

State-of-the-Art Project Management in Oil and Gas Industry Panel



Wednesday 10.17.2018, 8:30 to 10:00



Jan Hogendoorn
JHCONSULTANTS

He graduated as a Mechanical Engineer at the Technical University of Delft and as a Business Economist at the University of Groningen in The Netherlands and joined Shell thereafter. He held various jobs in Mechanical Engineering, Project Management, Engineering Management and Front-End Development Management in The Netherlands, Turkey, UAE, Iran, Iraq and Qatar. These jobs included accountabilities for Downstream, Midstream and Upstream Oil & Gas Projects.

His most recent assignments were the Yadavaran Project in Iran, the Majnoon FCP and the NGL Brown Field Rehabilitation Project (Basrah Gas Company) for Shell in Iraq. He also held positions as a Shell advisor to Sinopec in the Middle East and to Qatar Petroleum. He has a vast experience in leading the technical part of audits and due diligence activities for O&G facilities and in managing transition processes.

He develops course material for master classes in Project Economics, Project Management, Risk Management, Competence Development, HSE Leadership and Hazard & Effects Management.

He is an APM registered project professional and a former Shell assessor in the accreditation process of Project Managers.

Recent Job position

May 2016- Current: Director of Engineering for WTS Energy – UAE



IPEC 2018

The main activities are:

Business Development, Due Diligence and Audits, Project and Engineering Management, Front End Development Support, Coaching and Training, Transition Management

June 2014 – April 2016: Development Manager for Shell Qatar – Doha Qatar

June 2013 – May 2014: Engineering and Development Manager for Basrah Gas Company– Shell - Iraq

May 2010 – May 2013: Engineering Manager Majnoon FCP – Shell – Iraq

Aug 2008 – Apr 2010: Project Management advisor to Sinopec for the Yadavaran field– Shell Iran

Aug 2004 – Jul 2008: Front End Development Manager – Groningen Gas field – Shell– Netherlands

Prior 2004: Various Engineering and Project Management and other functions

Framing Methods for Large Projects in The Oil & Gas Industry

Jan Hogendoorn

Good morning Ladies and Gentlemen. It is a great honour to me to deliver this presentation about Framing methods for projects in the Oil & Gas Industry to you.

It is a well-known fact that the O&G industry suffers from poor project performance (scope changes, budget and schedule overruns). IPA (Independent Project Analysis), a company in the US that has analyzed many projects around the world, found that if you define failure as 25 percent cost overrun or schedule overrun, more than half of our projects worldwide fail. If new technology in your project are applied, the failure rate goes up to even 73 percent.

What are the reasons? The most common reasons are changes in business objectives, scope changes in a late stage of the project, unrealistic cost reduction exercises and facilities relocation.

Track Record Large Projects

IPA (Independent Project Analysis) reviewed the performance of many Up- & Downstream projects. With "Failure" defined as >25% cost or schedule overrun, the observed Failure Rate was 55%. For projects with new technology even 73%.

3 out of 4 E&P projects miss their sanctioned

**NPV
How ?**

Major causes of failure were:

- Changes in business objectives
- Scope changes
- Cost reduction exercises
- Facilities relocation





It is obvious that we as project managers must do something to improve on our performance. Today, I will discuss an important topic that can really make a difference. It is called Framing. Before I do that, let's first summarize how project realization in the world is done nowadays. We first define the project in terms of realistic and business driven promises which are both technically and none technically robust. However, we as engineer and project managers focus on the technical challenges, but the most important challenge for success is typically the non-technical robustness of the project. Furthermore, assessing all risks and making an adequate risk mitigation plan is of utmost importance and all too often forgotten. I have seen too many projects that did not have a proper risk mitigation plan resulting in serious budget overruns and delays.

Two key success factors in the development of large scale projects are a structured project realization process, a so-called stage gate process which is different than just monitoring progress of the project and project framing.

The Project Realization Process

The purpose of Project Development is:

- To define realistic promises and business-driven premises which are both technically and non-technically robust,
- Assessing risk and making an adequate risk mitigation plan.
- To ensure the scope is well-defined so that project can be delivered within budget and on the target completion date.

Two key success factors in the development of large capital projects are

- ✓ a structured **Project Realization Process** (a Stage Gate Process) and
- ✓ an adequate **Project Framing** process.

To be able to understand what framing is, we must discuss the so-called Project Realization Process first. The Project Realization process is a stage gate process which exist of a value

creation and a value delivery phase. Changes are allowed in the value creation phase but not in the delivery phase.

The Value Creation phase exists is the following steps

1. Identify (Identification of the opportunity)
2. Asses (Feasibility studies)
3. Select (Selecting the best project scope and the delivery of the BOD)

The Value Delivery phase exists of the following steps

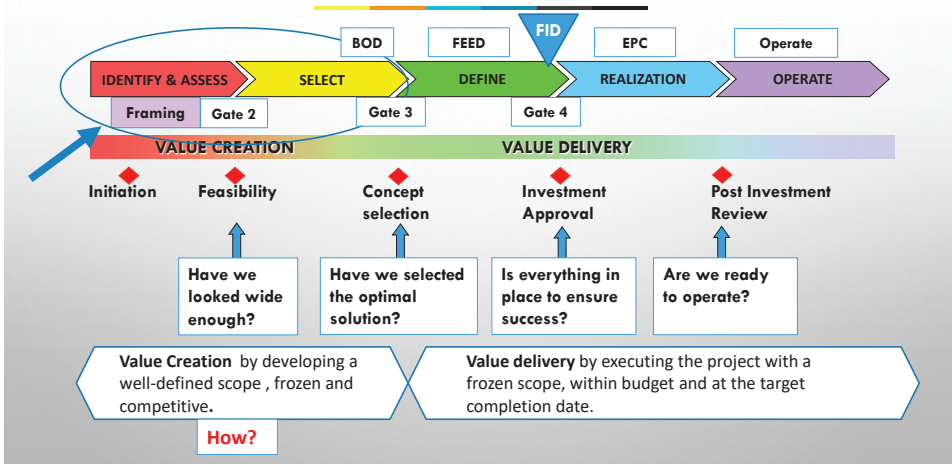
1. Define (FEED)
2. Realization (EPC phase)
3. Operate (the Operation of the facilities)

Once we have identified the investment opportunity, we usually carry out a feasibility study in which we review 2, 3 or perhaps 10 feasible options. The results of the feasibility study are presented to management in a gate 2 meeting. The project team also makes a proposal to study the remaining most attractive alternatives in further detail in the Select Phase.

In the Select phase, the remaining feasible options are further scrutinized. In this phase the best option is selected based on a set of criteria for technical, financial and economic robustness and thereafter the BOD is drafted including the cost estimates and schedule. The results of the studies in the Select phase are presented to management in a gate 3 meeting. After approval the Define phase can commence, i.e. the FEED will be carried out by the FEED contractor and the final costs estimates and schedule can be made. The results of the Define phase will be presented to management in the Gate 4 meeting. After the so-called FID (Final Investment Decision) the Realization phase can commence. The EPC contractor will be selected for the Detailed Engineering, Procurement and Construction activities. After Commissioning and the Integrity of the plant has been confirmed, the “Statement of Fitness” can be signed allowing the plant to start up.



The Project Realization Process



One of the key questions is how we should carry out the Value Creation phase? In the Value Creation phase we make concept selections and optimize the project prior to freezing the scope for the Value Delivery phase. A Framing workshop is an important activity in the Feasibility stage. Framing can be done once we have sufficient information of the oil or gas field we intent to develop onshore, in the Persian Gulf or elsewhere. Framing is done after Project Initiation and prior to the start of the Feasibility Studies.

What is framing? Framing is a structured workshop organized by the project team with all relevant stakeholders. We ask ourselves three very basic questions: “Where are we now?”, “Where do we want to be?” and “How do we get there?”. It looks very obvious, but I have been in too many projects myself where those questions were not asked causing scope changes, budget overruns, schedule delays, etc. Framing is neither an audit nor a review. It is a workshop done by the project team and stakeholders with an experienced facilitator. Who are participating? Participants are sr. representatives from the Business, the Project Team, Operations and relevant experts that can contribute to the discussions, typically

not more than 10-12 people. We agree on the project boundaries and the roadmap of the project which is called the project frame.

You may say that this is a little early in the project development process. Yes, that is because the project should get advice and concerted steer from stakeholder on the project frame as early as possible.

Sometimes, more and better information will become available during the feasibility studies. This may require a re-Framing workshop.

What is Framing?

Framing is a structured workshop to define

- **Where we are now?**
- **Where do we want to be?**
- **How are we going to get there?**

Sr. representatives of the Business, Project Team, Operations, etc. should participate!

It is a workshop to **upfront** define and agree the boundaries and the roadmap of the project (the project frame).

When? Typically at the start of the Feasibility Study.



It is
Not an Audit
Not a Review
It is a workshop
With the Team
By the Team

How do we address the question **Where are we now?** We talk about “what are our givens?”. What is an opportunity statement, what is stakeholder mapping, what are the value drivers, what are the critical success factors and what are the Opportunities and Threats? It may be very difficult to answer these questions but we must.

Where do we want to be? Well, then we must define: “What is success?” and ask whether the investment opportunity is a strategic fit?



How do we get there? This means that we try to answer questions like: what are the “show stoppers”, what are the risks and critical issues? We should make a stakeholder plan and define the focus decisions to be made at certain points in time. We should make a roadmap, a schedule and a Project Assurance Plan.

The Framing Process

A framing workshop is a structured facilitated workshop to get answers on the following questions

1

Where we are now?

1) Givens, 2) Opportunity Statement, 3) Stakeholder Mapping, 4) Value Drivers and Critical Success Factors and 5) Opportunities and Threats

2

Where do we want to be?

7) Definition of Success and Scope,
8) Strategic Fit (does it fit with the company strategy?).

3

How are we going to get there?

9) Show stoppers, Risks and Critical Issues, Stakeholder plan, Focus Decisions,
10) Roadmap and an Action/Assurance Plan.

Let me explain in more detail what we mean by answering the question “Where are we now?”. An example of “a Given” is: “we have to build the facilities in an area with remnants of war”.

Where are we now?

1

Where we are now?

1) Givens, 2) Opportunity Statement, 3) Stakeholder Mapping,
4) Value Drivers and Critical Success Factors, 5) Opportunities and Threats

I was the engineering manager of Yadavaran. If we would have known the impact on the schedule and costs of removing remnants of the war early in the feasibility study phase, we



could have delivered the project one or two years earlier. But we didn't know, we didn't understand the impact on the schedule and costs of removing remnants of war. Remnants of War is a "given" which the project manager cannot change. He should have made a plan early in the project about how to remove the mines, etc. well before the start of the site preparation activities.

Another example is: "There is insufficient qualified labor in the country". For example, when Shell built the Gas to Liquid plant in Qatar, they had to bring in thousands and thousands of labor from the Philippines, Nepal and other countries to Qatar. This was a given for which you have to plan very early in the project (training, accommodation, logistics, etc.).

Another example is: "There is a poor HSE culture among construction contractors". This is an important challenge not just in Iran. You must plan the actions for improving the HSE culture very early in the project definition phase.

An example which is not a "Given" is "the oversupply of oil on the world market is expected to last for at least another 5 years". This is not a "Given" not even a risk, but an uncertainty. This subject should appear on the list of Risks and Uncertainties.

So, it is very important to make a list of givens you cannot change in the project. You must deal with them, manage and create "work arounds".

1 What are Project Givens?

Examples of Givens:

- We have to build the facilities in an area with remnants of war (affecting availability of early information from soil investigations).
- There is insufficient qualified labour in the country.
- There is a poor HSE culture among Construction Contractors in the country.
- **The oversupply of oil on the world market is expected to last for at least another 5 years (This is not a given. It is an uncertainty!).**



Another very important subject is the definition of the opportunity statement. What is an opportunity statement? It tells all the stakeholders why we want to do this project, what the opportunity is and what value it brings to the company. It typically takes one or two hours of discussion to agree on 3 to 5 sentences defining the opportunity statement. Let me give an example:

We will develop the XXX oil field by delivering maximum asset value with competitive life cycle costs achieving early production and delivering long term asset sustainability.

1

Opportunity Statement

The **Opportunity Statement** defines the essence of the opportunity and is used for communication with all stakeholders:

- Why do we want to do it?
- What, precisely, is the opportunity?
- What value does it bring to the company?

It should be short and crisp, describing the full life cycle of the opportunity.

Example of an Opportunity Statement:

"We will develop the XXX Oil field by delivering maximum unit asset value, with competitive life cycle costs, achieving early production, and delivering long term asset sustainability."

This is a statement agreed with all stakeholders in the workshop. Delivering maximum unit asset value means that we don't minimize CAPEX at the cost of extra Opex or increase Capex to minimize OPEX, instead we minimize the total life cycle cost to maximize the unit asset value. Achieving early production means that with early production facility funds can be raised to finance the main project itself. Delivering long term asset sustainability means that we care about our environment and e.g. provide job opportunities for labor from nearby villages.



This is just an example of how you could make an opportunity statement defining how you are going to develop the project. It aligns all stakeholders and can be used as a reference in the further development of the investment opportunity.

Value drivers are those elements that maximize the value of the project. That is not necessarily money, it could be other subject as well. We, therefore, need to define the success factors. These are the actions that must be undertaken to maximize the value of your project.

Value Drivers and Critical Success Factors

Value drivers maximise the value of the project. **Critical success factors** are those actions that the project must undertake to **maximise the project value** or mitigate risks.

Example are:

Value Drivers

Low Opex

Minimum Capex

Maximum Cash Flow

HSE goals

Critical Success Factors

Look at de-manning of the platform

Benefit from synergies with existing production facilities

Batch drilling

Re-use existing wells (e.g. side tracks)

Early production facilities for project funding.

No fatalities

For example, the value driver “low OPEX” could mean that we increase CAPEX for de-manning the platform. If the value driver is minimum CAPEX, then you must define what you mean by that. You cannot leave that to the project team to define minimum Capex. All stakeholders in the workshop should agree about what minimum CAPEX is. E.g. the project could perhaps benefit from synergies with other production facilities, e.g. using ullage in existing pipelines or batch drilling or the re-use of existing wells through side tracking. If you say we go for maximum cash flow, then early production facilities might be an option



for project funding. If you say HSE is an important value driver, then you must take actions to avoid fatalities in the Realization and Operate phase of the project.

In this way we try to avoid undefined statements of success. Instead we precisely define the value drivers and the critical actions to achieve success.

The question “**Where do we want to be?**” is all about defining success. Examples are the minimum the recovery factor of an oil field, the time to achieve stable and reliable production, no budget overruns or no fatalities. We quantify what we mean by success. The definitions of success should to be tested against the Opportunity Statement. They should not conflict with the Opportunity Statement.

2 Where do we want to be?

Defining “where we want to be” is all about **defining Success** and Strategic Fit.

For example :

We have achieved success if:

- 1) Recovery Factor = 65%
- 2) Reliable operation within 1 months after RFSU
- 3) Ready for Start Up on or before e.g. 1-10-2020
- 4) No budget overruns.
- 5) No fatalities
- 6) A strategic fit matching the resources and capabilities of the company

Note: Success must be quantified!!

Definitions of success need to be tested against the Opportunity Statement!

How do we get there? You should define the show stoppers up front. Examples are a long term off-take contract with product prices below target levels or serious terroristic threats such as in some regions in Iraq. If such events occur the project may be canceled, delayed or fundamentally modified. It is a no brainer that show stoppers should be identified very early in the project.



How are we going to get there?

How are we going to get there?

3

9) Show stoppers, Risks and Critical Issues, Focus Decisions, Stakeholder plan,

10) Roadmap and Action/Assurance Plan

Risks can be classified as follows:

- Technical
- Economical
- Commercial/Legal
- Organizational
- Political/Stakeholders/Reputation

A risk register should be made to define the risks and the measures to eliminate or reduce the risks to acceptable levels.

Examples Show Stoppers and Risk

Examples of **Show Stoppers** are:

- A long term off-take contract with product prices below target levels.
- Serious threats of terroristic actions in the region.

Examples of **Risk** are:

- Technical Risk
- Economic Risk
- Commercial Risk
- Organizational Risk
- Political Risk



Focus decisions are those decisions that have to be made at particular points in time and to avoid scope changes, cost increases or delays.

Some examples of focus decisions that need to be made at the gate meetings are:

At Gate 2 (prior to start the Concept Selection):

- 1) Standard production facilities or a new technology
- 2) The design throughput of the processing facilities

At Gate 3 (prior to start FEED):

- 1) The final selection of the site location to build the plant
- 2) Contracting Strategy

Examples Focus Decisions

Focus decisions are key decisions to made before we can go to the next stage of the project (e.g. from Concept Select to FEED)

At Gate 2 (prior to start the Concept Selection):

- Standard production facilities or a new technology
- The design throughput of the processing facilities

At Gate 3 (prior to start FEED):

- The selection of the site location to build the plant
- Contracting Strategy

The output of the Framing workshops is a report/ presentation about the workshop achievements, agreed by the parties that participated in the framing workshop and will include:

- A Roadmap
- The overall timeline
- The resources required



Framing Output

Based on the results of the FRAMING workshop, we can make

- A Roadmap defining:
 - The Milestone decision points
 - The Action Parties and Decision makers
 - Deliverables, reviews and other key actions that support the milestone decisions
- The overall timeline
- The resources required

The outcome of the Framing workshop will be presented to sr. management for advice and steer.

A roadmap is not a schedule. A road map is a decision based high level plan defining all decisions, reviews and key actions at or before specified milestone dates. It lists the action parties and the decision makers that should make these decisions or approve proposals.

The outcome of the framing workshop will be presented to senior management at the end of the framing workshop, seeking advice and steer. If approved the feasibility studies can commence.

Companies that apply framing have seen the benefits. I hope that this presentation gave you a good impression of what Framing is and among other methods can help us to improve the success rate of our projects.

Thank you very much for your kind attention.



Helge Hoefft

Director Upstream / Senior Project Manager

Education

BTU Cottbus, Germany, M.Sc. in Process Engineering, 2002

Key Qualifications

Very experienced Project Manager and Process Engineer in the Upstream business of the Oil and Gas industry. Coming from on- and offshore oil and gas production operations at BP, the knowledge has been transferred to managing diverse multi-discipline teams for Feasibility, Concept Selection, FEED, Detailed Design and PMC projects of Greenfield and especially Brownfield developments. Special focus set to process safety studies and risk assessments (HAZOP, SIL, Health Check, Operation and Construction), commissioning of oil and gas production and production water treatment facilities, production optimization, facility debottlenecking, operational troubleshooting, root cause failure analysis, gas hydrate formation and removal and development of operating procedures.



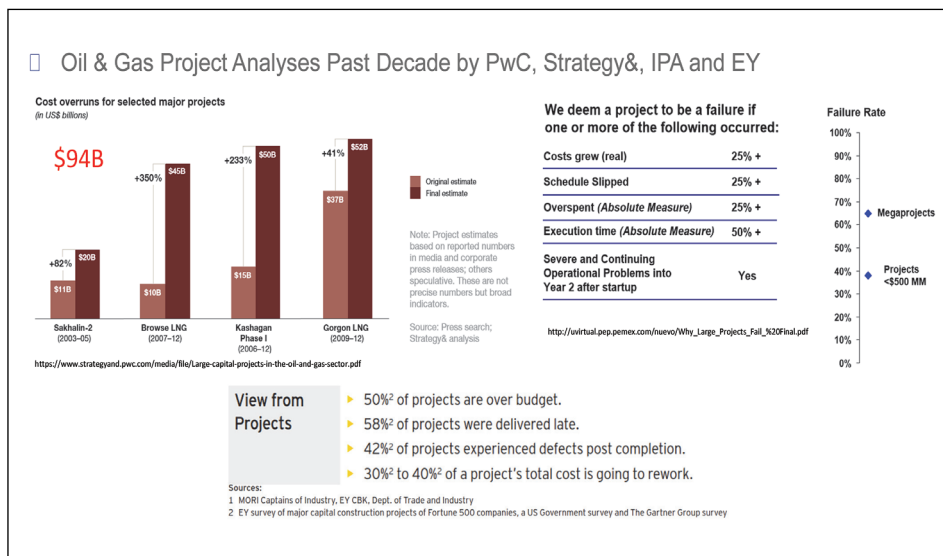
Global Trends and Developments in Project Management of E&P Projects and Potential Lessons Learned for Iranian Field Developments

Helge Hoefft

Dr. Dehghan thank you for the kind introduction to me. Good morning ladies and gentlemen.

I'm very honored to stay here in front of you to talk about "the global trends and develop project managements and its challenges". I will take you through some global trends. I will talk roughly on basic principles and best practices that Mr. Hogendorn for sure goes a lot more on detail on these items. I give you some overview on what it means to be in top quartile project execution.

A few studies from various companies and consultants showed in the last years or last decade as a matter of fact that a lot of value has been destroyed in executing projects. As you can see here from PWC strategy, IPA and EY; a huge amount of projects is going completely the wrong way. According to IPA which has the largest projects database around the world, about 65 percent of mega projects are failing in their execution stage and about 40 percent of smaller projects with an investment value of smaller than 500 million US \$ are still going the wrong way, they are not creating the value that the company hope to create in the first place. If you take for examples, these projects on their own wasted from the first estimate to the final execution in the order of 100 billion US \$, how many projects can you do in Iran for that kind of money? It's an unbelievable failure and how does it come?



It was analyzed and the key finding is that the most projects fail in front of loading phases. they are not putting enough man power, enough money and enough emphasis on the front loading phases starting from feasibility through to concept going to fit.

A lot of projects are using the **incorrect assumptions**. What does it mean? Not every project has got the first initial data set ready from they want, so you have to take assumptions, but unfortunately many of these assumptions dealt when it is too late. Then you start doing re-engineering, you start devalue your project at the end.

There is a constant **change** in all levels in the projects not just technical changes but also changes that specially are problems from mega projects. In organizations, project managers are changing, the executives of the companies are changing and as soon as every time a new manager comes along, he wants to do it in a different way and that is never good for the execution of a project.

There is a **lack of the qualified resources**. In the past when the oil price was high, you could hardly find the right people on the market so you had to deal with the C and D and



sometimes even E teams, who are just from universities and you can't do proper projects with these type of people.

Inadequate risk management; a lot of people don't want to listen to people who talk about risks but if you don't tackle the risks early enough, they hit you in the project execution later on operation phase and then you devalue entire project incredibly to a major extent.

Poor project controlling; this is an ongoing problem. People don't want to pay for controlling projects, not on schedule, not on cost and these are two main drivers to keep projects on progress. A lot of people lie to themselves and lie to other stake holders just to stay in the good light. So they rather hope that the problem goes away in later stage and would never happens, as a matter of fact it becomes a bigger problem most of the times.

Contract strategies; if you don't set up your contracting strategy during the loading stage, you waste a lot of time and money by the time you want to come to execution and that is a major devalue because it typically ends up in different production which is never good for any kind of operator.

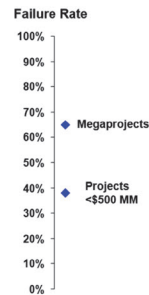
Stake holder management; this is not just the client and the contractor. it is also the people living in the area where you want to build and executive project. It is the environment and indigenous people that live there. If you take them too late in the project, you face them in the execution phase and they simply put your project in trouble or in need to do a lot of re-engineering that cost money and time.

Lack of leadership; due to the high oil price a lot of projects slowdown in the execution phase. How many projects can lead a follow at the same time? Again they didn't give enough emphasis specially to smaller projects. everybody focuses only on mega projects forgetting about the smaller ones.

And the last but not least; the **external factors**. A lot of companies cannot deal with changes in market conditions as well as due geopolitical environment.

IRANIAN PETROLEUM AND ENERGY CLUB Global Trends and Developments

- What are the Causes of such Project Failures?
 - Poor pre-Final Investment Decision (**FID**) **planning** (Feasibility, Concept & FEED)
 - Incorrect **project assumptions**
 - Constant **changes** on all levels
 - Lack of qualified **resources**
 - Inadequate **risk management**
 - Poor **project controlling** (schedule, cost, etc.)
 - Late decisions on **contracting strategies**
 - Insufficient **stakeholder engagement**
 - Lack of **leadership**
 - Change in **market** conditions
 - Change in **geopolitical environment**



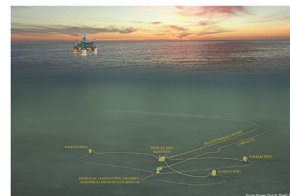
You can only take best guess if your project is running for 4 years or 5 years by the time it comes to execution. Keeping that in mind though, the last study from Wood Mackenzie shows that a number of projects are not only back on track by the execution on time and budget, sometimes even exceeding the original budget and schedule expectation.

IRANIAN PETROLEUM AND ENERGY CLUB Global Trends and Developments

- Latest Trends in Industry – Getting Back on Track?

Very recent study by Wood Mackenzie indicates

- Increasing list of **projects** that are delivered **on time** and **in budget**, e.g.:
 - West Nile Delta (BP)
 - Atoll (BP)
 - Shah Deniz Phase 2 (BP)
 - Zohr (ENI)
 - Cape Three Points (ENI)
 - Yamal LNG (Novatek)
 - Kaikias (Shell)
 - Maria Subsea Tie-back (Wintershall)
 - Persephone Subsea Tie-back (Woodside)





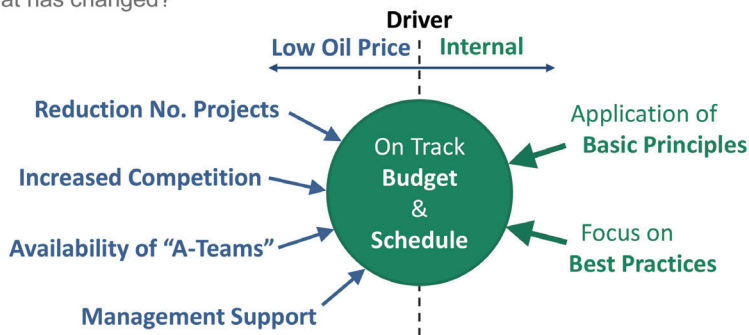
Here are just a few of them, so one has to ask a question what has changed? why are these projects back on track? As I mentioned before there are some external drivers like the low oil price that meant a huge number of projects that are on hold were suddenly been canceled from the execution strategies of the various companies. And that meant there is an increased competition on the market for executing projects. You had a greater choice to get the right company to work with. The so called A-teams with the most competent people were available on the market again, because they were so few projects on. So you got the best people that you can find on your projects therefore, you stay in schedule and on budget.

Last but not least; a major factor is less project, which means a lot more focus from the management on the few projects that are on the market. But these are not the only drivers, this is externally driven. A big change of the internal drivers within the companies are putting a lot more focus on best practices and basic principles on project execution and this is at the end of the day bringing the value.

IRANIAN PETROLEUM AND ENERGY CLUB Global Trends and Developments

- Latest Trends in Industry – Getting Back on Track?

What has changed?





What does it mean the best practice? A best practice is a proven record of success on every stage of the projects coming to cost schedule, quality performance and safety environment creating the most value for the organization. One of these best practices is the proven life cycle specially in P developments and everybody knows about these five cycles which is: Appraise, Select, Define, Execute and Operate, but hardly anybody lift according to it. Because the decision gates as they are shown there, where formulized once people were rushing fast track projects, they were passing through the gates without having had the right information to pass through it. any simple information they say or the simple decision they make, we deal with them at a later stage, and you hear that you are going to delay the project and bring more cost to your field development. you do identify your value of your project in the appraise phase, this is when you find oil. But by that time, you only make the decision whether to go forward or not.

The value creations the fund and loading phase are the most critical parts in your project development because here you are looking at different technologies, different ways and optimum ways of project execution and you compare them to each other to find out what is the most value for my organization and for what I want to do. The value definition phases only set the execution phase in reality. That means that the execution contract on the later stages knows exactly what you need to do when executing the projects. That means as a risk reduction to the vast extent which is possible to actually get a d-risk and cost effective execution contract on board.

And later on, this is the value realization phase and later on you generate the value that you plan for. That means you operate and produce barrel and gas to actually get the money in. The proven and best practice and all of these are to make sure that you have got proper decision support packages that define the maturity of your engineering through each of these phases and finally to appoint that senior management who can make the decision at the gate. This is where it all went wrong in the past. People say: “well, you know if I



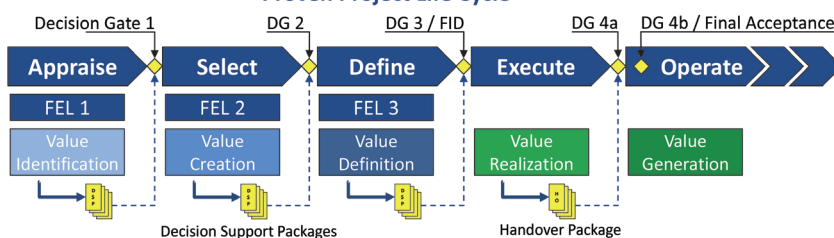
don't have proper production profile at this time, we are going to change that and fix it during fit". I have seen so many production profile still changing during fit and execution phase and this is impossible for any contractor to deal without adding cost and creating a long schedule. As a matter of fact, you may end up with the wrong facility all together.

IRANIAN PETROLEUM AND ENERGY CLUB Basic Principles and Best Practices

□ Common Basic Definition **Best Practice:**

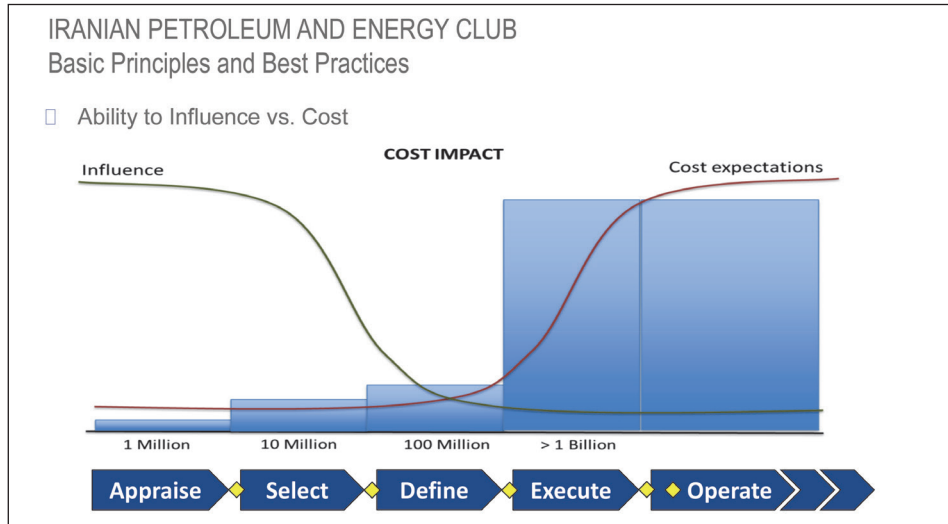
*"A process, technique or innovative use of resources that has a **proven record of success** in providing significant improvement in **cost, schedule, quality, performance, safety, environment** or other measurable factors that impact the health of an Organization."*

Proven Project Life Cycle



This is one of the graphs that everybody should know: The major influence on any of your projects you have during appraise and select phase where you spend the least money on your project. The problem is that you may waste the money before you know whether to go through the final investment decision. And that's the biggest problem for clients and for us as ILF, because this is where we see our biggest business to create value for the contractors. But this means and lets you go completely sure when you execute a project, you actually don't know whether you want to invest us money and this is where a lot of times the wrong company are getting involved in the early phases like an EPC contractor. At the end of the day, they form a phase to define when you have the major influence on your contract on your field development and you have the least cost but you still talk

about 8 -50 percent that should go in that phase of the overall investment.



Why is that? Coming back to the application of the best practice, the importance of leadership, if you have your decision support packages ready you can make decisions and leaders should take decisions and not trying to make decision in a later stage or even giving the responsibility to somebody else. Corporate discipline; this means you are sticking to your prestigious. If you stick to your prestigious that are proven and giving the most values for your projects in the past, you should stick to this and making sure that you are getting most value from what you plan.

Continues risk management; you need to know the risks at every stage of your project to be able to mitigate them. If you try to hide the risks, I assure you that risks will come back to you at later stages hitting you a lot harder.

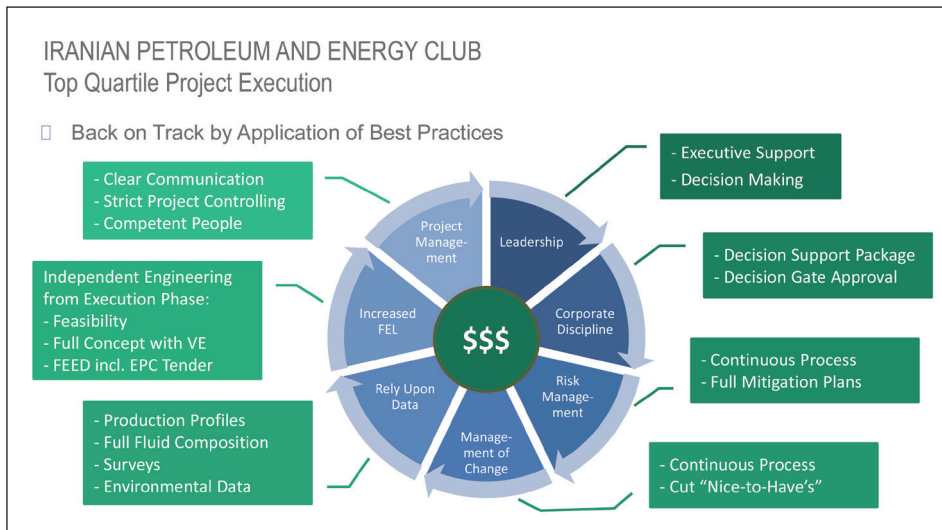
Management of change; it is also a continues process. One of the biggest mistakes is getting a knife and hack the project life cycle. The management of change process project life cycle should ensure that these knives have to cut out, not for personal reasons getting



through the system, because that means a lot of times, a lot of reengineering along the line. Rely upon data, this is a real problem in the recent years; fast track projects or even superfast track projects are not giving enough emphasis on getting the basic data you require to do re-engineering. These are just a few examples, production profiles are mentioned before, changing all the time. Flute composition and also with the emphasis of unwanted component like mercury and other impurities. A lot of people always say just a little bit of this and that may haven't major influence on engineering because it's not a lot. But micrograms of mercury are a lot of mercury. Nano gram is fair enough less, but it has a major impact on mature selection. As an example if you are having a very called process for NGL production, surveys are also a major problem. We have been recently in a project where we had to move the central processing facility twice because new service suddenly showed that there wasn't ecological site and that is obviously a problem you cannot touch it. If you had done the surveys at front, wouldn't have lost three months removing or moving the site from one to another all the time. Sometimes even environmental data is a problem. In Beijing in 2011, on the Yadavaran project supervising the detail engineering team, the wind speed was wrong in detail reengineering. If the wind speed stayed in the number that they have given, this would have been a lot of still on the ground. Fortunately, we could rectify that later on and had a proper structure on the ground later.

During the concept phase, when you do value engineering and value creation which a lot of projects are forgetting that, value engineering can only happen during the full concept phase. And last but not least, it is the project management. Clear communication; if people don't know what they need to do and by when they need to do things, then it's a project failure that is already poor grant. Strick project controlling helps to stay on cost and schedule and you can develop mitigation plans in place to make sure that you can recover any lost and cost in your schedule and competent people. At the end of the day, always come back

to competent people. When leadership make decisions or an engineering select the right technology, brings the real value to your projects.



I come now to the last slide that is build up in a few moments; coming to the front end loading phase. This is driven initially by subservice engineering and later on by the service engineers to build the best value. What can happen here? If you have a poor project definition, I promise you will get a miserable value at the end of the project life. Whoever choose to go that way, will choose also later on the wrong execution and the wrong operation management. You do create a massive amount of value if you have an excellent project definition. This is what you need to gain and this is the price if you invest in the select phase during a concept engineering. This is when you look in detail at every single piece of technology at the execution strategy at the contractual selection etc. This is in terms of value creation, the most advanced and the most important phase. And unfortunately, this is given in many cases the least attention nowadays. But this is really if you want to have sustainable development, this is the phase you are looking at. Through some discussions



in another countries lately I heard the sentence: “Oh, we get the feasibility concept for free from the EPC contractor”. No, you won’t get it for free, you pay later on. You pay later on the execution phase because he will put a lot of risks in the execution phase which you need to pay for. Also, he doesn’t care whether you have sustainable development at the end of the project, he wants to earn money, he doesn’t work for you as a consultant, then, you will end up having a devalued project. And later on, an operation management, re-development phases like IOR and EOR. You actually start at this end again for the brown field engineering as well. If you choose the wrong way, you end up in a miserable situation. Even with the excellent project definition, if you start with the wrong execution strategy, you can devalue your project again by taking execution contract on both that has not the right competent people, that has not the right process in place and you still end up with only getting a moderate value for your project. On the other hand, if you already see that your project is going on wrong way, by having a top execution company, you may improve your miserable value and you may come to a moderate result or a poor result. I’m sure that Mr. Hogendorn will go a lot more on detail giving you a lot more to think about than I do. Thank you very much for your attention.

