monitor and take measures to deal with the problems. The precaution can be find before such mechanical failures.

- Environment improvement. The waste caused by the failure of equipment can pollute the environment, such as smoke, dirty oil and water, metal debris etc. The maintenance can reduce the failure and find the failure before it failed.

Maintenance type has different ways as below. The PO division has a system named PMS (preventative maintenance system) to manage the maintenance work on the platform. The engineers follow the PMS and finish the task from it, a report will be sent to the onshore office for monitoring the utility of this system.

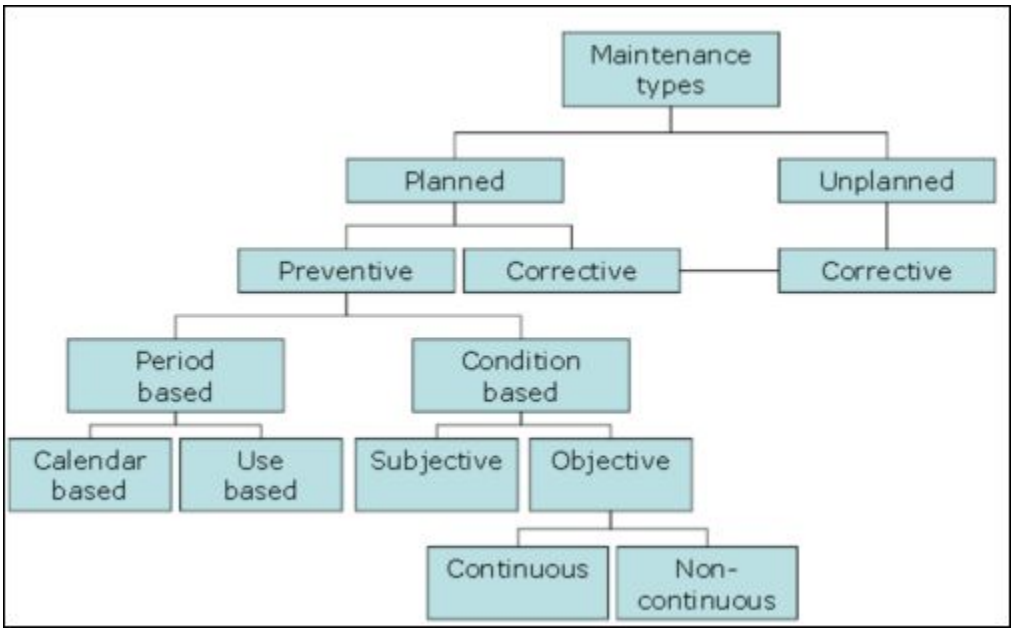

Figure 5 Maintenance types (Markeset, 2014)

2.3.4 “5S” management

The size of the platform that the author works is not big, the space on the working area including the warehouse are limited. Before the program, the team also try to make the platform tidy and clean, but it was always be found that several days later the working area was massed again.

On the platform, there is one way for working area management is popular called “5S” management. The 5S are “SEIRI” “SEITON” “SEISO” “SEIKETSU” and “SHITSUKE”(MBAlib, 2014). 5S is a basic, fundamental, systematic approach for productivity, quality and safety improvement in all types of business. The 5S management started in Japan around 1955 with the first 2S to focus on the work site and safety dealing with the relationships between the objects and spaces at the beginning, the other 3S emerged after the requirement on the production and quality, until 1986 the 5S spread from Japan to other countries and become popular.

The content of the 5S include five steps to achieve the goals of the company on the management to position and people. The methods to do the different steps are as follows:

SEIRI: Identify the useful things and useless things, pick up the useful ones and get rid of the useless ones. Through this step can make more working spaces to store the useful materials, parts, can avoid the misusing to the wrong or bad materials, helps to manage the inventory. To do well in this step, there should be a standard for the useful and useless, and then check the working site everywhere even the corners hard to reach, deal with the useless materials in a proper way, store the useful materials in the right location depend on the amount and frequency of using.

SEITON: sort out the materials and parts according to its different properties and function, make clear mark to identify them. Through this step can save time to search for a specific material, it can make the working site tidily. To do well in this step requiring to make clear about the location of all the materials; make the regulations for the ways to store the materials and the amount for different materials; put the marks on the location and materials.

SEISO: sweep the working area and keep clean. Through this step can make the working site clean and shinning, workers have comfortable feeling to the working area. To do well in this step requiring to establish the rules for the specific person taking responsibility for the specific area; make the standards for the sweeping; find the roots of pollution and disposal deeply; and inspect the working area and improve periodically

SEIKETSU: make proper regulations for the above steps. Through this step can make the people understand the job and follow the regulations. To do well in this step requiring to make the comprehensive and scientific regulations, implementation, inspect periodically.

SHITSUKE: the spirit perspective building for all the employees. Through this step can help employees raise the habit to follow the regulations on the 5S management, raise the manners and compliance to the rules. To do well in this step need long term endeavor to achieve, need the TQM to build the atmosphere for well performance in the 5S management from leaders to the commons.

The 5S is applying at the manufacturing and other services industry to improve the working environment, enhance the thinking way of the employee and assist to the implementation of the TQM. The 5S management mainly focuses on the activities for managing the materials, equipment and people. Through the 5S the company can get the improvement on:

- Improve the image of the company
- Improve the production efficiency
- Reduce the down time, increase quality
- Enhance the safety environment, reduce the potential hazard
- Raise the habit on saving, cut the cost
- Improve the company spirit, form the company culture

2.3.5 Total Quality Management

The service company wants to deliver the service as per the customers' needs, the development for improving the service is a hard trip. Now more and more company uses the Total Quality Management (TQM) to increase the quality of products, internal operations and service to the customers. Total Quality is one useful and popular manager concept around the world. The simplest definition of Total Quality is(Christopher and Thor, 1993):

"The unyielding and continually improving effort by everyone in an organization to understand, meet, and exceed the expectations of customers."

Total Quality management focus on the customers' need, from the manager to the common employee to improve the service compliance with the standards that the company made for performance improvement, and the course is continue improved. During the several cores of the Total Quality management (Christopher and Thor, 1993), I find these are used in the COSL as below:

1.Understanding and fulfilling the needs of customers is the best and only lasing means to business success. The PO division in COSL has the business on the drilling/workover/completion, simulation operation, completion tools manufacturing. The operation teams on the platform face the need from the customer's company. They follow the service procedures and complete the everyday tasks from the first party. The customers want the jobs can be completed smoothly and safely and complied with the designed requirement. During the operation the customers focus on the QHSE management, equipment efficiency, and human power improvement, which all the aspects that PO and the operation teams should pay high attention to.

2. Leadership of Total Quality is the responsibility of top management of any organization or enterprise. This core is fit to the traditional Chinese management culture, the trend of one issues is controlled from the top and delivered to the bottom due to the relatively restrict hierarchy. The Total Quality management demand the manager of the department involved in the quality

improvement program as a leader, coach and trainers not only the enforcer. Form the upper to the lower level people are all involved in the program, follow the regulations and find ways to improve and provide services to the customers.

3. Continue to improve the processes to achieve the final company goals. The Total Quality management process is not a short time term and not a one way to end path. It needs improvement through the summary of information gathered during the implementation. There is a well known method of continual process improvement called Deming PDCA cycle (figure 6). That is Plan-Do-Check-Action, it need the team to analysis the process and find the measures to improve. The COSL has use this method to direct the work for several years and got expected results.

4. Continual learning and training. The requirement from the customer will not stand still, the competition between the competitors can't stop. The Total Quality management can't continue if there is no continual learning and training. The techniques and requirement changing by time, the environment for the company is also changed, every year new employees join in the company. All those dynamic change need the company take measures to continue the learning and training program in order to keep improvement.

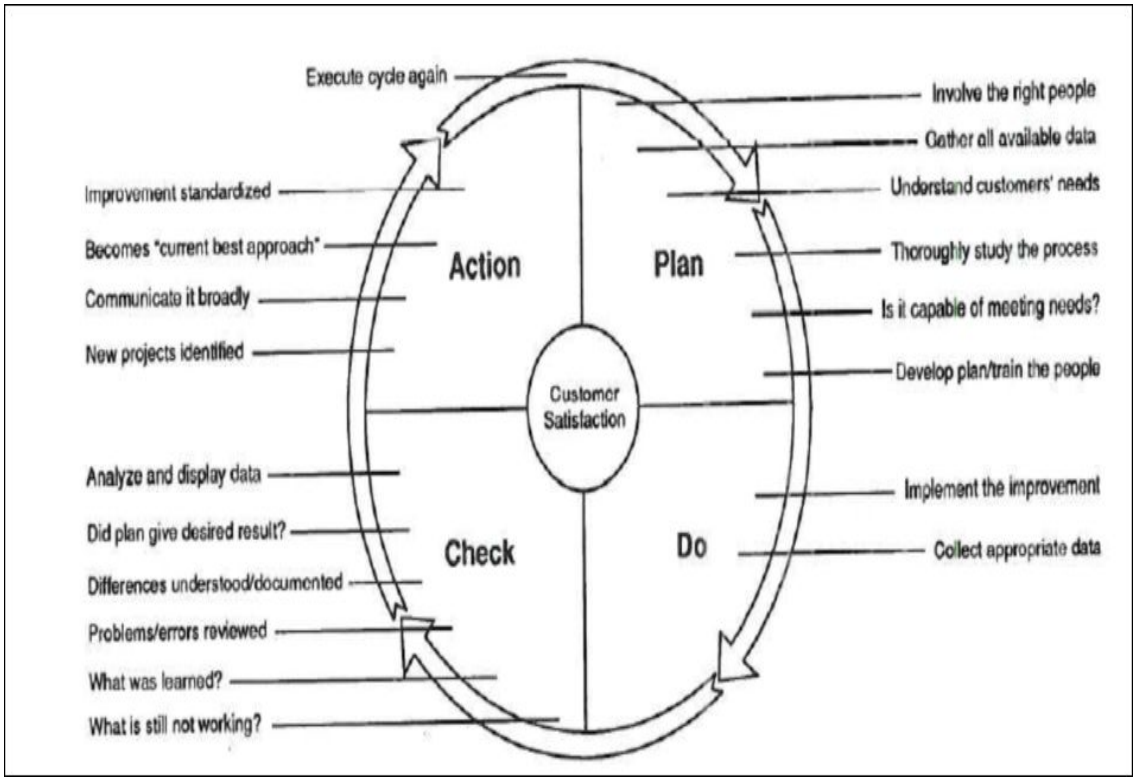

Figure 6 The P-D-C-A cycle (Christopher and Thor, 1993)

Chapter 3　Case description

I work at Hai Yang Shi You 902 (HYSY902) after I studied from University of Stavanger. I used my knowledge to conduct the performance management. After several months hard work, the platform become the second “High-Performance Team” of PO division at 2014.

3.1 Basic specification of HYSY902

The HYSY902 is a self-elevating Units is designed in accordance to the latest requirements of American Bureau of Shipping (ABS) Rules and China Classification Society (CCS) Rules for building and classing Mobile Offshore Drilling Units (MODU) for a self-elevating Drilling Units.

HYSY902 is built at 2010, which is set with high power electric supplying system, completed mud circulation system, advanced propelling and navigation system, and large tonnage lifting appliances. It can provide comprehensive supports to the customers on drilling/ workover/ completion operation, simulation operation, accommodation, large cargo deck etc.

Main dimension of HYSY902:

- Full length： 59.131M; Hull length：45.415M; Hull width：42.672M; Hull depth：6.270M; Leg length：80.772M; Pile shoe edge length：11.937M
- 4 Main diesel engine （ 4ea CATERPILLAR 3512B ）： 1200KW/EACH; 1 Emergency diesel engine （ 1ea CATERPILLAR 3412C）: 386KW
- Main Propeller （3 ea SRP 1010FP）： Operating voltage 600V　Power 900KW ; Bow thruster（1 ea STT 2 CP ）： Operating voltage 600V　Power 450KW
- Main crane1set: Workload：30T～180T; Auxiliary crane 1set: SWL：35T

Figure 7 Hai Yang Shi You 902 Platform at standby location

3.2 The operation team on HYSY902

HYSY902 has a operation team who provide the service to the customers. The organization structure as below:

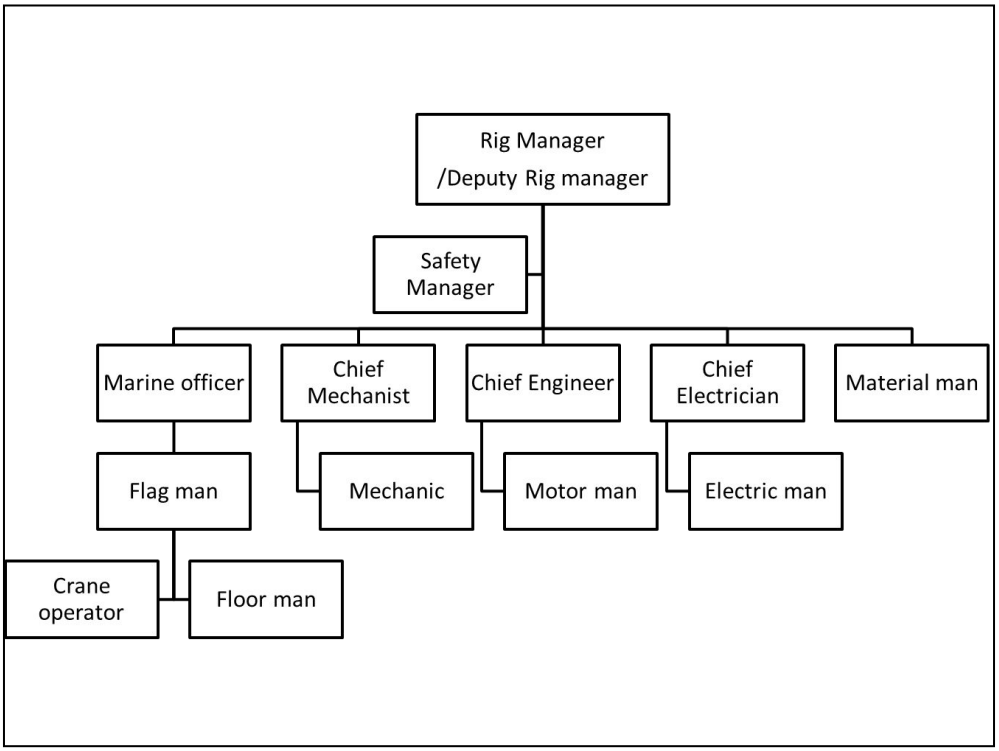

Figure 8 Organization structure of HYSY902

Under the leading of rig manager, the whole team finish the daily job according to their different roles. The lower level person has the responsibility to take the order and report to the higher level.

3.3 Steps to establish a High-performance team

3.3.1 Focusing on safety control

For the operation on the platform, the team should comply with all the regulations and rules made by the government and the company. Any violation to those will be punished.

The safety management is so important that the score distribution is high and there are also veto standards is any one of the items happened as below, the team will lose the chance for the “High-Performance team”:

No.	Inspection Items	Standards	Inspection Details
1	Fatal accident (people lost considered as fatal)	No such accident include 5 years before inspection	Check records, ask the relative person
2	Permanent lose faculty accident of human	No such accident include 3 years before inspection	Check records, ask the relative person
3	Serious injured accident	No such accident include3 years before inspection	Check records, ask the relative person
4	Fire accident	No such accident include 2 years before inspection	Check records, ask the relative person
5	Environment pollution accident	No such accident include 3 years before inspection	Check records, ask the relative person
6	Conceal to report or hide the truth of accident	No such accident include 1 years before inspection	Check records, ask the relative person

Table 1 Veto items in safety management standards

3.3.1.1 Comply with the regulations and rules

The operation team on the platform HYSY902 always organizes the employees to learn and understand the regulations of government and company. Once you know these you will know what is right and wrong. These are the guidelines for the safety and other jobs on the platform. Some of the regulations as below:

- Safety production law of PRC
- Environmental protection law of PRC
- SOLAS
- Regulations of ABS and CCS
- CNOOC regulations on safety
- COSL QHSE management system
- etc.

3.3.1.2 Understand the standards on safety management

No	Inspection Items	Standards	Inspection Details
1	Accident, incident management	Management procedures on accident and incident.	Whether socialization the “safety alert”
			Whether report the accident/incident in time
2	Safety meeting	Management rules on safety meeting	Whether hold the crew change meeting, pre-job meeting, weekly safety meeting etc.
			Whether talk the measures for risk control according to the safety alert.
3	Health management	Management procedures of employee health	Whether provide proper PPE and measures to help to protect employees health
			Whether publish the vocational health test result
			Whether do the training on vocational health
4	JSA management	Management rules on JSA	Whether do the JSA before each job
			Whether the work steps are clearly identified
			Whether the JSA hanging at the working site
			Whether redo JSA when working condition change
			Whether update the JSA with the time
			Whether do the JSA training to the team members
5	STOP management	Management rules on STOP	Whether do the STOP training to the team members
			Whether do the STOP analysis every week
			Whether improve the performance according to the STOP observations
6	PTW management	Management rules on PTW	Whether strictly execute the PTW
			Whether the PTW combined with the JSA
			Whether one job related with only one PTW
...			

Table 2 Parts of Standards in Safety Management aspects

3.3.1.3 Execute PTW and JSA before each work

On the practice at platform, the implementation of safety measures is one important chain for the risk control. There are safety supervisors at day and night shift to supervise the execution of the risk control measures. Before every job, the PTW (Permit To Work) is necessary and it is approved by the onsite controller, supervisor and Rig Manager. According the types of work, there is Hot Work PTW, Cold Work PTW, Confined Space PTW etc. It is easy to known what kinds of job will be done one day and to stop the job if any conflicts between the jobs.

There is a pre-job safety meeting before the shift take over the job to talk about the job task with the people who will take over the job. On the pre-job safety meeting, JSA is discussed by all the involved people, and make sure that everyone understands the hazard in the job and the ways how to control it. There will be a JSA sheet that needs be signed by all the involved people.

Through the PTW and JSA everyone can know the details of the job, how to do it, what the hazards in each step, what kinds of protection methods should be taken to control the hazard, what is the improvement after the job etc. Everyone can talk about his opinion and question during the JSA meeting, also this is a team building time to let all the team members think together, talk together and work together.

3.3.1.4 Use STOP cards to monitor the safety performance

On the platform it is encouraged to write the STOP card, and it is useful in the improvement of safety performance. STOP is the acronym of Safety Training Observation Program which is developed and used firstly from DuPont company. When anyone find the safe or unsafe observations can write it down. The safety supervisor collects the STOP cards every week and analysis all the observation.

Through the STOP cards analysis, we can find what kinds of unsafe are found, so the proper solutions will be taken to control such performances. And also we can find on which aspects the employees have done a good job, improvement can be got from the numbers.

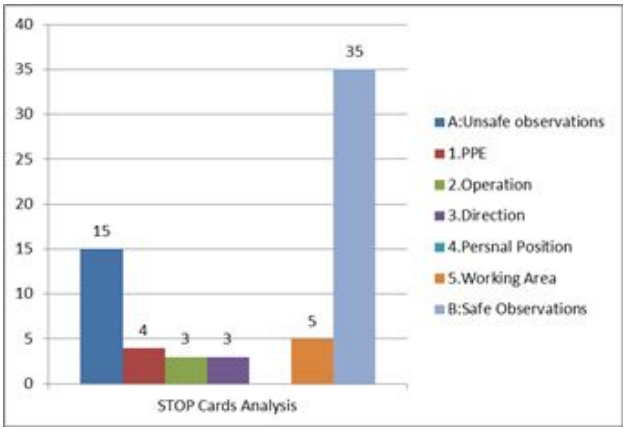

Figure 9 Example of STOP cards analysis

3.3.1.5 Decrease the human error during the job

People are the first factors should be considered if the incident happened. From the easy hand tools using to the complex equipment using, people are in the roles of designing the tools, make rules how to use the tools, make protection barriers to protect the users and others, and use the tools and equipment. We are not idealist, there are limitations exist in the thinking and action of people, all this makes some risks occurred without expectation. Here are two errors that used to describe the risk errors:

"Active errors" result in almost instantly observable effects(Jones, 1995). Such as when a car driver find a block in front of him, but he is a new driver, he incorrectly touches the accelerator instead of brake, the car hits the block and he gets injured.

"Latent errors" have consequences that are not expressed or realized for a relatively long time. Latent errors are not observed until they combine with other factors (Jones, 1995). Such as a car driver has an old car, which brake line was used long time without inspection and it is worn badly. The driver does not realize that situation. When he sees a block in front of him, he touches the brake, but the control line break down. He gets serious injured and the car is worn out.

In order to eliminate the affect by the human factors, the team on the platform takes measures according to these two errors(J.P.Liyanage, 2014).

- The first one is training and exercising to all the employees to improve the skill on operation and the awareness on identifying the hazards during the job. There is a data base in PO division, all the incidents and accidents are gathered and analyzed. The data base is the sources for training and learning.

- And the second way is to keep do well in the equipment monitoring and maintenance, find the errors on the equipment, fix it in time. The safety of the equipment is the essential safety to the jobs.

3.3.2 Conduct PMS and Cost optimization

3.3.2.1 Understand the standards on equipment management

No	Inspection Items	Standards	Inspection Details
1	Equipment integrity level	Management rules on equipment	The average equipment integrity whether above 99%

		management and evaluation	
2	PMS management	Management regulations on equipment operation and management	Whether the PMS cover all the equipment and facilities.
			Whether do the PM effectively and efficiently
			Whether update the PMS due the environment change
			Whether conduct the close circuit management
			Whether inspect the PM condition by the team leader
3	Operation	Management regulations on equipment operation	Whether make the operation procedures before run the equipment
			Whether conduce the check list everyday
			Whether fill the record everyday carefully
			Whether down-time happen
4	Consumption management	Implementation rules on Materials management	Whether the daily consumption below the designed index
			Consumption rate below the PO index
5	Inventory management	Implementation rules on the materials management	Whether the materials bill errors <= 5%
			Whether the closed circuit is implemented
			Whether conduct the inventory analysis
			Whether keep clean and safe at the storage
			Whether easy to find the wanted parts
...			

Table 3 Parts of Standards in Equipment and Materials Management aspects

3.3.2.2 Monitoring and Maintenance keeps Equipment in high efficiency

The HYSY902 platform as a support jack-up platform has the ability to self-navigation at short distance such as moving among production platforms in the same oil field. The spaces for the equipment is limited, it increases the difficulty when monitoring and maintenance to them. But the team on the platform overcomes the difficulties and make PM plan for all the equipment that can

fit for the requirements.

I worked with the engineers on the platform to complete the maintenance. There is a PMS (PM system) to manage and supervise such job. The engineers on mechanical and electrical conduct the PM check list everyday. There is weekly check and monthly check, running time record check and so on. Fixing any problem after found.

The design of the platform is also important. The critical equipment are all set pairs, that means one normally in running condition, the other one is back up one. Through the carefully operation and maintenance can keep the equipment in good condition.

3.3.2.3 Inventory analysis on platform

Inventory management is used to control the amount of materials in order to optimize the storage capability to avoid the shortage or waste. Too much inventory in the storage may increase the store cost and the risk. Too less inventory may cause the down-time as short of spare parts, such condition may not only increase the potential outlay for purchasing the urgent spare parts, but also impact the reputation of the company and lose the customer and possible market.

We need spare parts to repair the equipment, but we can't store all the spare parts on the platform according to the storage spaces and the cost. The NPV (net present value) is used to decide when purchasing the equipment and the spare parts. And inventory analysis help to make the optimization for making the order depend on the consumption amount and time frequency, the cost, the procurement time.

To calculate the spare parts logistics cost, we shall start by analyzing the most relevant control characteristics: criticality, specificity, demand and value. The criticality of a part is related to the consequences caused by the failure of a part on the process in case a replacement is not readily available, and hence it could be called as process criticality. The specificity of a part is another control characteristic specific to maintenance spare parts. The demand pattern of parts includes the aspects of volume and predictability. The value of a part is a common control characteristic to all materials, and high value makes stocking a non-attractive solution for any party in the logistics chain(HUISKONEN, 2001).

Figure 10 The inventory on the HYSY902

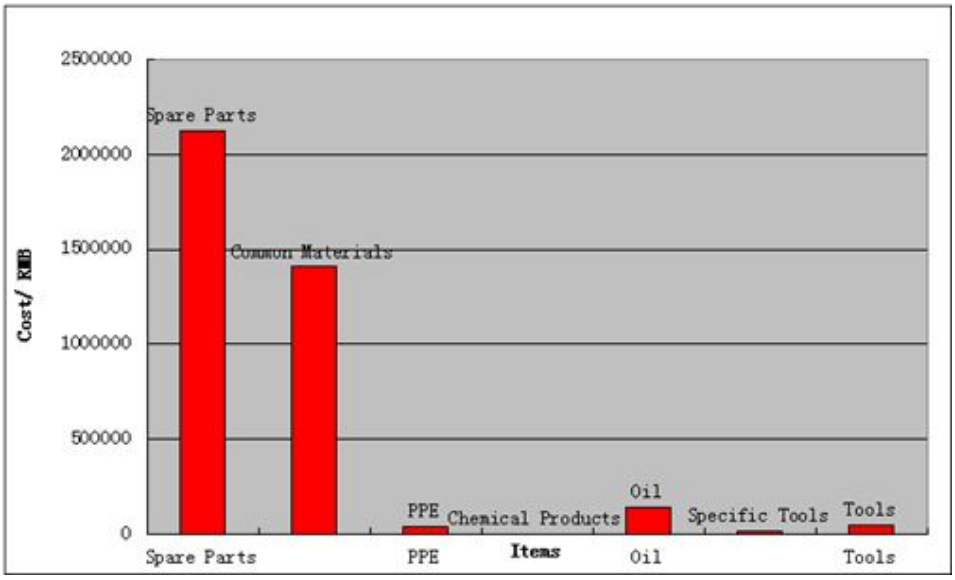

Figure 11 Cost analysis of inventory at September 2014

3.3.2.4 Cost optimization on procurement

At the condition of cost control of PO division, the procurement of the equipment or spare parts should be well considered to get the long time usage with lower cost.

I use the Life-cycle cost to do the analysis for making the decision to purchase the equipment and spare parts.

Life-cycle cost (LCC) analysis is a tool to determine the most cost-effective option among different competing alternatives to do a project, when each is equally appropriate to be implemented on technical grounds(WIKIPEDIA, 2014a).And a main objective of the LCC analysis is to quantify the total cost of ownership of a product throughout its full life cycle, which includes research and development, construction, operation and maintenance, and disposal(KAWAUCHI, 1999).

Below is the example of the optimization for the procurement. The platform needs the gas alarm system. There are two suppliers, A and B.

Assume the platform need one system and 200 gas detectors. The discount rate is

10%.

A: the system costs 200,000RMB; each detector costs 1,000RMB; the replace rate of the detectors is 0.1 per year; the installation costs 30,000RMB; the maintenance cost 30,000RMB per year; the lifetime is 5 years and the disposal will cost 30,000RMB at the fifth year.

B: the system costs 300,000RMB; each detector costs 1,000RMB; the replace rate of the detectors

is 0.02 per year; the installation costs 10,000RMB; the maintenance cost 10,000RMB per year; the lifetime is 5 years and the disposal will cost 10,000RMB at the fifth year.

From the above descriptions, we build the net present value worksheet to calculate the cost of each smoke alarm system, and compare the selection of each supplier.

Worksheet 1, Life cycle cost of A gas alarm system

Supplier A						
Life cost worksheet						
Discount rate	10%					
Each detector cost	1000					
Detector number	200					
Detector replace rate	0.1					
Capital cost	0	1	2	3	4	5
System cost	200000					
Detector cost	200000					
Operation cost						
Installation cost	30000					
Maintenance cost	0	30000	30000	30000	30000	30000
Replace detector cost	0	20000	20000	20000	20000	20000
Disposal cost						30000
NPV calculation	-430000	-45454.55	-41322.31	-37565.74	-34150.67	-49673.71
NPV	-638167					

Worksheet 2, Life cycle cost of B gas alarm system

Supplier B						
Life cost worksheet						
Discount rate	10%					
Each detector cost	1000					
Detector number	200					
Detector replace rate	0.02					
Capital cost	0	1	2	3	4	5
System cost	300000					
Detector cost	200000					
Operation cost						
Installation cost	10000					
Maintenance cost	0	10000	10000	10000	10000	10000
Replace detector cost	0	4000	4000	4000	4000	4000
Disposal cost						10000
NPV calculation	-510000	-12727.27	-11570.25	-10518.41	-9562.188	-14902.11
NPV	-569280.2					

From each life cycle cost of the gas alarm system we find that the procurement cost of supplier B is more expensive than supplier A, but the life cycle cost of B is less than A. So from the LCC analysis, I think the B supplier is the better choice.

3.3.3 Use 5S management to manage working area

The 5S management is used to do the materials and working site management. From the theory, the platform made clear plan to conduct the steps one by one.

- Inventory analysis help to know the consumption of materials. It is a careful and hard job done by the material man together with the all the equipment engineers on platform. Collect all the history information, make the list depend on the consumption rate and turnover rate. Make the amount that should be stored on the platform.

- Tidy up the storage with clear location number to all the materials. After the inventory

analysis, the engineers on platform tidy up the storage, put all the materials in sequence and mark them with the location number. It is easy to find exactly one by the related number.

- Tidy up the working area. Clean the working area, and put all the tools in the sequence.

- Make management rules to maintain the results. People are easy to follow the requirement if it is identified as a rule. The platform made the "5S management rules" to let everyone understand the requirement and know how to comply with the rules.

- Continual improvement through the monthly and quarterly inspection. The PDCA is used to improve the management. The platform organizes the mutual inspection by the different department. For example, the electrical department inspects the mechanical working site, the mechanical inspect the deck department's working site and warehouse, the deck department inspects the material department and material department inspect the electrical working site. Any findings will be recorded and report to the rig manager, the findings will be asked to close in a restricted time.

3.3.3.1 Understand the standards on work area management

No.	Inspection Items	Standards	Inspection Details
1	Working site Management regulations	Sturdy regulation on working site management	Whether make the organization and clear responsibility distribution
			Whether make the detailed plan
2	Execution on working site	Working area is clean and tidy	Whether the storage is clean and tidy
			Whether the materials can be sorted out by its location number
			Whether the tools be put in sequence clean and tidily
			Whether follow the safety control rules
			Whether clean the rubbish in time
			Whether the environment protection in well condition
3	Information management	Regular, unified,clearly on all the information publicity of information	Whether writing in the logbook clear and correct
			Whether the label is in the unified type

			Whether the information on the label is the same with the relative materials
...			

Table 4 Parts of Standards in Working Site Management aspects

3.3.3.2 Improvement on the working area performance

- The materials are stored in the clear location with the location number it is easy to console and find. The appearance looks clean and tidy.

Figure 12 The area management label

Figure 13 The storage after tidied up

- The working area is kept in the clean condition and all the tools are set in sequence. It reduce the risk of slip, fire and other hazards, it can leave the escape route clear and no obstacles. it is convenient to use the tools due to it is easy to find.

Figure 14 one area of HYSY902 (main engine room）

Figure 15 Hand tools stored in sequence

- Raise up the habit to clean the working area. The team members on HYSY 902 all make it as routine job to tidy up the area consciously

3.3.4 Learning and growth

The learning and growth of the employees of the company is significant for the company development. It describes the intangible assets in the company and their role in the strategy. The CPSL has the long-term plan on the training and learning to its employees.

3.3.4.1 Understand Standards on human power management

No.	Inspection Items	Standards	Inspection Details
1	Execution of training plan	Regulations on training plan management	Whether the training plan connected with the company plan
			Whether execute the plan regularly
			Whether organize the knowledge sharing regularly
2	Talent echelon building	Regulation on human power and resources plan management Regulations on the training and management to new recruits	Whether make the echelon plan for the team
			Whether have the clear target for the talent
			Whether fulfill the requirement of the new position for the promoted
			Whether renew the plan as the time change
			Whether renew the teaching materials with time
3	International talent training	Regulations on international talent management	Whether make the plan for international talent training
			Whether execute the plan regularly
			Examination on the ability of international talent
...			

Table 5 Parts of standard on Human Power management aspect

3.3.4.2 Teaching and Training on platform

- Training and examination. Follow the training plan of the PO division, people on the platform execute the training regularly. From the operation, safety, rules to cultures, English are all have teaching materials, and organized under the supervising of rig manager. After

training, the examination is necessary to test the quality of the training and enhance the memory and understanding of the knowledge.

- Mentor and apprentice. The recruit on the platform will be taught by a appointed mentor depend on the apprentice's background education. There is an agreement between the mentor and the apprentice that indicates the relationship of them. The reward will be gave to the mentor If the apprentice can grow up as the expectation, otherwise, the mentor will keep teaching the apprentice until he meet the requirement.

- Knowledge sharing between different departments. On the platform the different departments always share its knowledge and experience with others. This is a team that they like to grow up together. Think together, work together and share the experience together so as to build a smart team.

- English training to increase the ability to work aboard. COSL has several foreign working locations, it will be late if find the proper people when company need him to work abroad. Preparation for working aboard any time is the plan for the employees on the platform. Learning and practicing English on the platform, attending the English training organized by the company are the ways to help them enhance the capability on English communication.

3.3.5 Increase the customer satisfaction

As the definition from Wikipedia "a service is a set of actions or solutions that are put in place or are performed to provide a repeatable and consistent set of outcomes, deliverable, and performance for people, organizations, and systems that represent consumers or beneficiaries of such results"(Wikipedia, 2014b). Also as the description of Easingwood said that Services are largely intangible, produced and consumed simultaneously, heterogeneous and perishable(EASINGWOOD, 1986).

The COSL is a service company, whom we face are all customers. Providing the satisfied service to our customer is all COSL employees' pursuit. The PO division also has strict standards to evaluate the operation team on their service performance.

No.	Inspection Items	Standards	Inspection Details
1	Condition of Customer Satisfaction	Excellent service; High customer satisfaction	The score of the "Customer Satisfaction evaluation sheet" should be higher than 96
			No complain in the 1 service year
			Whether receive recommendation letter from the first party
2	Execution of contract	Comply with the content	whether clearly understand the contract

		in the contract	Whether supply the service stated in the contract to customers
...			

Table 6 Parts of standards of Customer Services management

To achieve the high satisfaction for the customers, the team on the HYSY902 replies on the process of "High-Performance team" building to improve the performance at every aspect:

- Fully understand the contract. It is the basic for the operation team before provide the service. We should know the needs and wants form the customers. Identify the difference between the ability of the team and the requirement of the customers. Conduct the operation performance step by step to fulfill the satisfaction of customer

- Keep good communication between the customers. Communication is a bridge to know each party during the service. The circumstance may change with the time, the needs may also be different, and the communication helps to gather all these information so that the team can know where to improve(E.G.Frankel, 2008).

- Use the Total Quality methods to continually improve the performance. Collect the service information and analysis the advantage and disadvantage methods found during the performance. Keep the good aspects and improve the deficiency. Make the record each time so help the follow the reasons of why take the new methods.

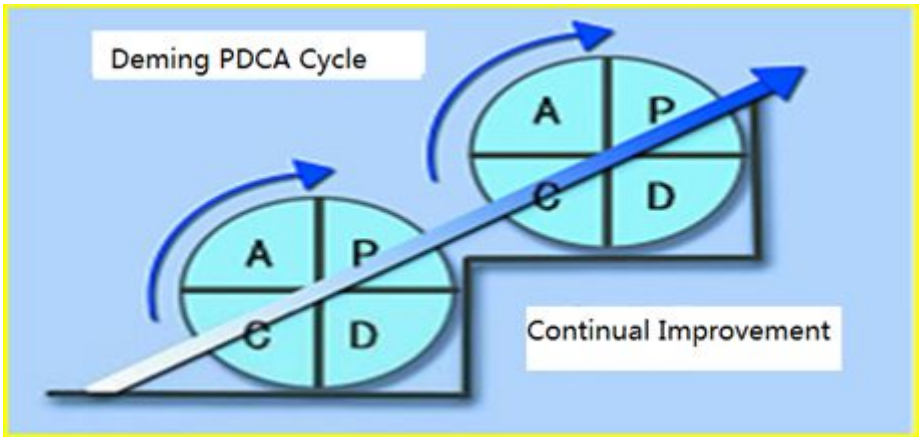

Figure 16 The turning of the PDCA wheel (Christopher and Thor, 1993)

Through the hard work and well performance of all HYSY902 employees, the scores of the customer satisfaction are all 100 every month in 2014. There are also several recommendation rewarded to HYSY902 team performance by the first parties. These encourage all the team members to continually do well in the customer services.

Figure 17 The recommendation letters for HYSY902

Chapter 4 Analysis and Results

4.1 Performance inspection and reward

The operation team can apply for the inspection once it has followed all the inspection standards. So the first inspection. But the result is not as the expectation, the inspection group is strict and gave a low score to the HYSY902, and left findings on 4 items 38 sub articles which need be improved.

The team on HYSY902 collected all the findings and analysis the reason, find the measure to close the findings. Recheck all the standards carefully and keep improving the performance at all the aspects. The PDCA circle is well used during this process.

Through 10 months hard work, the second inspection on the platform was applied. All the employees prepared for inspection. The inspection is stricter than before. The evaluation group checked all the details accordance with the standards, asked questions to the onsite people, inspect the working area carefully.

Figure 18 2nd inspection on site

Figure 19　examination with crews

After strict inspection, the evaluation group gave the score 86.5 that is higher than the required standards. The HYSY902 was reward “High-Performance Team” from the general manager of PO division.

Figure 20　The High-Performance Team medal rewarded to HYSY902

4.2 The learning Points

I analysis the processes of the High-Performance team building of HYSY902 and find the success ways that used, also these successful ways can be used by other teams:

1. **Fully understand what to do**. Assessment to the standards is the basis. After get the standards, the manager organize all the crews the read and find the question about the standards. Then I find the answers and support files to explain to all the crews. Everyone know all the KPI during the work, and it is easy to run toward the right way.

2. **Make proper plan for how to do**. According to the standards, the manager make the plan and schedule together with the main engineers on the platform. And socialize the plan to everyone to know how to do.

3. **Inner inspection to find the deficiencies**. Every month there is a inner inspection on the platform to check the progress whether follow the plan and find the deficiencies that should be corrected next month.

4. **Optimize the cost to improve the performance**. The processes of the improvement for the equipment and safety control measures and other actions need spend money to fill the needs. The analysis on the cost is important to save the unnecessary cost and optimize the necessary cost.

5. **Strict execution is the key**.There is a study on the failed strategies, which concluded, "in the majority of cases- we estimate 70 percent - the real problem is not [bad strategy]...it is bad execution" (KAPLAN, 2004). The author can see the high efficiency on the execution at HYSY902 and that is why it achieve the goal.

6. **Stimulation is necessary**. The praise and punishment should be well used to manage the crews on the platform. There is a old proverb that " no pay no gain". The manager should often stimulate the crews with the good future if the High-Performance team was reached. Let the crews have the willing to complete the job as the plan.

Figure 21 Key points to establish the High-Performance Team

After HYSY902 become the High-Performance team, several experience sharing meeting and on site visiting were organized by the HYSY902 team. They shared the process and successful methods with other teams at different platforms. Several workshops were also hold to talk with other teams. The experience is useful for other teams, two more teams passed the inspection after learned from HYSY902.

4.3 Continuous performance improvement

The first stage program on the High-Performance team building was finished at the end of 2014. There are several operation teams reach the High-Performance team requirement, most of the operation teams pass the inspection as per standards, and some teams fail to pass the inspection.

According to the summary of the observation and records to the High-Performance team building program, the PO division analysis the problems and experience during conducting the program. The requirements on each aspect has be increased. It is needed that the operation teams pay more attention to improve the performance on the platform. As the competition will be severe in the future. One company can't stay at its own potion without improvement when the customers needs changed.

From the beginning of 2015, the PO division start the second stage program of "High-Performance team building". The standards are made more than the first stage and more details about the KPI. The more strict inspection will be organized by the inspection group. And the scores for passing the inspection are also increased. The aim is building more High-Performance teams and asking all the other teams pass the final inspection.

In the second stage program, more detailed requirements on performance are asked to the team. These requirements are made mainly based on the findings and deficiency at the first stage.

Figure 22 Continuous improvement process

Chapter 5 Discussion

5.1 Strengths and challenges analysis

To conduct the High-Performance team building program, there are several advantages in PO division:

1. The experience collected help to control the main performance. Through many years performance management, the PO has gathered many information about the operation teams. The assessment on the advantages and disadvantages has talked and shared with the managers. All the experience are helpful to control the critical path of success.

2. The organization is completed. The organization of PO division has concrete goal to manage the performance. There is high efficiency in the inner communication and response. The different departments under the leading of general manager do their best to support and management the operation teams.

3. Many high educated employees join in the company. The COSL is attentive to absorb the high knowledge level graduated students to join in the company. These students increase the education level of the operation teams. They are full of passion and motivation during working and help to improve the other colleges work with them.

4. Training and examination help to improve the performance. The PO pays time and money on the training. Making the operation manuals and classes to give employees the instruction for the operation. There is examinations for checking the effect of the training and before the employee promotion. It enhances the motivation of learning of each employees.

5. Reward and punishment systems help to push the initiative. For the operation teams that reach the High-Performance team requirements will be rewarded with 15% more month allowance. And for the operations that fail to reach the standards requirements will be punished with 25% cut off of month allowance.

Meanwhile,The PO division has developed for about 9 years, there are more than 2500 employees working on the different platforms, it is really difficult for the managing of team performance in a short time. The main challenges are:

1. Many teams working on the platform always change. One team usually consists of 16 employees at different positions, but the team members are not fixed according to the different schedule.

2. The level of education of the employees is different. As the development of education in China,

there are more and more employees with good education join in the oil and gas industry, especially at the offshore platform, but there are still many employees have no chance to get good education. The difficulty on the training of operation skills and management concept is increased.

3. Some facilities and equipment on the old platform are not in the good condition. After operation for ten or twenty years, without well maintenance to the fixed facilities and equipment, some have in bad condition and need repair and modification. Meanwhile consider the cost, there may be difficult for the company to solve the problem.

4. The space on the working location is limited. On the platform has not so much space for the layout of the equipment and tools, also it is difficult for the management of the warehouse. The relationship between the space and working should be well considered.

5. Cost control is a big task for the manager to concern. the operation of one team need amount of money and time. In order to reach the goal of the High-Performance program, the manger should consider the cost during the whole program.

6. Safety performance is important for team operation, but the oil and gas industry is a high risk industry. Frankly speaking, no one can promise that he can make sure no incident or accident happened on the platform. What we concern is how can we predict and prevent before it happen.

5.2 Future work

The HYSY902 moved the working are from the BoHai Bay in China to the Java Sea in Indonesia at March 2015. The performance management will be continued no matter where the platform works at. At the first two months the team try to know well the new environment and keep the job being done safely and smoothly.

The study on the establishment of High-Performance team will be continue. And the author want the establish the new team with Indonesian crews and reach the requirement of the company.

There are some difference between China and Indonesia including the language, culture, religion, regulations, work style and so on. The author will keep focus on the implementation of the successful experience raised at China. And the author think the process will have more challenges and worth to do the job.

5.3 The challenges during the thesis project

The author started to write the thesis from the August 2014, meanwhile started to go offshore for working. The author read many books and accessed the web site to gather the information needed. It is easy to know what happened when you on the platform, but hard to know when you are off duty. How to gather the data and observe the performance turns out to be difficult.

The author gather the data and the records when at the platform. Talk with the crews about the job and what the ideas from them. Because the people have more wisdom than one person. All the performance according the standards are followed-up every day.

The author takes pictures on the performance before leaving the platform, so there are comparison that the author can find when he came to platform next time. Also, it is needed to check the records during the time of absence and read the hand over report form the back to back one.

Through the analysis the other teams performance, the author find that the improvement space of all the operation team is still large:

- Execution on the safety measures need enhance and do more carefully on the documentation.
- Monitoring and maintenance to the equipment need take more scientific method to low the possibility of down-time
- Training on the recruit is needed to continue.
- Make new plan on the performance management if the circumstance changed

It is a hard time during the thesis writing. But the author feel worthy to do this. Because it really a wonderful experience to use the knowledge learned to direct the job.

Chapter 6 Conclusion

After the two years program, many High-performance teams have been established. The High-Performance management has high effect on the improvement of quality and productivity. It is a powerful way to the team building. As the development of the company, the benefits will be more fund during the operation. The author will keep use the knowledge to manage the program and keep improvement in the new stage.

The High-Performance team building is a long term program. After the first stage program, the second stage has been launched. The PO division pay high attention on the performance management and want to improve it through this program.

The benefits of the High-Performance management are clear: it increase the understanding on the KPI measures to all the employees, several High-Performance teams are built during the first stage. The performance on the safety, maintenance, cost control, customer service, learning and training has been improved.

Through the study of the case of operation team management, let the author well understand the knowledge from University of Stavanger and have the chance to utilize these to help the job. The performance management is a long term task and need improvement every day.

Chapter 7 Reference

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