Opportunities and Challenges in Exploration and Production

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The situation

- Constant increase of oil prices over the last decade, induced:
  - An important increase of Exploration & Development activities
  - A severe escalation of CAPEX/OPEX and projects complexity, in line with increased demand
  - Tougher host countries expectations (contractual terms, government take, local content)

- In the current situation, characterized by oversupply and a laggish demand, oil prices fell from over $100/bbl to below 30, leading to:
  - Complex and highly capitalistic projects being more challenging
  - Projects being delayed or abandoned
  - Flexibility applied, whenever possible, impacting onshore, offshore and shale developments

Lowering Projects breakeven is a priority
The good old days...

Only 25% of projects were on time & on budget...
The Project Misery Index (cost overrun % plus time overrun %) highlighted the difficulties of our industry.

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How to adapt to the downturn?

To weather the storm and launch new Projects:

- Secure cost reductions (easy cuts have been made...)
- Capitalize on strengths
- Be innovative, introduce new technologies
- Review design practices/specifications, standardize, look for synergies & operating optimization
- Adapt contracting strategy, supplier relationships management

Most deepwater projects do NOT breakeven below US$60-80/bbl.

Significant activity slowdown with little chance to rush back to high levels seen in the 1st half of the decade.

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Improve capital efficiency

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TOTAL: subsea to deepwater projects
constantly adapting through exploration & development innovations

WTI prices corrected from the inflation

30$

Source: macrotrends

North East Frigg
Canyon Express
Deepest sub-sea pipeline at time of dev. (2200m)

Rosa (1400m)
20km tie-back & largest deep offshore brownfield works

Akpo (1350m)
Steel catenary risers, 1st all-electric FPSO

Usan (800m)  

Moho North
Sub-sea and TLP (650-1100m)

Kaombo
(1400-1900m)

1979  1983

1983

1990

2001  2002

2006  2007

2008

2009

2011

2012

2014

2016

2017

Grondin North East

Girassol (1400m)
1st deepwater dev. in West Africa

Dalia (1400m)
8 x Integrated Production Bundle risers

Moho Bilondo

Subsea seawater treatment & injection (540-740m)

Pazflor (900m)
Subsea G/L separation & pumping modules

CLOV (1100-1400m)
SS multiphase pumps, variable speed drive tech.

2007

2009

2011

2012

2014

2016

2017

Egina (1600m)

8 x Integrated Production Bundle risers

Subsea G/L separation & pumping modules

SS multiphase pumps, variable speed drive tech.

Research program

1st SPS in North Sea

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... a path w/o interruption despite fluctuating environment
Deep offshore areas remain largely under explored

Capitalize on Company’s deepwater expertise on emerging areas
Share knowledge and funding, a vast array of opportunities

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Costs

FPSO topsides getting more complex (>40,000t) ... is the design “good enough”?

UDW drillships now have only one marker, around 240K$/d, and are not expected to rise in the near term.

SS equipment: a market shrinking rapidly (2016-17: -31%), w/ Petrobras, a leading buyer, (±15% of market share over 2003-15).

Secure industry-wise cost reductions / Contractors to adjust capacity

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SS solutions: value from standardization

Projects have become increasingly complex, but:
- unique-to-company specifications have proliferated
- suppliers have been unable to leverage scale and continue to manufacture in custom, bespoke regimes
→ prices have almost tripled & schedule is more than 2x longer compared to less than 10 years ago – for comparable deliverables.

Standardization & harmonized specs become a business imperative. Industry must move towards a vision of common design solutions (off-the-shelf for ±80% of applicable common modules, customizing as little as possible), enabled by collaboration across the supply chain, through organization changes.

Industry-level changes are needed to drive common initiative (WEF/IOGP). Some initiatives and efforts to harmonize across Operators already started (XT: BP, Statoil, Total... -> expectations= 30% direct costs savings + 12m schedule compression).

Technology can play a significant role, but we must simplify and adopt new contracting strategies

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Conclusions

What future for offshore E&P?

- Times are tough and just getting tougher
- No compromise on HSE, a core value for TOTAL’s Group
- Resilience in a degraded environment, cost reduction program, decrease finding & development cost/boe, shift to lean and reduce breakeven development price
- Maintain strong discipline on spending, value is key
- Operational efficiency and excellence, capitalize on strengths
- Technology pivotal in increasing recoverable oil in existing areas, helping identifying HC in new and/or less accessible areas and driving costs & risks down
- Maintain technical expertise and partnership with Contractors for the next row of Projects

Boundaries to be continuously pushed

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