Our business approach

Risk Management

Manage your risks to prepare your future and achieve your objectives
A world leader in engineering, project management and technologies, serving the energy industry for more than 50 years

A regular workforce of 30,000

Confirmed leadership and proprietary technologies in 3 business segments:

**Subsea**

In subsea hydrocarbon field development, Technip’s activities include the design, manufacture and installation of rigid and flexible subsea pipelines and umbilicals. Thanks to its portfolio of technologies and industrial and operational assets, Technip offers a unique vertically integrated model in the industry. The Group has 3 flexible pipe manufacturing plants, 4 umbilical production units, 9 logistics and pipeline assembly bases, and 1 construction yard. Technip’s worldwide leadership is supported by a modern fleet of vessels for subsea construction, pipelay development (rigid and flexible pipes using S-Lay, J-Lay or Reeled technology) and heavy lift applications.

**Offshore**

In the Offshore business segment, Technip performs engineering, procurement, construction, installation, commissioning and the refurbishment/upgrading of offshore facilities for the oil & gas industry. Technip provides these services for fixed platforms in shallow water with conventional sub-structures and self-installing platforms such as the TPG 500 and for deepwater facilities including Spar, semi-submersible, TLP, FPSO and FLNG units. Technip is a world leader in floatover installation of topsides and its R&D effort is focused on technology transfer for local content and new frontier areas such as ultra-deepwater and the Arctic.

**Onshore**

Technip covers the full range of onshore facilities for the oil and gas chain, petrochemicals and other energy industries (nuclear, renewables including biofuels and offshore wind). The Group is also present in non-energy activities (mining and metals, life sciences, buildings and infrastructures). Technip holds many proprietary technologies and is the leader in the design and construction of LNG and gas treatment plants as well as ethylene, hydrogen and syngas units. It is one of the leading players worldwide in refining and petrochemical units.
About Risk Management

Technip recognises that risk is an integral part of the daily challenge of conducting its business. Unmanaged risk threatens to destroy value. Properly managed risk can create opportunities and competitive advantage.

“We have a best-in-class approach to risk management. The key to this is that Risk Management is very close to our operations. This should remain the foundation of our risk management approach”.

“Knowing and quantifying the company’s risks is not only good governance, it is a best practice that helps us grow the company in a responsible and profitable manner”.

Julian Waldron
CFO & CRO

Thierry Pilenko
Chairman & CEO
A best-in-class approach to Risk Management, very close to our operations.
Risk Management in Technip

The implications for any organization faced with potential risks are massive. Technip proposes a Risk Management global approach involving all of Technip’s expertise.

Technip is recognized as a specialist of risk management building the future by developing ambitious, complex, mega-sized and pioneering projects, from design to delivery, in more than 48 countries.

Share experience & expertise with our clients

Technip has not only carried out an efficient ERM (Enterprise Risk Management) at all the levels of Technip organization but has also developed an operational and effective risk management at project level.

This project risk management is a project management tool structured and integrating all the Technip fields of expertise, in particular:

- Project Management
- Safety - Environmental - Natural events
- Social - Security
- Technology - HSE - Design - Engineering
- Material - Procurement - Logistics - Transport
- Schedule - Cost Control
- Partnership - Suppliers - Sub-contractors - Construction
- Commissioning - Start-up

A management decision tool

Risk & opportunity management is one of the key project management tools used by our project managers to ensure project objectives. It provides perspective and anticipation not only for the project team but also the top management.

As a very powerful communication tool, this method aligns project teams including partners and clients in a common understanding of the project stakes and strategy.

A way to secure your objectives

Technip is committed to applying a systematic, structured and integrated analysis and management system.

Effective and proactive risk management relating to all aspects of Technip business is set out in the Group Operating Principles & Standards and constitutes a core Technip value.

A competitive advantage

Risk management allows us to take the limits further and increase opportunities. Anticipated and controlled, risk can create opportunities and competitive advantage.
Technip, as a major player in large size project implementation, has developed a complete and comprehensive competency and expertise in project risk management. This expertise is part of a value-added service that Technip provides to its Clients for all types of projects.

**A risk is a potential event that can prevent reaching objectives**

The general objectives of a project are analyzed and assessed: Potential impacts on Health & Safety, Social & Security, Environment, Cost, Schedule, Performance and Reputation.

**A structured, continuous and integrated process**

In Technip, the risk management process encompasses all phases of the project lifecycle starting from pre-feasibility studies, basic design and front-end engineering, construction phases including detailed engineering & procurement up to the plant's operation.

**Exchange, communicate and align**

The scope of the analysis is not only limited to Technip’s contractual obligations but integrates the interfaces and consequences with all the stakeholders involved in the project: Clients, Partners and Suppliers.

The risk identification phase requires project teams to work together with experienced people attending dedicated meetings and Risk Assessment Workshops.

**A dedicated tool**

RMS is the risk management system developed internally, easily accessible and adapted to the general organization of a project enabling the process to be followed every step of the way.

**Methodology**

- Identification means describing the potential events and consequences as well as its causes.
- Evaluate is the qualitative assessment of the risks in terms of severity, likelihood, manageability and criticality.
- Responding to significant risks by taking the appropriate actions and developing mitigation plans to: Tolerate, Eliminate, Transfer or Reduce & Control.
- Controlling by reporting and monitoring the risks and mitigation plans status until closure.
Each company faces the same challenge: where to focus its scarce resources and assets and how to maximize its potential. Selecting the right opportunity and then engaging the Client requires a disciplined and win-win approach. Opportunity management has been specifically designed to add value.

**How to find opportunities?**

Opportunities should be identified and managed to provide value and balance the risks. An absence of risks might present opportunities. Opportunity management allows us to benefit from favorable events and positions. An opportunity may appear when implementing a response plan to mitigate risk.

**Opportunity management benefits**

Opportunity management provides an individually tailored planning and execution environment focused on large complex business opportunities. Opportunity management can provide the following benefits:

- Common company-wide engagement processes
- Effective and focused resource management
- A methodology for the whole team
- Closer customer relations and increased credibility
- Optimized design and adequate execution plan.

**Methodology**

- Identification means to describe the potential events, its causes and potential benefits.
- Evaluate the opportunities in terms of benefit, likelihood, manageability and criticality.
- Responding to strategic opportunities by taking appropriate actions and developing maximization plans to: Ignore, Exploit, Share or Maximize.
- Controlling by reporting and monitoring the opportunities and maximization plans status until closure.

“An opportunity is a potential event that could be used to maximize the objectives”
Knowing and quantifying the company’s risks is not only good governance but also the best way for the company to grow in a responsible and profitable manner.

Based on its experience and internal expertise, Technip has developed a reliable risk quantification approach and tools.

**Key objectives**

**Scope of analysis and reliability**

When risks and opportunities (uncertainties) are identified and analyzed, allowances, contingency and management reserve, including accuracy can be modeled in order to validate the reliability and value of a project schedule or a base cost estimate.

Scheduling, cost estimating and risk management disciplines and their experts are gathered together and coordinate in order to achieve this quantification. Internal experience and feedback provide definite added value and validity of the exercise.

**Consistency between Schedule & Cost impacts**

One of the key issues is to ensure consistency between schedule and cost impacts.

Technip has developed internal methodologies and tools to guarantee the coherence and alignment with execution plan and strategy.

**Methodologies**

**Monte Carlo Method**

A technique that performs a project simulation, many times to calculate a distribution of likely results. Customized applications in Technip using this probabilistic or stochastic technique are available.

**Bayesian network - Influence Diagram**

A probabilistic graphical model that represents the relationships between variables and conditional dependences; these facilitate reasoning under uncertainty & communication in regular decision problems.
Quantification of contingency: method

Uncertainties

Uncertainties are the total range of situations and events that may occur, producing risks and opportunities that will affect a project. In the Risk quantification process, uncertainties are classified in three major categories:

- **Cost estimate accuracy** uncertainties, which are prices and quantities assumed in the process of preparing the cost estimate. If they are incorrect, it will impact the project’s cost.

- **Schedule accuracy and risk**, which are uncertainties on durations assumed in the process of preparing the project schedule or events. If they occur, it will impact the project’s time of completion and consequently the project’s cost.

- **Other risks and opportunity events** will have an impact on the project’s execution plan and cost, if they occur.

“Accuracy is confidence in the absolute result or outcome”

Our tools

Primavera Risk Analysis & MS Project

Primavera Risk Analysis or MS Project coupled with @Risk for Project for schedule modeling.

@Risk

Microsoft Excel coupled with @Risk for Cost Estimate modeling including Bayesian networks and Monte Carlo simulation and interface with time model.
**Risk management training**

Technip provides intensive training on all the aspects of Project Risk Management within its own or Clients teams.

**Training objectives**

- Understand the project risk management vision, definition and execution
- Enhance project risk management in a changing business environment
- Learn the value behind project risk management and how it drives project team
- Link risk management to opportunities to take the right risks to achieve the objectives
- Analyze specific risk management frameworks and improving project risk management
- Build awareness of methodologies and risk management tools
- Explore the main risk management and quantification tools

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Our main references

PAZFLOR PROJECT, deep water oil field development
- Client: Total
- Realization: Technip (leader)
- Location: Gulf of Guinea, Offshore Angola
- Details of contract:
  - Type: Lump Sum Turnkey
  - Delivery date: 2011
  - Capacity: 80 km of flowlines and 60 km of umbilicals

GDANSK REFINERY, 10+ programme - Residue Upgrade Project - Hydrocracking Unit
- Client: Grupa Lotos S.A.
- Realization: Technip
- Location: Gdansk, Poland
- Details of contract:
  - Type: Lump Sum Turnkey
  - Delivery date: 2010
  - Capacity: 41,000 barrels per day

GIANT SEMI-SUBMERSIBLE PLATFORMS: P-52, P-51 and P-56
- Client: Petrobras
- Realization: Fels Setal / Technip Consortium
- Location: Campos basin, offshore Brazil
- Details of contracts:
  - Type: EPCI
  - Delivery date: P-52 (2007), P-51 (2008), P-56 (2011)
  - Capacity: up to 180,000 barrels of oil per day and up to 7.5 million m³ per day of gas

KONIAMBO, integrated nickel production facility
- Client: Joint Venture (Xstrata, SMSP)
- Realization: Technip (leader)
- Location: New Caledonia
- Details of the contract:
  - Type: From Bankable Feasibility Study to EPCM (Prime Contractor)
  - Delivery date: 2013
  - Capacity: 60,000 tons per year of nickel
HEADQUARTERS
Technip
89 avenue de la Grande Armée
75773 Paris Cedex 16
Phone: +33 (0)1 47 78 24 00

Raffaele INGROSSO
Email: ringrosso@technip.com
Phone: +33 (0)1 47 78 65 33

Matthieu FOUCRET
E-mail: mfoucret@technip.com
Phone: +33 (0)1 47 78 34 74

RISK MANAGEMENT CONTACTS
France
Stéphane JUILLET
E-mail: sjuillet@technip.com
Phone: +33 (0)1 47 78 53 09

Italy
Pietro FOIS
E-mail: pfois@technip.com
Phone: +39 06 6598 3456

Brazil
Raul Gustavo FARIA
E-mail: rgfaria@technip.com
Phone: +55 21 2139 7412

USA
Duane YOUNG
E-mail: mdyoung@technip.com
Phone: +1 281 249 4208

Malaysia
Noriah ATAN
E-mail: noriaha@technip.com
Phone: +60 3 2186 7045

United Kingdom
Lisa SWINTON
E-mail: lswinton@technip.com
Phone: +44 (0)1224 271 070

UAE
Ibrahim KHALIL
E-mail: ikhalil@technip.com
Phone: +971 2 611 6728

USA
Duane YOUNG
E-mail: mdyoung@technip.com
Phone: +1 281 249 4208

Malaysia
Noriah ATAN
E-mail: noriaha@technip.com
Phone: +60 3 2186 7045

United Kingdom
Lisa SWINTON
E-mail: lswinton@technip.com
Phone: +44 (0)1224 271 070

UAE
Ibrahim KHALIL
E-mail: ikhalil@technip.com
Phone: +971 2 611 6728

www.technip.com