

TEMPUS RESOURCE

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RESOURCING THE PIPELINE TACKLING PORTFOLIO PLANNING CHALLENGES IN THE OIL AND GAS INDUSTRY



Contents

Synopsis	2
The Oil and Gas Industry: A Snapshot	4
Downstream Production and Export: Game Changing Factors	5
Resource Management across the Portfolio	6
The Solution: Tempus Resource and Tempus Valuation	9
More Information	12

Synopsis

In the United States – and indeed across the world – the oil and gas industry is facing volatile times. Economic and social factors are converging to fundamentally change the balance between regional production and consumption. Achieving a competitive market share is more of a challenge than ever before.

Oil and gas companies need to evolve their strategies to ensure they are equipped to stay ahead. With new market conditions come new opportunities – but the ability to innovate across the portfolio will be crucial to future commercial success.

The key challenges are to identify and capitalize on new opportunities, to plan and execute in a timely manner and to properly resource the strategy so that profitable innovation and operational efficiency are balanced. But when you are dealing with multi-million dollar portfolios, achieving visibility across the opportunities that exist and the company's capacity to deliver to those opportunities is extremely difficult.



This white paper highlights some of the key portfolio and capacity planning issues faced by US oil and gas companies. It looks at the predominant issues and key questions these businesses face, examining how they impact on decision making and forward planning. It illustrates how some of these problems can be tackled, highlighting the value of new technology tools Tempus Resource and Tempus Decisionware in facilitating and supporting both portfolio planning and resource management. It demonstrates how Tempus can bring a new level of visibility, exploration and understanding to businesses managing complex projects and portfolios.

The Oil and Gas Industry: A Snapshot

Globally, we depend on oil production to meet our energy needs. So it's not surprising that the oil industry is one of the most powerful players in the worldwide economy. Every year, more than four billion metric tons of oil are produced across the world – with Saudi Arabia, Russia and the United States leading the way. But times are changing for the industry. The US Energy Information Administration has pointed to a new scenario where liquid fuel supply far outstrips consumption, driving lower prices and threatening profit levels. That slowing in global demand is compounded by numerous volatile economic factors – each of them playing their own part in a downturn that is changing the face of the industry.¹

It follows that, especially in the downstream environment, new strategies are needed to maintain profitability. Anticipating the potential market share and finding new ways to lock in demand is one side of the coin – but maximizing margins through operational efficiency will also play a crucial part in future success.

¹ <http://www.strategyand.pwc.com/perspectives/2015-oil-gas-trends>, Virren Doshi and John Corrigan, 2015

Downstream Production and Export: Game Changing Factors

Of course, a barrel of oil isn't simply a single product. The refinery process produces numerous outputs – from refined oil to chemical feedstock for products including plastics and acid. Gasoline, however, remains the highest value product. It also carries the benefit of being exportable to other world markets, whereas crude oil export remains outlawed by US Congress – although the pressure to lift those restrictions is growing in response to the mismatch of in-country demand and production².

The discovery of huge oil reserves in North America has transformed the production landscape. The focus has shifted from importing the vast majority of oil into the US to processing a great deal of oil in-country. At the same time, emerging reserves of natural gas provide the opportunity to export to the chemical refinery industry on a global scale. Investment and planning is needed to equip the US industry to meet this evolving market scenario with the right operational priorities and capacity.

What, then, does this mean for those at the sharp end of the downstream oil and gas production process? It all adds up to a complex scenario, fraught with the risk of operational misdirection and wastage. Central to overcoming these challenges is the ability to intelligently plan, deploy and monitor resources – but full visibility and the ability to manipulate scenarios and forecasts is needed to support that aim.

² <http://www.cfr.org/oil/case-allowing-us-crude-oil-exports/p31005> Blake Clayton, Council on Foreign Relations, 2015

Resource Management across the Portfolio

If we take a typical scenario for a lead oil and gas company (let's call that company OIL1), annual investment across the portfolio might vary between \$5bn and \$10bn. That investment might represent around 1,500 employees (or resources) that are directly executing capital projects. Perhaps there might be 50 projects in the \$50m plus range with several hundred further projects valued at under \$50m. Forecasting and allocating the staffing resources accurately across that portfolio will be a crucial consideration – especially if that company is to remain competitive against new market opportunities and constraints.



Scenario One: Managing Internal Resources and Expansion Capacity

Managing internal resources is the most immediate constraint. Those resources will be made up from a mixture of

- The people who run the project: the cost estimators, project managers, project controllers and so on.
- The technical specialists: from hard machinery specialists to IT experts.
- The plant operators: this might extend to somewhere in the region of 1,000 operators on site to run a large refinery complex.

If, for example, OIL1 was looking to increase production capacity by 10% within the next two years, that will require the re-deployment of at least 100 resources from current operations.

But this has to be achieved without impacting on the current supply chain. OIL1 will need to the ability to answer questions such as:

- *What impact will we have on current operations if we shift 100 resources from current to new production?*
- *How soon can we re-deploy those resources without a negative effect on our current revenue streams?*
- *Can we meet this expansion demand simply by shifting resources internally, or do we need to recruit to expand our resource pool?*

Scenario Two: Managing External Stakeholders and Supply Chains

Things will get even more complicated for OIL1 in the wider marketplace, due to the need to plan for external factors and resources as well as internal variables. Global insight into the resources needed for construction, procurement, sub-contracting and the like is crucial. In this instance, resource forecasting questions for OIL1 might include:

- *What are we aiming to achieve and what external resources are required to achieve that?*
- *Are the external resources and skills that we need locally available and what is their market value?*
- *Will procurement of those local resources be affected by other projects or activities taking place in the region?*

As these questions come into play, forecasting the necessary resources and commodities becomes even more complex, and some degree of regional or global insight is needed to make the right decisions.

Scenario Three: Managing Portfolio Risks and Opportunities

Companies like OIL1 won't just be thinking about the transactional business case. They will also be looking at huge strategic opportunities and risks – possibly as much as five or ten years into the future. And making informed assessments and decisions without a crystal ball is not an easy task.

It's tough to pin down a recurring, consistent pattern of where and how portfolio optimization is likely to improve the bottom line. It's even harder in the face of upward supply chain expectations. The expectation is that when something is needed (a new plant, for instance) it will be built in good time, at a globally competitive cost, and within an acceptable risk profile. To achieve this, alternative execution strategies need to be considered. So the questions that come into play here might include:

- *What are the delivery priorities in terms of cost, risk and schedule?*
- *How does upgrading or downgrading each of these elements impact on the others, and what will the impact be on the portfolio and the upward supply chain?*
- *What alternative scenarios can we present and how can we compare the likely results with the surest degree of accurate prediction?*

As these types of portfolio forecasting questions come into play, it becomes crucial not just to be able to create a forecast, but also to have the capability to disrupt that forecast, experiment with different scenarios, and compare and contrast the resulting information to predict the most favorable outcome.

The Solution: Tempus Resource and Tempus Valuation

For OIL1 and its industry competitors, the time and cycle of investment will vary. On very large scale projects, planning might take place two to three times a year and will tend to be at a higher strategic level. But there are also many smaller projects happening all the time, operating to shorter time scales and within more dynamic and immediate considerations.

Crucially, planning and execution need to be tackled together in order to generate and benefit from quality data. And in a business where the data is large scale and complex, old fashioned spreadsheet methods are simply not up to the job. The sheer labor and time delay involved in manually updating and manipulating scenarios negates any potential visibility or benefit that might be achieved.

In response to these issues, ProSymmetry has developed **Tempus** – a proprietary software suite that gives users the capability to capture and manipulate data in real time, without limits. The ability to run instant ‘what-if?’ scenarios across both the resource and portfolio landscape is transforming the potential for companies like OIL1 to gear up for the challenges ahead and meet them in the most competitive fashion.



There are two products in the Tempus suite.

Tempus Resource

Tempus Resource equips you to model resourcing options for executing a project or a portfolio of work. It provides the ability to create powerful resourcing scenarios using live data – either inputted on a standalone basis or integrated from your own PPM tool. Once the data is configured, users have the ability to:

- Run instant ‘what-if?’ scenarios that demonstrate the impact of different resource allocations.
- Easily identify over and under allocations of resources so that issues can be resolved.
- Answer questions such as “when can we start our next project?” and “what impact will starting a new project have on our current projects?”
- Present results in a clear, intuitive visual format, so that decision makers can quickly appreciate the implications of different resourcing strategies.

Tempus Decisionware

Tempus Decisionware equips you to model options for engineering value and new opportunities across the portfolio. It quickly and accurately compares and contrasts the likely value of any scenario you choose to explore, enabling you to consider issues such as:

- Different options for growth and diversification and the likely considerations and outcomes.
- Risk modelling and analysis.
- The implications of different entrance and exit strategies.
- The likely value and impact of new business innovations.

The key to Tempus is its power combined with its simplicity. Designed for intuitive use and easy visualization, it gives planning teams, executive teams and boards the tools and information they need to execute intelligent, informed decisions that will promote growth in a volatile marketplace.

“Nothing else even comes close to ProSymmetry in terms of specifically addressing our questions around how we model and execute our portfolio. Tempus provides the next logical evolutionary step beyond spreadsheet data. What’s significant is the modelling, the patterns and the ability to quickly discuss options. Tempus allows our people do what they’re great at, whilst the tool models vast amounts of information to inform our decisions. That’s what ProSymmetry delivers to us.”

Leading Oil and Gas Company, ProSymmetry Client and Tempus User

More information

For more information on any aspect of the Tempus Suite, including consultations and demonstrations of the software, contact ProSymmetry:

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About ProSymmetry



Founded in 2007, ProSymmetry™ was established as a software company and project portfolio management (PPM) consultancy offering both system integration and application hosting services. The company's expertise in PPM software implementations led it to identify gaps in resource and project portfolio analytics, and the need for practical tools for what-if simulation, resource forecasting, strategic planning and project valuation. It is this need that the Tempus software suite has been designed to address.