

Achieving Productivity Gains and Cost Reduction in Well Construction: an Operator's Perspective

Umberto Borges¹

¹Petrobras

ABSTRACT

Cost management currently tops the priority list for the vast majority of oil and gas companies, due mainly to the oil slump, a scenario which is not likely to change significantly in the short run. A substantial share of project costs, especially in offshore environments, is related to well construction costs. Well costs in particular can, in some cases, comprise more than 85% of the total cost of exploration projects. This clearly makes it imperative to seek out long-term reductions in the cost of drilling wells.

This work aims at introducing key aspects related to the planning and execution of exploration and development wells that must be taken into account in order to achieve efficiency and safety goals in drilling operations. This, in turn, translates into cheaper wells and improved cost-effectiveness in new and existing projects, bringing them to a sustainable economical level in the face of the current industry downturn, as well as providing a solid foundation for continuous improvements and operation of highly efficient wells when the industry turns around.

Examples will be shown from select Petrobras offshore projects where a number of risk mitigation actions and optimization initiatives have been put forth to overcome the “cost challenge.” They have brought consistent productivity gains and decreased drilling times and therefore reduced well costs. These initiatives include, but are not limited to, enhanced forward-planning, improved synergy between geoscience and engineering teams, better project scope definition, simplified well design, adoption of state-of-the-art drilling technology, robust risk analysis, and extensive use of lessons learned and best practices. All of these resulted in higher drilling performance and significant cost reductions while meeting the required operational safety, which goes hand in hand with performance and must never be neglected.