



THE FUTURE IS OURS TO SEE

WITH THE PRICE OF A BARREL OF OIL THE SAME AS IT WAS DURING THE 2008 GLOBAL ECONOMIC CRISIS, IS THE TIME RIPE FOR RADICAL CHANGE IN THE OIL AND GAS INDUSTRY AND HOW WILL GIS COMPANIES RESPOND TO SUCH CHANGES? ALISTAIR MACLENNAN TALKS TO DANNY SPILLMANN, DIRECTOR OF ESRI'S ENERGY TEAM, TO FIND OUT WHAT'S IN STORE

AM: Is this a time of unprecedented change for the oil industry?

DS: I think that we are seeing changes in the industry like never before. The oil price has dropped to what I would call 'significant' lows due to the economic downturn and continued increased global production. Now we have a situation of over-supply and the price has been suppressed at an amazing rate.

The industry has arrived here because of the increased number of open markets and an expanding capable, educated and mobile workforce. Companies are under tremendous pressure to rapidly evolve, cut costs and become leaner, while increasing productivity. It's a remarkable time to work in the industry – the pace of change is now faster than ever.

What will the oil and gas industry look like this time next year?

Oh, to have a crystal ball and predict the future! It doesn't look that hopeful for a price rebound – most analysts believe that we will see continued price pressures. Of course, this is bad news but it's particularly so for companies with significant debt ratios. This could fuel (pun intended) an increase in mergers and acquisitions. It may be that even some large names will surprise us in taking the opportunity to make some bold moves... but my crystal ball isn't brave or wise enough to predict which.

What I can tell you for sure is that behind the scenes, we are working with many companies (both large and small) that are quietly taking this opportunity to look again at many of their internal processes



Esri's head offices in Redlands, California



Danny Spillmann, director global business development, natural resources, at Esri

and see how technology can help transform their operations. Mostly they are looking for practical ways to become more agile and adaptable, ready to come out of the downturn stronger than ever before. We're working with them to design new capabilities and help hone practices.

Do companies face different challenges depending on where their operations are based?

Absolutely. We work with companies in wildly different geographic regions that push the envelope of operations technologies. Deep water, cold climates and often these days, very difficult political and security conditions make for big challenges.

So companies have to adapt again and rapid evolution will be critical. Those companies that do operate in challenging environments and who have had to adapt are perhaps better prepared to deal with the current economic and industry pressures.

Whatever the environment, leases, wells, operating practices, infrastructure, safety,

logistics, weather and so on all have a location or spatial aspect to them. Understanding how they relate to each other has been our passion for some 40 years, in order to help improve workflow efficiencies. So all spatial technologies have a real opportunity in a difficult market, if they can bring real value.

How have the changes in the marketplace altered the way that suppliers to the oil and gas industry work? And how has the Esri team changed its approach?

Great question – we have needed to become much more global in scope, and truly multi-national in our approach to business. We need to be experienced in those different climates we discussed that present a wide variety of on-the-ground challenges.

We need to provide detailed workflows, and act as more of a trusted advisor and consultant than merely as a software vendor – those days are gone. Our approach, not only in petroleum, but across our whole organisation, is to build long-lasting relationships that deliver tremendous business value to our customers.

From a technology perspective, we have matured from a customisable desktop application suite that generally required some training to become proficient, to a highly configurable platform-based approach, that is easy to use by all.

Petroleum companies need to deliver solutions quickly and efficiently to their users, and IT departments are dealing with increased expectations from employees, who want to use similar tools at work as they do at home. They expect fast access to data, intuitive and integrated applications, and want to explore flexibly on their own. This has fuelled a transformation in the way we build and deliver products.

All suppliers must now be as agile as the customers' demand.

How will software support the new objectives of oil and gas companies?

When organisations are faced with extreme challenges, it sometimes provides the impetus and opportunity to rethink established ideas, which may be stale. We – and I'm sure other companies – are partnering with long-standing customers to develop new ways of integrating real-time spatial data, utilising the cloud and pulling value out of 'Big Data'. We are even looking at the Internet of Things.

But how these technologies are used will be key. Many companies have reduced costs but managed to improve their decision making by integrating thinking that's more 'spatial'.

An important point here is that you don't have to be big or bold to innovate. Indeed, many of the most innovative companies are quite modest in size, but they have an eye to the future and an undeniable entrepreneurial spirit, that even in these difficult times drives them forward.

Will oil and gas staff need to learn new skills to adapt to a new industry?

Without a doubt. At the same time, I believe that many people are learning new skills from exposure they gain outside the workplace and at home. Take, for example, your smartphone. No one goes to training to learn how to use simple, focused, mobile-based apps. People are able to find an app that provides them the answers they need, quickly install it and then leverage it for specific tasks. This is very similar to what people want to do at work.

People think spatially these days. So why not look at your phone in the morning and see how your fields are performing, where your staff are or what your competitors are doing? We're working to provide simple workflow-oriented apps that require little or no training.

But don't get me wrong – training staff will be crucial for higher-level implementations and spatial infrastructure support. We've worked to share experience and knowledge through user groups and industry-focused conferences where users come and share what they are doing for the benefit of the community as a whole.

Within this framework we are currently creating a new young professional network and working with some of our long-standing customers to become petroleum user group fellows, and integrate the two through a mentoring programme. We are also offering inexpensive, home-use licenses, so that GIS-interested staff can work at home on personal projects and acquire more skills.

Standing still is one of the fastest ways to move backwards in a rapidly changing world.

What impact have unconventional fuels had?

The unconventional organisations are changing the way petroleum companies do

business. They are challenging the supermajors and they have created a whole new market that will continue to deliver for many years to come.

However, that success and growth has also created environmental and public relations challenges for many companies. Today, they need to very closely monitor the impact on both the environment and to local resources such as staffing, housing and infrastructure (which are also spatial factors by the way).

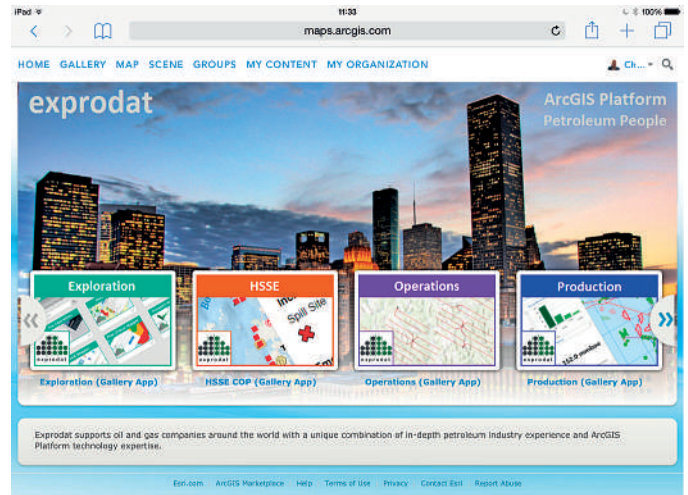
As countries around the globe with similar unconventional fuels debate whether they should develop these resources, I'm sure that there will be many an opportunity to reflect on the patterns and practices developed in the US market. I guess we are yet to see if some of that learning can be exported in the future by the companies that have learned the lessons, but that may have to wait until better prices eventually return. Now where's that crystal ball?

STANDING STILL IS ONE OF THE FASTEST WAYS TO MOVE BACKWARDS IN A RAPIDLY CHANGING WORLD

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Esri partner Exprodat has extended ArcGIS to meet specific oil and gas requirements



ArcGIS Online is being used to allow everyone in an oil and gas company to access spatial data



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