Seismic Shifts:
Driving the Future of Oil and Gas with New Technology

The Oil and Gas industry has seen its fair share of highs and lows over the past two decades and is arguably one of the most unpredictable and volatile areas of heavy industry across the globe. That context presents unique project management challenges and is generating a new breed of technology software designed to equip Project Managers to respond to uncertainties in real time. Javier Sloninksy is the CEO of EcoSys, a specialist technology supplier working with project management clients across the governmental, industry, utility, transport and IT sectors. He explains the latest challenges to Project Manager Today's Editor, Amy Hatton.

The changing environment in oil and gas production is one that we're all witnessing, as Sloninsky explains. "We all have some sense of the movement that's going on just through our day to day lives and phenomena like the rising cost of fuel" he says. "There are certainly major changes happening in both the upstream and the downstream side as well as geographically. Rapidly increasing demand from the developing world is a huge influence on the evolution of exploration technologies. In Canada, for example, oil production is focused on unconventional sources, generating extraction technology that's more involved and complex than elsewhere. Here in North America there's a massive boom in shale gas. It's looking like we'll be one of the largest global exporters by 2035."

These are therefore exciting times, but they don't come without their challenges. "In all honesty the industry as a whole is shifting seismically, and that has caught everyone off guard" Sloninsky explains. "The lead time involved in sourcing, exporting and transporting gas means that you can't revise investment strategies as quickly as the market changes. Big oil and gas owners are constantly looking at new exploration opportunities and the benefits of bringing that oil into production. That creates a situation where Project Managers have an unusually intense level of variables and risks to track."

Traditionally, EPPM (Enterprise Project Portfolio Management) solutions are sought through Primavera – but Sloninsky contends that there is a need for a fresh perspective in this area. "Primavera is undoubtedly a great tool, but it centres on schedule planning and management" he points out. "But pretty early on, around the year 2000 the landscape changed dramatically, and new technology developments are rapidly catching up and overtaking traditional models. Nowadays less than a third of capital energy projects come within 25% of their original targets. That's incredibly low. By 2003 organisations like Shell began to embrace the importance of developing a global approach to project management. One of Shell's issues was their ability to monitor and manage the implications

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of spend and adaptation. There are so many rapid variables, compounded by the fact that planning how you're going to get to production may well involve a five to ten year lead time. In order to get to grips with how the investment is actually going to turn a profit you have to get right down to the granular level of operational and budgetary planning. But you need a very precise handle on the cost impacts, the schedule impacts and the risk that's taking place so that you can get a real view of development performance. That's where technology innovations can come into play."

In the current climate this is particularly pertinent to the downstream market in Sloninsky's view. "On the downstream side you're dealing with much tighter constraints on profit margins. You're trying to refine and produce as cheaply as possible, but that might involve building more refineries, installing piping or bringing in new engineering teams in reaction to what's discovered, so it's important to be extremely analytical about the pricing and the bidding that's going on. Maintenance management is a major issue as well. In a refinery that's literally producing thousands of tonnes of oil in a day there are certain processes that have to happen when the plant is shut down. Maintenance management involves multi million pound spends over a very short period – often as little as 30 days. But historically we also know that during those shut down periods unexpected issues always arise. So it's vital to be able to look at the value of what's being achieved against what's been spent in order to develop a detailed productivity matrix that can monitor whether everything is on track on a real time basis. That demands an intense level of scrutiny and exacting attention to detail."

Surprisingly, it seems that the industry's capacity to keep up with these project management issues is not as sophisticated as one might imagine. "In terms of the project management technology, in the past there have been significant gaps around the capability to track costs in an unpredictable environment" says Sloninsky. "That hinders the pre-emptive actions organisations can take to improve performance. Ten years ago even massive organisations were relying on spreadsheets. The problem is that by the time the monthly report has been produced it ends up being backward looking because of the fast moving nature of the industry. It's crucial to be able to track the potential investment pipeline and constantly evaluate that against the fast moving climate. The development of estimates, budgets, execution strategies and procurement strategies are all extremely data intensive in terms of not just making those decisions but adapting those decisions and aligning cost expenditure to a volatile environment. These processes are incredibly labour intensive. When EcoSys first moved into this space we were quite taken aback that so many of them were being carried out manually."

EcoSys has responded by developing tools to support the meticulous precision and level of change management required in these heavy industry sectors. "We've focused on the enhanced ability to track trends, forecast and execute in a very pre-emptive manner. That facilitates an agile approach and economies of scale. For example if you can clearly see that you need to deploy across multiple locations then you might respond by executing a single contract across those projects for cost efficiency. Another important area is quality and safety. We've all seen the impact of disasters in oil and gas production. When a tragedy like that occurs there are so many parties involved. It can be very hard for companies to step back and look at what they need to do next. The right technology can facilitate the necessary analysis, communication and rapid action to recover resources and minimise the impact."

It's clear that for Sloninsky the issue is not about replacing the immense project management skills set that's embedded into this sector. Rather, it's a question of new thinking in developing toolkits for the 21st century and beyond. "This industry has so many people who have an intricate understanding of project management processes but up until recently they haven't had the capability to automate those processes and enable that rapid response on a day to day basis. Technology doesn't provide the knowledge. But it does provide the analysis and visibility to understand and react in an agile and pro-active manner. It's also a way to transfer knowledge. In this sector there's a big generation gap. The senior professionals need to train a new generation who don't have that lifetime of expertise but are potentially more technology savvy. New technology tools can marry that gap. Oil and gas is a massively complex industry, but choosing the right technology is one of the more solvable parts of the puzzle. I would really encourage companies to take a look out there and discover what's available."

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Sources:

UK Oil and Gas: Business and Government Action, HMRC, March 2013: www.gov.uk/government/publications

US Energy Information Administration: www.eia.gov

Find out more:

For the latest sector news head to Oil and Gas UK, the leading representative body for the UK offshore Oil and Gas industry:
www.oilandgasuk.co.uk

To explore how EcoSys could help improve your projects' cost performance go to:
www.ecosys.net/oil-and-gas

For a live demonstration of the EcoSys solution visit: **www.ecosys.net/demo**

Oil and Gas in the UK: headline figures

According to industry and government sources, the UK's Oil and Gas industry:

- Is the largest producer of oil and the second-largest producer of natural gas in the European Union
- Employs over 400,000 people
- Is the largest industrial investor, with the Department for Energy and Climate Change (DECC) forecasting investment of £14 billion this year
- Meets almost one half of the UK's total primary energy needs
- Boosts the balance of payments by almost £50 billion a year by reducing Oil and Gas imports and by exporting goods around the world
- Supports a strong domestic supply chain that has seen revenue growth each year since 2008, reaching £27 billion in 2013

About the contributor

Javier Sloninsky is the CEO and Managing Director of EcoSys, a provider of web-based project cost and portfolio management software for industries including engineering and construction, energy, utilities, government, and IT. Javier has more than 16 years of leadership and hands-on experience in the commercial software industry, and has advised organisations including the US Department of Defense, Shell Oil, United Utilities, and SunTrust Banks in financial and project management best practices. Before co-founding EcoSys in 2000, Javier served as a Product Manager at Eagle Ray Software Systems (acquired by Primavera Systems, now part of Oracle).