Il Risk Management nei progetti chiavi in mano Saipem

Convegno AICQ-CI
La qualità e la sicurezza nelle infrastrutture

Roma, 6 dicembre 2018
AGENDA

Today’s Presentation

- SAIPEM TODAY AND ITS ORGANIZATIONAL RISK MANAGEMENT MODEL
- INDUSTRIAL RISK MANAGEMENT
  - FUNDAMENTAL ELEMENTS
  - STRATEGIC DRIVERS
  - CLIENTS REQUIREMENTS
  - KNOWLEDGE CAPITALIZATION
  - MONITORING, CONTROLLING AND REPORTING
The Company

Saipem is one of the world leaders in drilling services, as well as in the engineering, procurement, construction and installation of pipelines and complex projects, onshore and offshore, in the oil & gas market. The company has distinctive competences in operations in harsh environments, remote areas and deepwater. Saipem provides a full range of services with “EPC” and “EPCI” contracts (on a “turn-key” basis) and has distinctive capabilities and unique assets with a high technological content.
**SAIPEM TODAY AND ITS ORGANIZATIONAL RISK MANAGEMENT MODEL**

Why Risk Management is so important

**To Help DERISKING the BUSINESS MODEL**

- The market scenario is increasingly challenging (few projects to focus on, with a competition that is now up to highest standards)
- Projects are remunerated for the underlying risk profile
- Risk management, both in the commercial and in the execution phase, is of FUNDAMENTAL importance in the market in which Saipem operates:
  - to take the projects at best - Commercial phase
  - to protect the margin during the whole Execution Phase

**To COMPLETE the Project Framework**

- Projects are presented with their economic and financial elements (revenues, costs, contingencies, k, cash flow)
- To complete the PICTURE, risks and opportunities are needed to define:
  - the GROSS MARGIN CONFIDENCE LEVEL which represents the probability to meet the margin forecast
  - The VALUE at RISK

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### Our SOLUTION

- Implement a company-wide, standardized, systematic, quantitative tool to manage R&O at Business and Corporate level as part of overall Enterprise Risk Management (ERM).

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**DE-RISKING THE BUSINESS MODEL**

<table>
<thead>
<tr>
<th>Reduce risk across the portfolio</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Commercial discipline</strong></td>
</tr>
<tr>
<td>- Plan management and assess key project/contractual risks</td>
</tr>
<tr>
<td>- Select risks on opportunities</td>
</tr>
<tr>
<td>- Strengthened risk analysis</td>
</tr>
<tr>
<td><strong>Rebalanced Service mix</strong></td>
</tr>
<tr>
<td>- Plan engineering and production work commitments</td>
</tr>
<tr>
<td>- Alternative contractual schemes</td>
</tr>
<tr>
<td>- EPPs: Embedding customer’s responsibility with clients</td>
</tr>
<tr>
<td><strong>Group</strong></td>
</tr>
<tr>
<td>- Strategic partnerships to high value-added services (e.g., DAS, TDC)</td>
</tr>
<tr>
<td>- Manage to balance and exploit opportunities through cooperation / partnerships (e.g., JVs, etc.)</td>
</tr>
<tr>
<td>- Commitment to reduction excellence</td>
</tr>
<tr>
<td>- Early engagement and proactive cost-efficiency solutions</td>
</tr>
</tbody>
</table>

| Partnerships |
| Focus on client relationship |

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**+ Revenues - Costs - Contingencies = Margin**

- **Risks**
- **Opportunities**
SAIPEM TODAY AND ITS ORGANIZATIONAL RISK MANAGEMENT MODEL

Organisation and focus areas

SAIPEM RISK MANAGEMENT

ENTERPRISE RISK MANAGEMENT
- TOP-DOWN approach
- FOCUS ON: Strategic, External, Reputational Factors

PROJECT RISK MANAGEMENT
- BOTTOM-UP approach
- FOCUS ON: Project Risk Factors

ENTERPRISE
- Risk assessment process aimed at identification, evaluation and management of the main company risk
- Monitoring of risk identified in the assessment phase and measure of treatment actions undertaken

INDUSTRIAL
- Implementation of Industrial Risk Management Methodology on projects, either in commercial and in execution phase, guaranteeing a correct assessment of risks/opportunities and contributing to the identification of actions for their optimal management
- Development and updating of Risk and Opportunity Breakdown Structure and Golden Rules and Silver Guidelines
- Enhancing the Knowledge Capitalisation related to Industrial Risks
Industrial Risk Management in Saipem is based on

Risk Appetite Framework (RAF)
The amount of risk, on a broad level, Saipem is willing to accept in pursuit of value.

Golden Rules and Silver Guidelines (GR&SG)
Set of rules collecting and summarizing the multi-year experience of Saipem as an international Oil & Gas contractor in order to manage and address contractual issues.

Bid Complexity Index (BCI)
Scoring Model based on Evaluation Criteria and thresholds that trigger processes/actions

Project Risk Management (PRM)
Management of Project risk, defined as "an uncertain event or condition that, if occurring, may have a positive or negative effect on a project’s objectives".
INDUSTRIAL RISK MANAGEMENT
FUNDAMENTAL ELEMENTS

Risk Appetite Framework (RAF)

Risk Appetite: The amount of risk, on a broad level, an entity is willing to accept in pursuit of value.

Risk Tolerance: The amount of risk, on a broad level, an entity is unwilling to exceed.

Risk Capacity: Maximum level of risk an entity is able to address.

It acts on:

<table>
<thead>
<tr>
<th>Investments</th>
<th>Board Approval required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractual Discipline</td>
<td>Golden Rules framework and deviation authority</td>
</tr>
<tr>
<td>Finance</td>
<td>As detailed in Golden Rules (Company Payments and Client Credit Worthiness)</td>
</tr>
<tr>
<td>Contract Duration</td>
<td>Maximum Contract Duration</td>
</tr>
<tr>
<td>Expected Marginality</td>
<td>Yearly target marginality set for each BU</td>
</tr>
<tr>
<td>Portfolio</td>
<td>Balanced portfolio in terms of Country and Client</td>
</tr>
</tbody>
</table>

Off-strategy risks¹ | On-strategy risks²

¹ Off-strategy risks are risks the Board and Management have no appetite to assume
² On-strategy risks are risks the Board and Management are willing to accept
INDUSTRIAL RISK MANAGEMENT
FUNDAMENTAL ELEMENTS

Bid Complexity Index (BCI)

**DRIVERS FOR ONSHORE AND FLOATERS PROJECTS**

<table>
<thead>
<tr>
<th></th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> Contract Value (MEUR)</td>
<td>20-200</td>
<td>200-500</td>
<td>&gt; 500</td>
</tr>
<tr>
<td><strong>B</strong> Contract Type</td>
<td>Reimbursable</td>
<td>Unit Price</td>
<td>Lump Sum</td>
</tr>
<tr>
<td><strong>C</strong> Business Segment</td>
<td>Environmental Systems</td>
<td>Upstream Field Development</td>
<td>Occasional Presence</td>
</tr>
<tr>
<td><strong>D</strong> Location (Track Record)</td>
<td>Consolidated Presence</td>
<td>Occasional Presence</td>
<td>1st PRJ for Saipem</td>
</tr>
<tr>
<td><strong>E</strong> Client (Track Record)</td>
<td>International Clients</td>
<td>National/Local/Independent Clients</td>
<td>Excellent Track Rec'd</td>
</tr>
</tbody>
</table>

\[ A + B + C + D + E = X_n \Rightarrow \text{Complex Project!} \]

It acts on:
- **Commercial Phase**
  - BCI \( \geq X_1 \), Peer to Peer Meeting (1)
  - BCI \( \geq X_2 \), Bid Evaluation Committee

- **Award**
  - Proposal Manager (Supported by the Risk Manager)

- **Execution Phase**
  - Check and Balance (2)
  - Project Manager (Supported by the Risk Manager)

**Notes**

1. **Peer-to-peer** meeting aiming at consolidating the risk register and related project risk profile; attended by representatives of Commercial and Execution departments.
2. **Check and Balance** meeting aiming at controlling the implementation of Industrial Risk Management Activities and validation of the Risk Register.
INDUSTRIAL RISK MANAGEMENT
FUNDAMENTAL ELEMENTS

Golden Rules & Silver Guidelines (GRSG)

- Best Practices transferred into essential rules whose waiver could jeopardize Saipem’s interests and goals.
- Specific Procedure to be followed in order to derogate.

It acts on:
- COMMERCIAL PHASE
- PARTNERSHIP ON PROJECTS

For Commercial phase and partnership, Saipem has identified:
Golden Rules with exceptions formally authorized by the Top Management.

<table>
<thead>
<tr>
<th>RULE CODE</th>
<th>GENERAL AREA</th>
<th>SPECIFIC ISSUE</th>
<th>GUIDELINE</th>
<th>NOTES / SUGGESTED WORDING</th>
<th>DEVIATION BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON C G 07 04</td>
<td>Execution Risks</td>
<td>Site</td>
<td>Avoid responsibility for delays and extra costs due to archaeological findings / artificial physical obstructions.</td>
<td>“If during the execution of the Work the Contractor shall encounter archaeological findings / artificial physical obstructions differing from those set forth in the Contract, the Contractor shall forthwith give written notice thereof to the Company and the Company shall issue a Variation Order to properly take into account the relevant impact in cost and/or schedule caused to the Contractor by reason of such differing conditions.”</td>
<td>UNAVAILBLE</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>CEO (Bid Evaluation Committee)</td>
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<td>DIVISION MANAGER</td>
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<td></td>
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<td>PRODUCT LINE MANAGER</td>
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<td></td>
<td></td>
<td></td>
<td>PROPOSAL MANAGER</td>
</tr>
</tbody>
</table>

...the more useful the more the commercial process is decentralized
Project Risk Management (PRM)

**RISK: Uncertainty that Matters**

Project risk is an uncertain event or condition that, if occurring, may have a positive or negative effect on one or more project objectives such as scope, schedule, cost, and quality. (PMI, PMBOK 5th Edition)

**RISK MANAGEMENT**

The continuous process of identifying, analyzing and responding to project risks.

- **Initiation**
- **Identification**
- **Risk Response Planning**
- **Evaluation**
- **Monitoring and Control**

[Diagram showing the risk management process]

**Risks ≠ Issues**

- **Management of Risks, No elimination of risks, as that would eliminate the reward**

**Commercial phase**

- Definition of a complete and transparent risk register including all risks identified during commercial phase, both for commercial and execution phase.
- Evaluation of each risk.
- Launch of the Montecarlo Simulation in order to identify PXX as the minimum level of contingencies to be taken into consideration in the final price before the offer submission.

[Chart showing cumulated probability and expected cost due to occurred risks]

**Execution phase**

- Updating the risk register with new risks identified during the execution of the project.
- Comparing the level of contingencies with the Monte Carlo curve in order to identify the risk coverage and the Value at risk of the project.
Set up a Peer to Peer Review Meeting with the aim to consolidate the Risk Register and its related project risk profile, with the participation of the Risk Management Function, the Proposal Manager responsible for the offer as well as the Project Execution Function.
INDUSTRIAL RISK MANAGEMENT

STRATEGIC DRIVERS

Industrial risk management process - Execution phase

Legend:
Functional link (PM Function)
Working link (Project)
Supervisory link (OMRM Function)
Industrial risk management process - Execution phase

*Check and Balance* meeting aiming at controlling the implementation of Industrial Risk Management Activities and validation of the Risk Register
Workshop Client + Contractor during Detailed Design and Construction

Probability and Impact Matrix to be aligned with Client Program Risk Management
INDUSTRIAL RISK MANAGEMENT

CLIENT REQUIREMENTS

Contractor to use Client Database/Software and Report according to Client Standard

[Image of software interface with tables and charts]

[Text: Active Risk Manager]

[Text: Arm SAIPEM]
CONTINUOUS EFFORT

Project Risk Profile Identification

Pre-Bid

Kick Off meeting

1. Initiation
   Risk Management Plan

2. Identification
   Identification of the Cause, the Event and the Effect (on the project objective) of the R&Os

3. Qualitative Analysis
   Prioritization of the risks and opportunities

4. Quantitative Analysis
   Expected Economical Value of R&Os

5. R&O Response Planning
   Appropriate actions to be implemented during the execution period

6. Monitoring & Control
   Ensure the continuity of the process

Project Risk Profile Monitoring

Bid

Execution

Risk Register Final Update

Debriefing Meeting

Close-out

Knowledge Base

Risk Register update

• Critical Risks, Occurred
• Critical Risks, Successfully Mitigated
• Unidentified Critical Issues, Occurred

KNOWLEDGE CAPITALIZATION

- How many times have similar risks occurred on the same kind of projects?
- Why do I think that the probability is lower/higher now?

- Have our risk evaluation proven to be pessimistic, optimistic, neutral?
- Are there any biases affecting our evaluations?
## INDUSTRIAL RISK MANAGEMENT
### MONITORING, CONTROLLING AND REPORTING

<table>
<thead>
<tr>
<th>Controlling the Process</th>
<th>Monitoring the Risk Profile</th>
<th>Providing Management Tools</th>
<th>Other analyses</th>
</tr>
</thead>
</table>
| Controlling the process through high level indicators:  
  - Are we covering our backlog?  
  - Is the information Up-to-date, Complete and/or reliable?  
  - Are we following the applicable procedures? | Monitoring the risk profile in terms of:  
  - Is the portfolio balanced?  
  - How is the risk profile moving?  
  - Do we have enough contingencies? | Which are the type of risks mostly impacting the Project/Business Unit?  
  - Are they incidental or systemic?  
  - Who has the levers to help my project? | Are there any biases affecting our evaluations? |

**RISK COVERAGE (RC):** Risk Coverage (RC) is the confidence level that Contingencies will be enough to cover the impacts of all the risks occurring on the Project/Portfolio, or, in other words, the probability for the Project/Portfolio to meet the Current Margin forecast.

**RISK EXPOSURE (RE):** Risk Exposure (RE) is equal to 1-RC and represents the probability for the Project/Portfolio not to meet the Current Gross Margin Forecast.

**Value At Risk (VAR):** Value at Risk (VAR) is the residual (i.e. not covered by Contingencies) risks impact that the Project/Portfolio could face within a confidence level of 75%.
THANK YOU