Innovation, Cost Reduction and Profitability in Offshore Projects

Every year, the main global conference on offshore exploration and exploitation issues takes place in Houston: the Offshore Technology Conference (OTC). This year the conference celebrated its 50th edition.

During this event the Shell's Projects & Technology Director, Harry Brekelmans, made some remarks that Gas Energy Latin America want highlight and analyze in this new Monthly Newsletter. Brekelmans' topics were focused on innovation and pointed out that it can be found in multiple forms: 1) Smarter systems, 2) Faster operational deployments, 3) Increased security in operations, 4) Collaboration and sharing data, experiences, and any other useful information.

He pointed out that a problem solved somewhere in the world becomes a solution for the entire industry. The Shell Executive asked, What is the spirit that turns a flash of ingenuity into an enduring legacy? What is it that makes lasting innovation? The answer is undoubtedly the collaboration between all those involved and the interaction of the entrepreneur company of a project and the companies that provide the associated services.

Brekelmans mentioned three Shell's projects whose innovation and high level of collaboration marked a milestone in offshore exploration and exploitation technology: The First milestone was Blue Waters 1, the semi-submersible drilling rig developed by Shell in 1962, which allowed exploring in ultra-deep waters of the Gulf of Mexico. The second milestone was the development of the Mars field discovered in 1989 used by Shell to carry out studies and innovate in exploratory technology for potential reservoirs with highly complex structures and geological properties. The third milestone was marked by the developments in the Vito field located in the Gulf of Mexico.

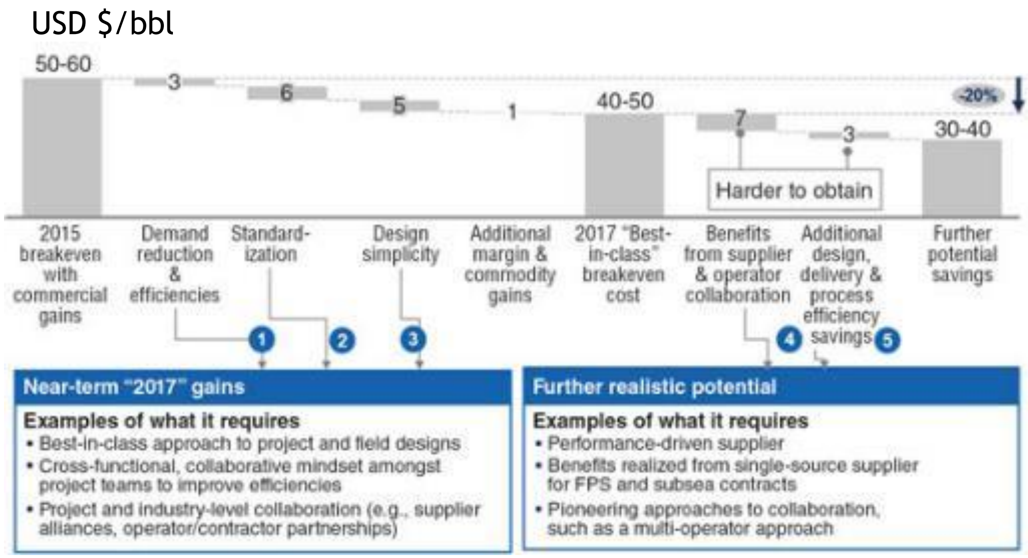
Vito field operated by Shell

Source: https://www.2b1stconsulting.com/shell-anadarko-and-statoil-at-concept-study-on-vito-us-gulf-of-mexico/

Vito offshore development in the Gulf of Mexico was canceled in 2014 due to high costs and the fall in the price of oil. However, by April 2018 Shell finally obtained its Final Investment Decision (FID) for this project. During this period, Shell had to implement a process of total reengineering of the original project taking new innovations, with which it managed to reduce costs by 70% to make it viable. The innovation and collaboration explained by Shell is undoubtedly the final result.

The production expectation of this field is about 100 thousand barrels per day at an average breakeven cost of US$ 35/bbl. The new design will recover less oil than the original design but with higher profit margins.

US Gulf of Mexico deepwater greenfield breakeven costs



Source: McKinsey Energy Insights

In the graph above shows the average of breakeven costs for the Gulf of Mexico in 2015. The breakeven oscillated between 50 to 60 dollars per barrel. After the fall in the oil price, a greater emphasis was accomplished on innovation and collaboration, cost reduction with simpler and more standardized designs. In 2017, the graph shows that an important average cost reduction had been achieved towards 30 to 40 dollars per barrel.

Finally, in the context of the conference, Brekelmans said that "we must be disciplined and think about offshore production costs in an average range of 35 to 40 US$/bbl", "which gives security that the investment portfolio is sustainable in time".

Gas Energy Latin America notes that the WTI price has only been for two months during 2016 at the level of $35 per barrel. Therefore, these projects in the Gulf of Mexico with prices that are around 60 to 70 currently become extremely profitable.

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