

An Oracle – IFS Partner White Paper  
December 2009

# Fire on All Cylinders in Oil & Gas

## Unleashing the Value of Integrating Enterprise Planning with Project Execution



ORACLE

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## Executive Overview

Companies in the oil and gas industry must invest heavily in further exploration, production, and refining, yet they face growing challenges. The recent past has seen historic revenue and profit growth at the major oil and gas companies, followed by an unprecedented decline. Now, with global demand slowly starting to rebound, and an increase in oil prices, operations and balance sheets are on the mend. IFS and Oracle are addressing these challenges through their solutions, enabling project leaders to successfully manage risk, even in this volatile climate. These solutions can help companies identify the best strategies for pursuing existing projects and the most-promising future projects for investment.

## Introduction

If you are active in this industry, you know that this is a challenging time for companies like yours. Long-term growth trends coupled with short-term price fluctuations have created the need for oil companies to increase capacity while at the same time facing the pressure of reducing expenses in building new production assets—or expanding or extending the lifecycle of existing assets. Customer organizations are more demanding than ever, asking their vendors to take on more risk, compete more aggressively on price, and toe the line on quality. Information technology can play a key role in meeting these challenges, particularly since many companies serving the industry are still running their businesses on older enterprise applications that do not allow for the visibility or flexibility necessary to compete in today's market.

Today, many project owners/operators are transitioning projects to an engineering, procurement, and construction (EPC) business model. Technology is seen as key to vendors' ability to collaborate better internally, as well as with customers and sub-contractors. This technology-enabled collaboration is the way to ensure that an EPC contractor, equipment manufacturer, or other partner can plan, communicate, and execute effectively enough to meet contractual obligations.

"HFG has a 100% focus on functionality. We asked all project team members to score the presented solutions. We then weighed the scores, and IFS was soon pronounced the winner. Even if we hadn't weighed the scores, IFS would have won anyway. It was a purely functional choice, with which we are very content. We are in the business of fabricating offshore constructions, not annual reports. But functionality alone is not important; financials are as well. IFS supports our functional needs, while meeting the demands of the financial community."

— **Wim Korndorffer**, former Chief Information Officer, HEEREMA GROUP

## Challenging Environment

Imagine for a moment the situation faced by a group of procurement professionals working on an EPC contract. They are working diligently in their enterprise resources planning (ERP) solution, and see a requisition for two process gas screw compressors. Because these people are working in a system disconnected from the project-planning tool used on the project, they risk buying this high-cost equipment too early, tying up revenue and incurring additional costs for storage.

Conversely, imagine a procurement team at another EPC contractor working from the project plan, which happens to be disconnected from the company's ERP system. In an attempt to delay expenses, they postpone ordering an impeller pump, not knowing that it is a long lead time item even under the best of conditions and that shipments from that supplier are taking even longer than usual. As a result, the project timeline is affected, and the contract goes behind schedule, putting the company at risk of missing the delivery date and incurring penalties.

Both of these examples are played out every day at companies that deliver and complete projects in the oil and gas industry. And in all cases, revenue is lost, schedules are adversely affected, promises are broken, and blood pressure is increased across the board. Why does this happen? Because information is being kept in separate and isolated systems: generally a project planning type of solution, and an ERP application, or homegrown solution. This leads to two versions of the truth and keeps vital project information from being shared with the people who desperately need it in order to successfully complete the project.

Both ERP and project portfolio management (PPM) are necessary solutions, because while in some cases their functions overlap, they each offer strengths that make them indispensable. The logical answer is to adopt an integrated strategy utilizing modern applications that can work in a bidirectional way to eliminate the errors and misjudgments that result from poor communication. In a mission-critical, project-driven environment like oil and gas, the project plan needs to drive the business and the processes, however all of the business information is located separately, in the ERP package. As long as those are disconnected, managers and executives charged with project execution will lack the critical information they need to be effective.

In this white paper, we describe how suppliers to the oil and gas industry can gain complete control over their operations and projects and preserve margin by integrating a PPM offering like Oracle Primavera's PPM solution with a project-based ERP package like IFS Applications.

## Four Success Factors

Here are four success factors to watch for in selecting and implementing an integrated PPM-ERP package solution for your company:

- Project-based ERP solution
- Enterprise Project portfolio management solution
- Optimized integration
- Robust database and application infrastructure

## Project-Based ERP Solution

The first success factor is the underlying ERP platform itself, which needs to be designed as a project-based solution (PBS). Most ERP packages are designed to optimize and automate repetitive processes—perfect for manufacturing products, but not as well suited for discrete projects with a beginning and an end.

A project can encompass not only a product life cycle, but also a customer order life cycle, or the life cycle of a group of customer orders. Consider the case of an equipment engineering and fabrication firm that has traditionally served the refinery market but also has some customers in the offshore drilling industry. Management by project will allow the company's executives to track all the resources consumed by each group of customers, and this might reveal that the profit margin from the downstream refinery customers is in decline while demand is increasing in the upstream-related offshore drilling side of the business. One strategy might be to retrain some staff and acquire additional equipment. A true PBS will allow for a forward-looking view of actual staffing levels, resources, skills, and equipment requirements. With management by project, you treat the ongoing demand for your product—and your ability to meet that demand with supply—as an ongoing project, a series of projects, or projects linked to an overall program.

An enterprise application for management by project, should be integrated enough to allow for managing the supply and demand for all resources, and enable incurred cost to flow up to financials as well as up through the project, for a view into project progress over time. A unified enterprise application allows budgeting and forecasting, so that C-level executives can see how certain project-defined areas of the business are progressing against plan. Some of the essential benefits delivered in IFS Applications include:

- Tracking of front-end project-specific costs
- Full project enterprise planning

“We manage projects that are maybe \$10,000 with two activities, as well as \$50 million projects with 5,000 activities. The system is able to handle both the smallest and the largest projects. We are also able to use the same software to run two different businesses—both commercial and Navy.”

— **Mike Taylor**, former Chief Information Officer, Todd Pacific Shipyards Corp.

- Standard plan spanning multiple projects
- Re-use of assets to reduce risk and lower costs
- Swap (borrow & pay-back) to maximize resource availability
- Multi-discipline engineering and procurement
- Control by exceptions
- Support for project specific items from design to procurement and installation
- Materials linked to master project schedule for more accurate availability checks and improved change handling
- Document flows with the process on RFQs, POs or SOs
- Strong support for sub-contract management
- Strong support for fabrication/construction with flexible ways of job setting for different disciplines
- Integrated financials for project control and traceability
- Valuations, applications for payment and retentions
- Budgeting and forecasting

## Enterprise Project Portfolio Management Solution

In developing its PBS, IFS saw early on the need to integrate this functionality with other solutions. That is one reason it was made a priority to develop integration with Primavera, a PPM that is heavily used in the oil and gas industry and is the de facto standard among EPCs. Even before its acquisition by Oracle in October of 2008, Primavera was the market share leader in PPM, and had been identified as a technology leader by Forrester.

By integrating the project plan with the PBS in IFS, it becomes possible to do project-based engineering, procurement, construction, installation, manufacturing, and asset management. Integrated PBS and PPM enables project time phasing, so the different disciplines involved in the project plan can share the information and execute on time.

Covering all aspects of project management, Oracle Primavera PPM applications enable companies in the oil and gas industry to:

- Identify and select the right projects
- Predict and manage risk
- Reduce project complexity through interactive dashboards
- Control and manage project portfolios in real-time
- Manage project change and quickly resolve issues
- Improve collaboration
- Implement earned value management (EVM)
- Control contracts and documents

## Optimized Integration

The bidirectional integration of a strong PBS-enabled ERP system like IFS Applications and the latest version of Oracle Primavera PPM may become the new industry standard for companies that supply equipment to the oil and gas industry, for overcoming traditional data silos that create so many problems in a deadline- and budget-sensitive environment. But how difficult is this integration to accomplish, and where does one system pick up and the other leave off?

First, it is essential that your ERP vendor have a standard integration with the version of Oracle Primavera you plan to use. A consulting firm might offer to create a custom integration, but this only adds expense and risk: without intimate knowledge of the application architecture of your ERP software, it is difficult for a third party to successfully perform an integration that accesses the business logic and ensures that the data pulled back into your ERP system meets the requirements of the software.

The standard integration between IFS Applications and Oracle Primavera uses an integration application program interface (API) for planning tools. IFS has used its planning integration toolbox and written a two-way integration with Oracle Primavera to allow information to be shared between the two software packages. The existence of a standard integration means that IFS has completed—and already paid for—the hard work of mapping IFS Applications products with Oracle Primavera.

Once deployed, IFS Applications will export data to Oracle Primavera, including projects, subprojects, activities, calendars, dependencies, constraints, resources, resource assignments, resource capacities, costs, progress, start and end dates, and the relevant statuses.

## Robust Database and Application Infrastructure

The two principal deployment components for the IFS Project-based ERP and the Oracle PPM solutions are the database and the application infrastructure.

"Many of our customers run global businesses with 24 by 7 requirements, so taking their IFS applications offline to perform maintenance causes them serious inconvenience and even revenue loss. We have tested the new edition-based redefinition capability that Oracle Database 11g Release 2 brings during our participation in its beta program and we are excited at the prospect of deploying it to enable the online upgrade of IFS Applications. Our customers will then be able to install updates to our applications' database objects, including tables, while the applications remain open for normal use."

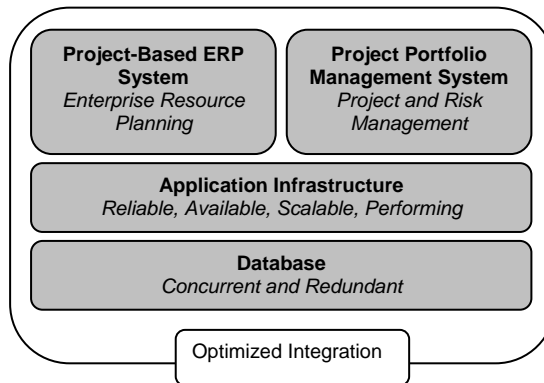
— Dan Matthews, Chief Technology Officer, IFS World

## Database

Since its inception, IFS Applications has used only an Oracle database for the simple reason that Oracle has always offered the most advanced scalable and reliable database technology and is best suited for support of mission-critical business functions, delivering concurrency and redundancy.

## Application Infrastructure

Modern enterprise software infrastructure must keep pace with dynamic business needs. As a business changes through growth, contraction, or seasonal variation, its middleware must be flexible, cost-efficient, and easily modified to accommodate this fluctuation. A complete, integrated, hot-pluggable, best-of-breed infrastructure like Oracle Fusion Middleware 11g improves the agility and intelligence of business applications while maximizing IT efficiency and lowering costs. Oracle WebLogic Suite, a foundational element of Oracle Fusion Middleware, offers the ideal mix of performance, scalability, and operational efficiency to support modern IT requirements driven by ever-changing business needs.



Oil and Gas executives focused on realizing the full potential of their organizational initiatives can translate this vision into action by implementing the optimal integration, which ties together the company's project-based ERP system and PPM system seamlessly on a robust application and database infrastructure. Oracle and IFS together provide the systems necessary to execute on this vision of synchronized organizational action for the Oil & Gas industry.

## Conclusion

While the oil and gas industry will always be a very challenging environment in which to do business, there are simple approaches that can be leveraged now to help ensure success. In the years to come, the successful companies in this space will be the ones that eliminate the inefficiencies that occur due to poor communication, data silos, and non-integrated point solutions. Integrating a back-office system like ERP and a field-level system like PPM, supported by a highly available and responsive infrastructure, is an essential place to start preparing for today's challenges—and tomorrow's.

## Learn More

These online resources provide additional information for further reading.

- IFS Applications for Oil & Gas:  
[http://www.ifsworld.com/us/industries/oil\\_and\\_gas/](http://www.ifsworld.com/us/industries/oil_and_gas/)
- Oracle Middleware:  
<http://www.oracle.com/us/products/middleware/index.htm>
- Oracle Database:  
<http://www.oracle.com/technology/products/database/oracle11g/pdf/database-11g-product-family-technical-whitepaper.pdf>
- Oracle Primavera Oil & Gas PPM:  
<http://www.oracle.com/industries/energy/oracle-primavera-enterprise-project.html>



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the Oil & Gas Industry  
December 2009

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