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Integrated Operations Delivering Value

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Through innovative field-proven technology and broad experience, ABB delivers solutions for more profitable operations and improved work processes.

The upstream oil and gas business continues to face challenges that make safe operation with traditional technologies and work processes less profitable. As existing fields mature and become marginal with complex reservoir and fluid characteristics, the operational costs tend to increase. New fields are typically located in more remote and challenging environments, such as arctic or deep water.

ABB is facing these challenges, focusing on three key areas:

- Increased throughput and recovery
- Reduced operational expenses
- Improved safety and integrity

Increased throughput and recovery

Production and process optimization leads to more robust operation and higher production capacity. Improved robustness in turn leads to increased process regularity. The resulting effect is higher throughput of the process plant, from well-bore to export.

In tail production, integrated operations contribute to increased oil recovery by reducing operational expenses and increasing regularity, thereby ensuring profitable production.

Reduced operational expenses

A change from reactive and schedule based maintenance to proactive and condition based maintenance is key to optimized maintenance and reduced operational expenses. Further reduction in operational expenses can be achieved through remote operations, collaborative environments and increased degree of automation.

Improved safety and integrity

Improved production understanding and control, predictability, better maintenance planning and improved regularity all helps avoid hazardous situations, and reduces the probability of accidents and environmental disasters. Remote operation and maintenance allows less traveling and less people on the process plant, thereby reducing the danger of personnel injuries.

Process plant



Offshore control room





Onshore operation center



ABB remote support center

Return on investment

The following numbers are average yearly return on investments from an offshore installation on the Norwegian continental shelf producing typically 40,000 bbl per day.

Increased throughput	Value (MUSD)
Production optimization	14
Process optimization	5
Equipment regularity	9
Optimized maintenance and reduced operational expenses	Value (MUSD)
Taxes	1
Reduced Maintenance and Operational cost	4
Total gains	33
(Numbers are based on an oil price of 80USD/bbl)	

Typically investments in integrated operations have a payback time of 1 to 6 months.

Integrated Operations through the lifecycle

Greenfield – An optimal operation philosophy starts with the right system design in the early field development concept phase. Early involvement from ABB expertise on integrated operations ensures the right decisions are made throughout a development project to gain maximal benefits throughout the process plant lifecycle.

Brownfield – For reasons like tail production, process changes or changes in reservoir or fluid characteristics, a production plant may no longer operate as it was intended in the design phase. A study of the process plant will identify how integrated operations can help increase production, lower operational expenses and ensure safe operation.

Solutions and Services

To help customers achieve the suggested benefits ABB offer a portfolio of solutions and services optimizing operation, maintenance, and control from wellbore to export.

The portfolio covers areas like:

- Alarm Management
- Asset Management
- Condition Monitoring
- Energy Efficiency
- Flow Assurance
- Information Management
- Process Control Performance
- Production Optimization
- Remote Operation
- Wireless Systems

Selected Customers

ABB Integrated Operations has delivered successful projects to numerous oil and gas operators, both international and national. Among our customers you find BP, BW Offshore, ConocoPhillips, ENI, ExxonMobil, Fred Olsen Production, Maersk, Petrobras, Petronas, SaudiAramco, Shell, Statoil and Taqa.