



One project, four players, one common interface

The Norwegian government approved Norway's largest oil and gas operator Statoil's plans for a conversion of its three platforms, A, B and C, on the Statfjord field in the North Sea. The idea is to prolong the production life for this field in order to recover remaining oil and gas reserves. The project has been named Statfjord late-life, and is a labour-intensive project with many players, which places stringent demands on project management.

In addition to being Statoil's first late-life project, this is also a pioneer project in another sense. For the first time, a developer and all contractors involved are using Safran to manage their activities for the common project. For lead planner Bjørn Rosland at Statoil, having a copy of the different databases in a local separate database, is a great advantage: "First of all, this means that we are able to communicate effortlessly and share project information across our common interface. Secondly, through Safran we can engage in discussions and problem solving in a manner that we only dreamed of before. But most importantly, we can now be confident that our contractors are using a reliable project management tool that we understand."

Statfjord is one of the oldest and largest oil and gas fields in the North Sea. Discovered by Mobil (now ExxonMobil) in 1974, the field has been operated by Statoil since 1987. It has already yielded four billion barrels of oil and generated well in excess of USD \$150 billion in revenues.

Currently producing oil with associated gas, the field installations are to be converted to handle gas with associated oil. This will raise the recovery factor on Statfjord to almost 70 per cent of the oil originally in place and 75 per cent of the gas, and keep the field producing for years to come. This is at the top of the tree for recovery in world terms, with experts estimating that gas recovery without the project would be 53 per cent.

In addition to the conversion of the platforms, the late-life project calls for the construction of a new gas export facility to the UK. A 23.1km pipeline called the Tampen Link will be laid from Statfjord B to the Flags transport system, which runs from Britain's Brent field near Statfjord to St Fergus in Scotland.

Injecting gas and water to maintain reservoir pressure has been an important element in the present production strategy for the field. Combined with an extensive programme of drilling wells to tap remaining oil pockets, injection has helped to push the recovery factor much higher than expected when development began. By reducing pressure in the reservoirs and on the platforms, large volumes of previously-injected gas can be recovered. Gas will also be released from the remaining non-recoverable oil.

Organization:

- Statoil, an international energy company present in more than 30 countries around the world

Goals:

- Ensure new construction doesn't disrupt ongoing operations
- Better manage complexity and support sophisticated business processes
- More reliable reporting and project statusing

Safran Benefits at Statoil:

- Faster access to a single source for all project reporting and statusing
- Intergration between Safran and SAP
- Ability to coordinate ongoing operations on 3 oil and gas platforms while reconstructing them and a new pipeline

Integration

Bjørn Rosland is Statoil's lead planner for the late-life project, coordinating resources and contractors with the existing Statfjord operations. "Originally the late-life project was to be managed by the Statfjord operations department, with the A, B and C teams each handling the conversion processes for their own platform. However, in order to benefit from the synergy effects arising from handling all three projects as one, it was decided to organise the conversion as a separate project covering all three platforms," he explains.

For this project, the late-life team has to cooperate very closely with the Statfjord operations department to coordinate the late-life project with the ongoing activities on the platforms. One of the major challenging relating to this is the fact that the Statfjord department is using SAP and the late-life team is using Safran to plan their activities.

"Our intention is to make it possible to transfer data electronically between SAP and Safran. The technology exists and Safran's management is eager to incorporate it into their project management software," says Rosland.

Cross-contract coordination

The modification work will take place while the platforms continue normal operations. This means that much of the work has to be done in two to three hectic weeks in the summer of the coming years, during the annual maintenance turnaround.

"Our job is to work closely with the Statfjord operations team to make sure that the late-life activities do not interfere with the production," Rosland says. The late-life project comes on top of the day-to-day operations on the platforms, and it will influence the production and drilling work on the platforms.

Modifications on the Statfjord platforms will be pursued in two phases with the first lasting almost two years. This will embrace installation of gas lift and sand control in a number of wells as well as upgrading of topside HSE standards (Health, Environment and Safety) and technical condition, including in the drilling facilities.

Due to take a further two years, phase two involves conversion of production equipment to receive and treat oil and gas under lower pressure. The drilling programme will also continue. The scope of the modification work is put at roughly three million working hours offshore and

three million engineering hours on land in addition to some prefabrication.

Following Government approval of the project, Statoil proceeded to award the construction contracts. Aker Kvaerner was contracted to perform modification work on Statfjord B and C. The contract to perform modifications on the Statfjord A platform was awarded to Vetco Aibel. Finally Smedvig won a contract to modify the drilling facilities on the B and C installations.

All three contractors are using project management software from Safran for this project, and it is the first time that Statoil has undertaken a project where the corporation and its contractors are using the same project management software. Rosland emphasizes, however that it was not a prerequisite for being awarded the contract that the contractors use Safran.

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Bjørn Rosland
Statoil Lead Planner

"Our experience from the Snøhvit development project where one of our main contractors was using Primavera, has nevertheless made us very relieved that our current contractors are using Safran. Getting all involved parties to communicate without hassle is one of the potential bottlenecks of a project of this size. All three contractors are responsible for their own interface and for planning their own work. Our job is to coordinate

their schedules across the contracts to ensure on-time delivery and to provide information on what deliverables are needed and at what time, as well as who the suppliers and recipients are," Rosland explains.

Cross-contract coordination means monitoring, for instance, the schedules for the drilling operations versus Smedvig's schedule for modifications on the drilling facilities. To optimize control, both involved parties must have the same interface in their plan, where they both build up a sequence of events that lead up to a milestone, which can be coordinated with the milestones for the other player.

"Safran is ideal for these kinds of planning scenarios, and the situation that we are in right now where all three contractors are using Safran is a dream come true for a project manager. I know they are using a reliable tool, and it makes planning so much easier when I can import their data directly into our overall schedule."

Critical phases

In a project of this size and scope, the main focus of the project manager has to be on coordinating resources and working to ensure that the progress is being made in the

right areas at all times. For the late-life project, the critical phases are the shut-down periods.

“Normally, the drilling and production work on the platforms is shut down for two weeks every other year. But for the duration of this conversion project, the platforms will be shut down for a three week period every year. It goes without saying that in order to maintain full production on an annual basis despite this increase in the number of shut-down periods, this project must be managed with every single detail in mind. Coordination is extremely important. We must have a detailed schedule that ensures, for instance, that the drilling crew has completed its activities and checked out before the late-life teams arrive to perform modification work on the drilling facilities. It is important on more than one level too – both in terms of making accommodation available for the late-life teams, and in terms of the actual modification work that needs to be done,” Rosland explains.

To maintain strict control of the project status, the lead planner makes extensive use of the histogram features in Safran’s project management software to monitor progress and utilization of resources and accommodation. The schedules from the contractors are imported into one overall schedule. The most important activities on each platform are summarized into the master schedule.

Some of the work is pre-fabricated onshore and transported to the platforms for installation, but a lot of the work must be performed on site, and this makes coordination equally important. Drilling and production must be shut down before the so-called hot work can commence. This includes welding, grinding and other potentially fire hazardous activities. With a quick look at the overall schedule in Safran, the late-life team is able to get information fast if there is a conflict in the schedules for all the operations.

Progress reports

The oil and gas industry in the North Sea has experienced some dramatic incidents over the past few years, involving both people and the environment. The main focus for Statoil will therefore, as always during complex projects like this, be on imposing the strictest possible HSE regulations. “This is always Statoil’s priority number one. Coordinating resources to ensure the best possible utilization of personnel and equipment is another great challenge,” says Rosland. “Statoil is a very large company, we have to set a standard where environmental issues are concerned. It’s important that we put safety and the environment first because we are compelled to be a role model.”

Having learned from previous project management outcomes, the current late-life project has more focus on both HSE related issues and on detailed monitoring of the

execution of activities. Rosland emphasises the need for providing information to the management to facilitate trend analyses, for example on progress, productivity, efficiency, as well as float trend analyses that provide insight into whether the right activities are in progress or not at any given time.

“We focus our analysis on both volume progress and sequence progress. It is important for us to ensure that our contractors make the right priorities with regards to the sequence of their operations. Progress is only of value if it’s made on the basis of activities that need to be accomplished now, not in 6 months. When the piping crew arrives, for instance, and the pipes still haven’t been made, being ahead of the progress schedule is of minor relevance,” Rosland explains.

To facilitate better monitoring of the sequence of activities, Rosland has suggested that Safran incorporate an improved float trend analysis feature in coming versions of Safran, and plans for developing the software to include this feature exist. For the people at Safran, such input from the end users is invaluable. Bjørn Rosland praises the cooperation and support from the Safran professionals. “They always listen to suggestions for improvements and additional functionality that is of benefit to us, the users,” he says.

Standard planning tool

In addition to using Safran Project to manage long-term and complex projects such as the late-life project, Statoil has installed Safran Planner on all 18,000 desktops throughout the organisation. Safran Planner is a corporate planning tool, and more and more people from a range of departments in the company are using it every day.

As Bjørn Rosland explains: “Previously, a number of different tools were used for planning purposes, ranging from PowerPoint, Excel and Milestone to Microsoft Project, even Word was used to make schedules and bar charts, or hand-written notes for that matter. All of these methods were extremely time-consuming. When we implemented Safran Planner, the number of users escalated to over 5,000 within a few months, and this is an impressive number compared with our previous experience with planning tools.”

The implementation of Safran Planner called for some end user assistance to help Statoil employees get familiar with the software and to ensure best possible utilization of the features in Safran Planner. Based on a “Getting started” programme developed by Safran, Bjørn Rosland worked out a self-training programme designed to ensure a more unified usage of the tool throughout Statoil.

In their day-to-day work related activities, Statoil employees make use of Safran to plan their projects by setting up a graphic overview of their activities. To illustrate the wide range of projects that can be handled by Safran Planner, Rosland refers to the process a few years back when Statoil became listed on the stock exchange. A separate project team was appointed to manage the listing process, and to assist the team, Bjørn Rosland introduced them to Safran Planner. "I helped them set up their plan, guided them with instructions as to how to use the tool, and they followed these instructions slavishly. When the project was successfully completed, the project team said that if they hadn't followed the schedule in Safran Planner so closely, they would never have been able to finish on time with such a tight schedule."

A tool for the future

Bjørn Rosland is convinced that Statoil has benefited immensely from implementing Safran Planner. "The main benefit is that now everyone has a much better understanding of the value of planning in general. We have a huge number of users of Safran Planner, working within all departments and professions, not just development projects but also groups within the IT department and the finance department, for instance.

Despite the obvious success that Safran's project management software has enjoyed and still is enjoying, some people still prefer to hold on to existing and familiar tool. In Rosland's view, many people don't see the true value of presenting and managing their activities in a sophisticated and professional way. The way you present the schedule is a question of winning or losing out.

"If you don't have a professional planning tool and a proper schedule that is easily accessible to the audience, you won't be able to sell your project. For departments and teams that are working towards partners and licensees, it is extremely important to show the world that we know what we're doing, that we are on top of the situation. In that respect, presenting partners with a pile of 100 pages to show them that we are in control simply isn't good enough."

In order to make the best decisions and to manage their businesses effectively, executives at all levels need information, and having the right information available, accessible in a convenient form and on a timely basis, is the desire of managers at all levels. With Safran, planning teams such as the late-life team at Statoil, finally have a tool that allows them to make the right decisions and get the work done – on time. ■