



March 31, 2017

AAACE Arabian Gulf Section Newsletter issue # 5

TECHNICAL DINNER MEETING

“Cost Management of EPC Projects”

What's Inside



News



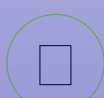
Activities



Communications



Announcements



Training Schedule

A technical dinner meeting (TDM) has been conducted by AAACEi-Arabian Gulf Section in collaboration with Saudi Council of Engineers

on **Wednesday January 25, 2017** in Al-Khobar, Saudi Arabia. The TDM presentation delivered by **Dr. Madhu Pillai, Project Director** of Kentz-SNC Lavalin in Saudi Arabia and fellow of AAACE international. The technical presentation on "**Cost Management of EPC Projects**". covered important

aspects about the cost management of EPC projects and the attendees were over 120.



From left to right;

1. Mr. Ahmed Mulhim - President - AAACEi-AGS
2. Mr. Hussain Omani - AAACEi Director - Region 7
3. Dr. Madhu Pillai - Speaker

TECHNICAL DINNER MEETING

AACE- AGS & Saudi Council of Engineers Project Management Chapter jointly conducted three Technical Dinner Meetings During the month of Feb 2017.

⇒ Two Technical Dinner Meetings in Saudi Council Of Engineers at Jeddah on Thursday 09 Feb 2017 and on Thursday 23 Feb 2017 respectively.

⇒ One Technical Dinner Meetings on Wednesday 15 Feb 2017 at "Saleh Kamel Hall" Makkah Chamber of Commerce at Makkah.

- ◆ The Saudi Council of Engineers - Project Management Chapter and AACE-Arabian Gulf Section jointly conducted a Technical Dinner Meeting on **Thursday Feb 09, 2017**, in Saudi Council Of Engineers at Jeddah. **Dr. Nabil Mohammed Abbas, Doctorate in projects Management** was the speaker of this event and delivered a technical presentation on **"Types of Contracts in Construction Projects**.

ع منطقة مكة المكرمة ومجلس ينبع بالهيئة السعودية للمهندسين بالتعاون مع شعبة إدارة المشاريع يدعوكم لملتقى إدارة المشاريع لشهر فبراير 2017

أنواع عقود التسيد - 15 ألفا من التبادل والتو

د.م. / نabil محمد علي عباس
مهندس استشاري - زميل معهد المحكمين البريطاني

- بكالوريوس هندسة معمارية - جامعة القاهرة 1976 م
- دكتوراه في إدارة المشاريع - جامعة Strathclyde
- مهندس استشاري
- عضو لجنة الفيدريك العالمية
- مدير عام - مكتب نabil عباس للاستشارات الهندسية
- زميل معهد المحكمين البريطاني AIA - MACOSTE - FCIARB
- القيام بكثير من البرامج التدريبية للقطاع العام والخاص في الشرق الأوسط والخليج العربي.

المحاور:

- تقسيمات وأنواع العقود
- العوامل المؤثرة على هذه التقسيمات
- أيهما تختار؟ PPP أو PFI أو BLT
- تعرف علي تأثير شخصية صاحب العمل
- علي اختيار نوع العقد.
- لماذا لا يوجد عقود نموذجية روسية؟

كان ر الهيئة السعودية للمهندسين - جدة - مقابل سوق جريب مول

تاريخ و الوقت
ميس /09 فبراير / 2017 الموافق 1438/05/12 8:00 - 10:00 م

Technical Partners: PMA, AACE, SCEPMC

ع مكة المكرمة ومجلس ينبع بالهيئة السعودية للمهندسين وبالتعاون مع شعبة إدارة المشاريع يدعوكم للملتقى الشهري لشهر فبراير 2017

إدارة الطوارئ والكوارث

م. سعود بن صالح الصيغري

ماجستير إدارة هندسية - هندسة صناعية
كأولمبوس هندسة ميكانيكية - هندسة الطيران
درب محترف معتمد من جامعة الملك عبدالعزيز
درب محمد من المنظمة العالمية للقيادة LMJ
درب محمد لمشروع أسفير لإدارة الكوارث والأزمات
نضو المنظمة العالمية لمديري الطوارئ والكوارث

المحاور الرئيسية:

- مفهوم إدارة الطوارئ والكوارث
- مبادئ الحد من الطوارئ والكوارث
- دور المهندسين في الاستعداد المبكر
- مبادئ التخطيط للطوارئ والكوارث

مكان
مقر الهيئة السعودية للمهندسين - جدة - مقابل سوق جريب مول

التاريخ و الوقت
الخميس 23/فبراير/2017 الموافق 1438/05/26 8:30 - 10:00 م

Technical Partners: PMA, AACE, SCEPMC

- ◆ The Saudi Council of Engineers - Project Management Chapter and AACE-Arabian Gulf Section jointly conducted a Technical Dinner Meeting on **Thursday Feb 23, 2017**, in Saudi Council Of Engineers at Jeddah. **Engineer Saud Al Saery**, Certified Professional Trainer, was the speaker of this event and delivered a technical presentation on **"Emergency, Crisis and Disasters Management**

CONT'D - TECHNICAL DINNER MEETING

The Saudi Council of Engineers - Project Management Chapter and AACE-Arabian Gulf Section jointly conducted a Technical Dinner Meeting on **Wednesday 15 Feb 2017**, in **"Saleh Kamel Hall"**, **Makkah Chamber of Commerce at Makkah**. **Dr. Osama Suleiman, Consultant of Quality Management** was the speaker of this event and delivered a technical presentation on **"Key Performance Indicators"**.



يسر
الغرفة التجارية الصناعية بمكة المكرمة
بالتعاون مع شعبة إدارة المشاريع



تدعوكم لحضور
الملتقى الهندسي الأول
بمكة المكرمة

مؤشرات قياس الأداء

- استشاري نظم البيئة، السلامة والصحة المهنية، سلامة الغذاء
- مستشار الإدارة والجودة بشبكة المهاد العربية للتميز

د/ أسامة سيد سليمان

- مستشار الإدارة والجودة
- مراجع دولي معتمد لنظم الجودة
- مراجع لييد معتمد
- استشاري نظم الجودة



محاور المحاضرة



الشركاء



@SCEPMC
www.aace-ags.org
pmc@saad.org.sa
Reg@ace-AGS.org



الموعد
من 08:00
إلى 10:00
مساء

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غرفة مكة المكرمة التجارية الصناعية
طريق مكة جدة السريع حي التخصصية
القاعة، قاعة الشهد ص.ب. كامل
رابط التسجيل: <http://500.gs/497>



AACE- AGS COMMUNICATIONS

- 1) AACE-AGS 7th **Board meeting** was held on **January 25, 2017** in the M/s Park Inn Hotel by Radisson, Al- Khobar.
- 2) AACE-AGS 8th **Board meeting** was held on **March 1st, 2017** in the M/s conference hall of M/s Tarkiz Consultants, Al-Khobar.
- 3) 2nd Quarter Section Quarterly Health Report and Awards Submission (Oct-Dec 2016) has submitted to the RD-7.
- 4) The AACE-AGS is frequently communicating with the AACE International Members of the Saudi Arabian Section.



It s proud to inform that **Mr. Mohammed Rafiuddin** has elected as the AACE Vice President – International Regions for the 2017-2018, from the Saudi Arabian Gulf Section.

Mohammed Rafiuddin

ANNOUNCEMENTS

⇒ **Saudi Council of Engineers will sponsor the AGS Board Members to attend the AACE International Conference 2017 – Dubai, UAE**

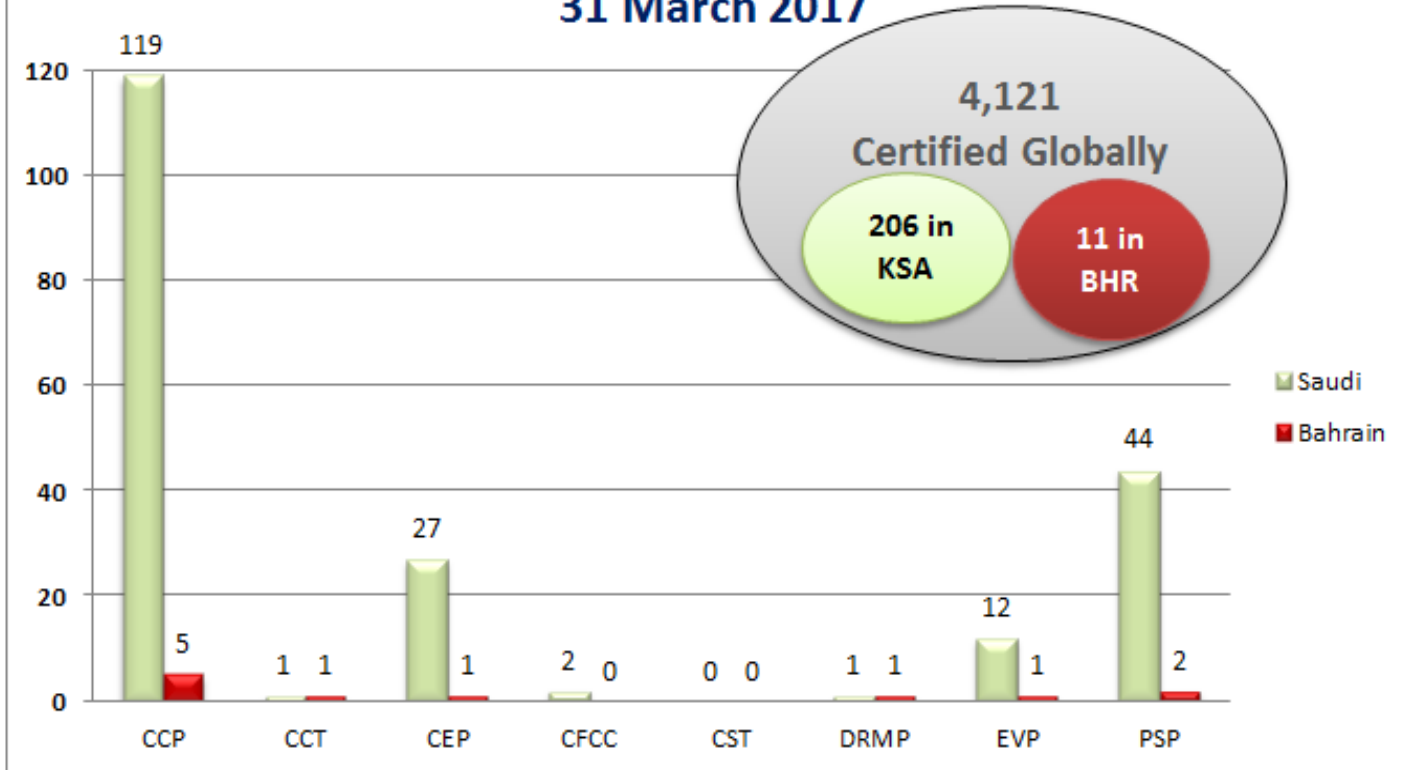
Mr. Ahmed Mulhim, AACE-AGS President, pleasure to announce that the Saudi Council of Engineers has agreed to sponsor the registration fee for the AACE-AGS Board Members those who have the engineering degree to attend the forthcoming The AACE International Conference 2017 Protecting Capital Investment through Project Cost Control & Risk Management, which is scheduled to be held on **01 - 02 May 2017, Dubai, UAE**.

⇒ **One Day Symposium on 20 May 2017 Saturday at Jubail**

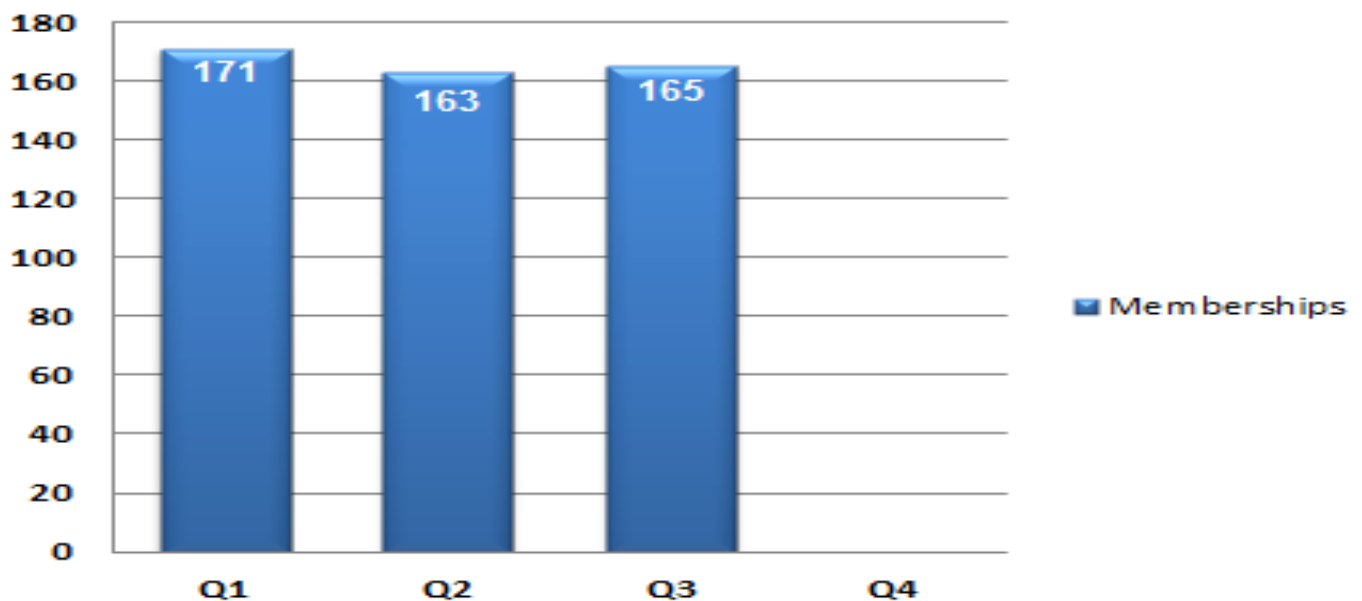
The President of the Arabian Gulf Section informed that a 1 day Symposium will be organized in association and sponsored by the Saudi Council of Engineers, Project Management Chapter, Eastern Province on **May 20, 2017**, the Saturday, in Jubail, Saudi Arabia.

AAACE- AGS HIGHLIGHTS

AGS Certified Individuals 31 March 2017



AAACEi - AGS MEMBERSHIPS June 2016 - May 2017



OIL AND GAS CONSTRUCTION PROJECTS DELAY IN SAUDI ARABIA AN INVESTIGATION ON THE CRITICAL DELAY FACTORS

This dissertation is about investigation of the delay issues of Oil & Gas process projects in KSA. The delays of projects have severe consequences and impact to stakeholders of the project such as economic losses from cost overrun and delay of production of the O&G facilities. Understanding the major causes of schedule delays is very beneficial to the project's stakeholders.

Literature review is structured into three main areas: process plant characteristics & main elements, construction projects types & delay classifications, and critical review of recent studies conducted so far in the subject. The aim of review is mainly focused on two areas: the methodologies and techniques used to select suitable design to achieve the objectives of the research and extract a list of commonly cited delay causes. The sequential mixed methods research strategy found to be the most suitable design for the research due to scarcity of studies on the O&G process projects delay. Explorative research was used at the beginning to get more insights and clues on the subject. Studies from non-process projects were included in the review due to the same reason.

Thirty-two delay causes were extracted from literature review and used a theoretical framework. This initial delay causes list was refined through qualitative semi-structure interviews and group discussion. Main purposes of these methods are to get insights and to validate the delay causes list to generate more comprehensive list to be used, 54, for the quantitative data collection. Thirty-one surveys returned and used for the analysis.

The responses were analyzed and surveys indicated that 11 delay causes found to be critical based on their relative importance indices. "Unrealistic schedule imposed by the owner in the contract" and "design changes" found the most critical delay factors. Other factors included in the list such as: shortage of skilled manpower, change orders, and contractor selection & awarding process.

The dissertation suggests more and further researches on this chronic problem to understand the delay issue in KSA by including real case studies' data and enlarging the sample of respondents to have more generalized results.

◆ Research Background

Reliable energy is essential to meet needs of world growing population. Oil continues to be the primary source of energy for electricity, heating and transportation. It is also the prime raw materials for petrochemical, chemical, fertilizers, and plastics industries. In order to meet growing energy demand from emerging markets, there is an unprecedented wave of capital spending. Berend (2007, p.4260) said that “ the amount of oil and gas processing capacity required to meet demand during next 20 years is more than twice the amount realised during the last decades”. International Energy Agency (IEA) predicts that energy demand will rise by an average of 1.5% each year through 2030. It also predicts that global demand in 2030 will be higher by 60% than that what was in 2000 (Inkpen and Moffett, 2011). IEA stated in its report, world energy investment outlook (2014), that the Middle East (ME) countries are going to invest 2.7\$ Trillion in O&G projects between 2014 and 2035. The success of these projects is measured by their ability to meet business objectives. From project management point of view: schedule, cost, scope, safety and quality are the success measures for any project. O&G investors are concerned about the ability to create value throughout the facility life cycle. Projects that are not meeting pre-defined measures are considered to be failed. A research by Merrow (2011) revealed that 65 % of 300 global industrial projects are considered to be failed because of not meeting business objectives. Despite the advanced development of execution methods in the industry, yet still so many projects fail due to large schedule delays and cost overruns (Baron, 2015). A research by Ernest & Young (2014) on 365 global mega projects revealed that the majority of projects faced schedule delays and cost overruns: 64% and 73% respectively. ME projects had the worst performance among all global regions with record of cost and schedule overruns: 89% and 87% respectively. More and more O&G projects are built despite the unsatisfactory record of most of the projects. With decrease in oil prices, majority of the projects have been put on hold and prices of some projects are under renegotiation which means there will be high pressure on capital expenditure (CAPEX). Understanding the major causes of schedule delays will be very beneficial to the project’s stakeholders: owner and EPC contractors. The schedule slippage problem is indeed a significant topic that worth investigation.

♦ Importance of Study

Delay is defined as the time overrun beyond completion date specified in the project construction contract. It is a project slippage over its planned schedule. "Time extensions are very serious and chronic problems in construction projects" (Kazaz, Ulubeyli, and Tuncbilekli, 2011, p.426). Projects delays have severe consequences and impact to the main stakeholders: client and contractor. Time and cost overruns were found to be frequent effects of delay. Delays are expensive and disruptive. "The effect of delay may include time overrun, cost overrun, disputes, arbitration, litigation, and total abandonment" (Khan, 2015, p.na). Delay means loss of revenue to client or operator of the plant due to lack of production while it means higher overhead and materials costs to contractors because of longer working periods and inflation respectively. Aibinu and Jagboro (2002, p.593) said that when projects are delayed, they "are either accelerated or have duration extended beyond the scheduled completion date". Delay might affect the reputation of both main contractors and their sub-contractors most of the time especially if these delays are due to reasons caused by them. Delay is main reason for lengthy disputes as stated by Hamzah et al (2011, p.492): "extensive delays provide a fertile ground for costly deputies and claim". The project delay problem is chronic and common in all construction types. O&G construction projects are facing this problem as well. It is considered as one of the most persistent problems and will continue to be one of the major challenges especially with increase of O&G projects complexities nowadays. According to Baccarini (1996, p.201) "construction process may be considered the most complex undertaking in any industry". The complex projects require an exceptional level of project management. O&G projects are even more complex than other types of projects like buildings. They become more complicated due to complexities in design, operation, hazardous nature, increasing number of participants and interest groups. The delays that have their impact on the overall project are main concerns to the stakeholders. As per Trauner (2009, p.26) "delays that affect the project completion or milestone date are considered critical delays".

The primary interest of this research study lies in understating the causes of critical delays that have direct impact on a project and suggest mitigating actions. In order to minimize the impact, causes of these delays should be understood first. It is impossible and unrealistic to prevent or control all delays causes since some are out of the client and contractor's control such as those caused by weather or act of god. Yet it is reasonable to identify the most or significant causes so the impact can be avoided or minimized through risk management. As per Ikediashi, Ogunlana and Alotaibi (2014) "the ability to develop a set of project failure factors could aid the project team and contractors alike in evaluating their project".

Many studies and researches conducted on the delay causes of projects in Kingdom of Saudi Arabia (KSA) found in literature, such as Assaf and Al-Hejji (2006) who surveyed the causes of delays of large construction projects. They found that only 30% of projects were completed within planned time. In their study, they identified 73 delay causes as commonly cited in the literature. The study was carried out on construction projects executed in the eastern province of KSA. Their study did not focus on certain type of projects. On the other hand, Al-Khalil and Al-Ghafly (1999) were more focused on causes of delay of public utilities projects such as water and sewage in Riyadh and Eastern provinces of KSA. Ikediashi, Ogunlana and Alotaibi (2014) analyzed the infrastructure projects failure factors in one of the major cities in KSA, Jeddah. Researches in this area so far were found mainly on the schedule delay of KSA' non-process type projects such as infrastructure and buildings. There is limited research geared towards investigating factors responsible about O&G process type projects despite of low performance record and problems in completing projects within planned time. Although O&G projects share some common causes with civil works construction projects, however, there are some distinctions and uniqueness due to their increase in complexities, size, technology and international involvement which makes the control of scope, time, cost, quality, and safety much harder with respect to other type of projects. These observations underlie the rationale and importance for this research. Investigation of delay causes and development of common and clear understanding among industry professionals become necessary (Doloi et al, 2012).

♦ **Research Aim, Research Questions & Objectives**

The purpose of this dissertation is to fill the gap by investigating the O&G schedule slippage issue in depth to better understand and explain the phenomena. Therefore this dissertation is aimed at determining the critical factors of schedule delay in O&G projects in Saudi Arabia from the perspectives of client and contractor. It is hoped that the insights gained from this study will make a significant contribution to resolve this chronic issue. Knowing the most critical delay factors could help the main stakeholders to reduce a project's unexpected exposure to risk (Ikediashi, Ogunlana and Alotaibi, 2014). This will allow the decision makers within main stakeholders to concentrate to minimize the most important causes of delay and develop preventive measures. In this respect, the research question is: What are the critical delay causes responsible for O&G projects schedule slippage in Saudi Arabia as perceived by the client & EPC/M contractor, and how can they be mitigated?. Achieving the following objectives enabled the author to answer the research question:

⇒ To identify O&G process plant construction schedule delay causes in Saudi Arabia.

- ⇒ To determine the O&G construction delay causes that are critical based on their relative importance by measuring the frequency of occurrence, and severity of impact from the client & EPC/M contractor perspectives.
- ⇒ To determine if there are differences between the perception of the client and that of the EPC/M Contractor about the critical delay factors, and why.
- ⇒ To find out about how the critical factors can be mitigated.

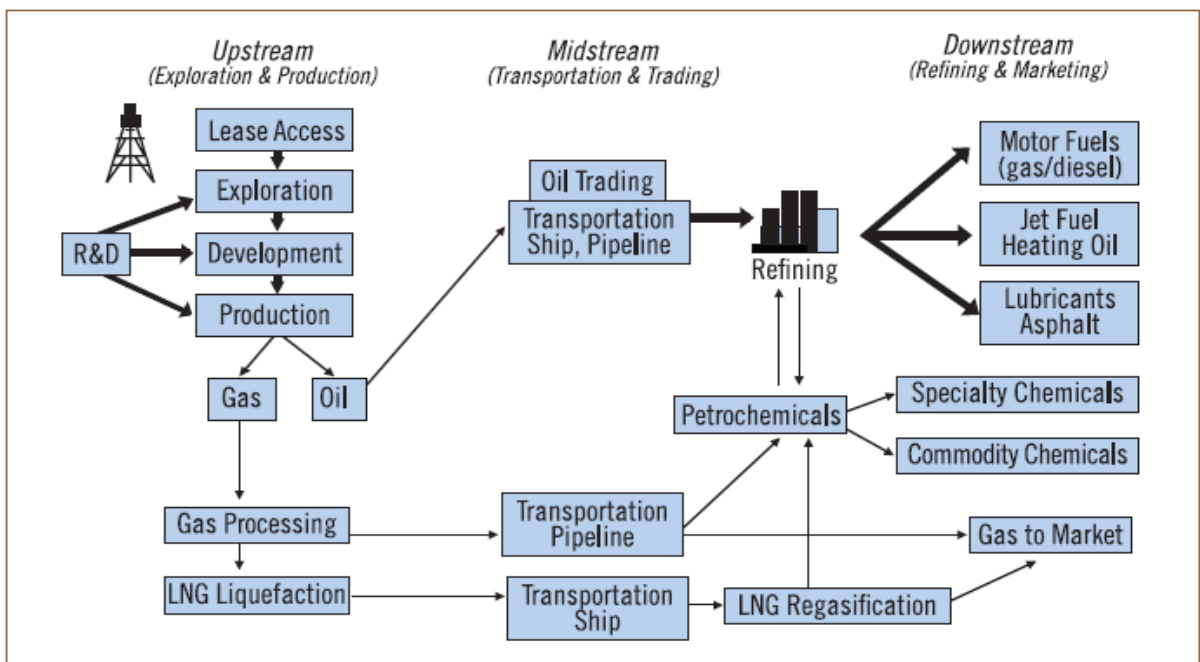
◆ **Research Methodology Outline**

Mixed research methodology was used to achieve the objectives of this research. Extensive literature review of previous 38 peer-reviewed articles & studies used to develop theoretical framework from which an initial list of commonly cited delay causes was developed and considered to be hypothesized list. Qualitative method employed first to gain more insights and to explore more about the delay issue through semi-structured interviews with 4 highly experienced project management professionals. Discussion with EPC professionals has been made within LinkedIn professional networking about the delay causes to supplement the findings and help refining and validating the delay causes list. Thirty two (32) EPC professionals participated in the discussion. Great insights were gained from the interviews and discussion enabled the author to adjust delay causes and to reach to a comprehensive list of 54 causes which were used to construct the questionnaire. The questionnaire then used to collect quantitative data. Feedback solicited from one-hundred seventy five (175) professionals randomly selected from LinkedIn professional networking. Minimum 5 years of experience within KSA O&G projects was used a criteria to include in the sample. The respondents were asked to rank each delay cause in terms of its frequency of occurrence and severity of impact based on their previous projects' experiences. The scale of five Likert-scales was used for both of the frequency and severity. Weight from 0-4 was given to each scale.

Thirty one (31) questionnaires were returned and used to conduct the data analysis. Statistics tools & formulas were used to compute the relative importance index (RII) of each delay cause based on frequency index (FI) and severity index (SI). The FI and SI were calculated based on rankings given by the respondents. The correlation of client and EPC/EPCM's perceptions was checked using Spearman's coefficient to see if there is disagreement in the perceptions of delays.

♦ Research Scope and limitation

There are three main segments in O&G industry value chain: upstream, midstream, and downstream, see figure 1. In the upstream, O&G fields are explored & developed then produced. The produced O&G are transported through transportation means such as pipeline and ships. This segment called midstream. The produced O&G are used as feedstock in process plants to produce commodity products such as gasoline, diesel fuel, jet fuel and feedstock to chemical and petrochemical plants such as fertilizers, plastics, and polyethylene. The later segment is called downstream. The products come from upstream production are processed in order to produce useful commodities. There is a huge investment in downstream, refining & petrochemical, in KSA. The scope of this research is concentrated and limited to understanding the delay causes of the O&G downstream process projects in Saudi Arabia. Thereafter are called process projects in this dissertation.



The projects in this segment are developed into several stages: concept, feasibility, FEED, EPC, commissioning and handover. EPC is the longest stage of the project. In this stage, most of the investment is consumed since the detailed design & engineering, procurement of all equipment and materials, and erection and construction are performed. Researchers found that most of the issues and delays occurred in this phase. In their study, Salama, Abd El Hamid, and Keogh (2008) revealed that “the EPC phase as the most significant phase where delay occurs in most of the cases”. This conclusion is based on opinions of 89% of the respondents surveyed. One or more parties usually contribute to the issues occurred in this stage (Abdul-Rahman et al, 2006). The main parties involved in this phase are: client and EPC/M main contractor. There are several sub-contractors, vendors, and speciality services providers are hired by the EPC contractor to execute portions of the scope. In some cases, project management consultancy is hired by clients to support and manage the project on their behalf. Hence it is worth to focus this research on this important phase of an O&G process projects.

♦ **Research’s Expected Contribution**

This dissertation is expected to provide more insights in the most critical delay causes responsible about the chronic issue, O&G process projects delay, and will discuss and suggest mitigation measures to be taken in order to minimize the effects of such delay causes during project life cycle.



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A professional project manager in the Oil & Gas Capital/ EPC Turbomachinery projects, Holding a bachelor degree of science in Mechanical Engineering from King Fahd University of Petroleum & Minerals (KFUPM) and Master degree of Science in Project Management specializing in construction projects from University of Liverpool (UOL). Working with General Electric Company (GE) since April 2000, 17 years. During my career with GE, have taken several responsibilities and gained deep experiences within Power and Oil & Gas business in the areas like Turbomachinery maintenance & outages management, contract management, customer service, new units packaging, localization, installation and project management.

CALENDAR OF CERTIFICATION

AACEI-AGS is pleased to announce the schedule for the upcoming **Certification Refresher Seminars and Exam preparatory Workshops** which are to be conducted on **every Fridays, 02:00 PM to 7:00 PM** in Saudi Arabia

Certification Seminars for June 2016 to May 2017

MONTH	VENUE	CERTIFICATION NAME
Oct-Nov 2016	Al-Khobar, Riyadh	CCP - Cost Certified Professional Exam Preparatory Workshops
Oct-Nov 2016	Al-Khobar, Riyadh	CEP - Cost Estimation Professional Exam Prep Workshops
Nov-Dec 2016	Al-Khobar, Riyadh	PSP - Planning & Scheduling Professional Exam Prep Workshops
Dec-Jan 2017	Al-Khobar, Riyadh	EVP - Earned Value Professional Exam Prep Workshops
Feb-Apr 2017	Al-Khobar, Riyadh	CCP - Cost Certified Professional Exam Preparatory Workshops
Mar-Apr 2017	Al-Khobar, Riyadh	PSP - Planning & Scheduling Professional Exam Prep Workshops
Apr-May 2017	Al-Khobar, Riyadh	CEP - Cost Estimation Professional Exam Prep Workshops
Apr-May 2017	Al-Khobar, Riyadh	EVP - Earned Value Professional Exam Prep Workshops

In-house Training Programs

AGS also provides in-house training programs for companies / organizations on their premises during the 5-day work week.

The AACE International certification program has been designed to provide the industry with Certified Professionals to perform as cost engineers, estimators, planners & schedulers. Additionally, the workshops enhance abilities of Cost Engineering Professionals by gaining special recognition of their peers and highlighting those who meet prescribed standards of performance and conduct and have demonstrated their excellence by maintaining a high level of competence.

For registration <https://goo.gl/forms/u8tBFmadsaEOKmU32>

OR contact at reg@aace-ags.org / reg.aacei.ags@gmail.com

For more updates please log on our website: www.aace-ags.org / www.aacei.org