



# THE RISE OF THE SPATIAL PLATFORM

HOW WILL THE NEXT PHASE OF GIS EVOLUTION CHANGE THE OIL AND GAS INDUSTRY? GARETH SMITH ARGUES THAT IT HAS THE ABILITY TO TRANSFORM MANY AREAS – ALTHOUGH IT NEEDS TO BE USED WITH CARE

The oil and gas industry is facing mounting challenges: increasing costs, harder-to-find hydrocarbons, increasing geopolitical instability and falling oil prices.

The amount of information created across the whole industry is rising at an exponential rate whilst technical and operational risks have increased. As the 2010 Deepwater Horizon disaster in the Gulf of Mexico illustrated, the impact and cost when things go wrong can be enormous.

So how will the latest offerings from GIS suppliers support companies to meet these challenges?

We have worked in the oil and gas industry for nearly 18 years and have helped to develop GIS from a niche tool used for simple map-making in the mid-90s to something that now has the potential to affect the entire value chain.

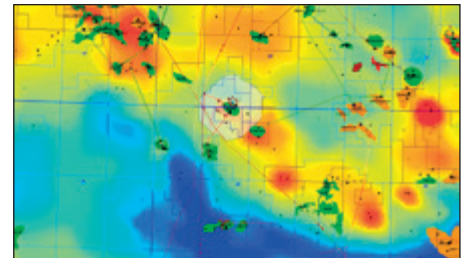
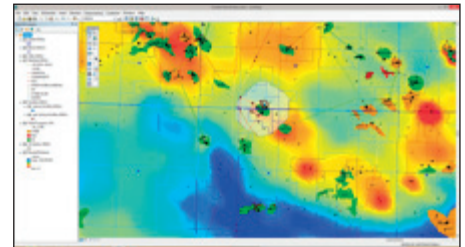
The introduction of web-based GIS around the year 2000 helped broaden the audience beyond the desktop user community. Sadly, things stagnated somewhat and web GIS arguably failed to deliver fully on its early promise. We ended up with a lot of 'desktop in a browser'

systems that didn't really move us past putting paper maps on a screen; and poorly drafted ones at that. You might argue that all it really achieved was the death of the professional cartographer!

In parallel with these developments, desktop GIS continued to evolve and has become more sophisticated, remaining firmly the domain of the specialist.

The exploration and production (E&P) industry has always generated vast volumes of information. This has often been held in poorly integrated departmental silos, suffering from duplication and inconsistency and with no standard way to access and share it.

These problems have created barriers to functional integration and operational efficiency that often lead to poor project execution and soaring costs. Just about every piece of information in the E&P industry is or can be linked to something spatial, and the potential for leveraging GIS to improve efficiency and reduce risk is enormous. Yet this hasn't really happened over the course of the past two decades. So what's changed to make this happen now?



Oil and Gas infrastructure data, central North Sea, UKCS



## The next phase

The next phase in the evolution of GIS is upon us, triggered by the broader commercialisation of GIS in the 00s and beyond. Google Earth, satnav, smartphone GPS integration – ‘spatial’ is now an integral part of our day-to-day lives, which has raised awareness about its potential. Many of the new spatial services we consume are cloud-based and delivered in real-time. Are we now entering the age of ‘GIS as a platform’?

That’s certainly what Esri, the market leading provider of GIS technology in our industry, would like us to believe. Over the past couple of years, the company has been pushing the message that GIS should be ubiquitous and accessible through all channels: desktop, web and mobile, and by everyone, not just the geo-specialist. They have also adopted the app paradigm, pushing GIS functionality and data in targeted, bitesized pieces to everyone who needs it, on whatever device they want to use. Esri argues that the platform can now combine spatial with all other key business data, providing the integration that’s been missing for so long.

Is the oil and gas industry buying in to this vision? There are signs that it is, but barriers remain. In our latest annual oil and gas GIS benchmarking study, we found that more than 80% of the participants were struggling to move beyond the basics. Many of the issues relate to the view that GIS is somehow ‘special’ and only has specific uses. GIS often propagates from a single department, usually in the upstream hydrocarbon exploration side of the business. This has stopped GIS expanding into other departments and hindered the technology being adopted as a corporate business tool or horizontal technology platform.

GIS is often funded from the department in which it originated. There is little understanding of the potential at more senior management levels. It might be argued that the GIS community is partly responsible for this, unwittingly propagating the view that GIS is a technical speciality and ‘hard’ for others to use without their support.

It has taken time for decision makers to see how ‘GIS as a platform’ can affect their business in a broader sense and to put it on the same footing as, say, integrated finance management or business management systems such as SAP.

There is also an innate suspicion of all things ‘cloud’ that will take time to overcome in what can be a very conservative industry. However, oil and gas companies have started to revise their IT strategies in light of the cost pressures they face and cloud is now part of the mix. On top of that, we discovered other issues: skills (50% of the companies

we surveyed have no geodetic awareness training), support (more than 80% lack a career development path for their GIS support staff), systems integration and data management.

## No panacea

The GIS platform vision doesn’t necessarily fix these fundamental problems. In fact, in some cases, it could make them worse – not only are we managing data in-house, we’re now throwing it out on to often poorly managed cloud systems. The ability for everyone to make a map allied to a systemic lack of geodetic understanding could lead to potentially catastrophic errors.

But despite all the challenges we face, we are beginning to see real signs of progress. The number of presentations at geospatial industry events that focus on deployment of the GIS platform is increasing.

Our clients are starting to explore the role of the platform in areas such as emergency response, engineering design, integrated operations management and environmental management. GIS is becoming part of the conversation right across the E&P industry, and is starting to be viewed as a core technology.

And compared to technology spend elsewhere in the E&P industry, GIS is relatively cheap! According to our review, the average spend per head on GIS (including technology, data, support and training) was just US\$14,000 per annum. That’s a tiny fraction of the total IT spend in most companies. In times of US\$50 (and falling as I write) oil, that may be a big driver for growth in the use of GIS over the next couple of years.

We are just scratching the surface with GIS in the oil and gas industry. There are still many challenges, but we are potentially at the tipping point where GIS moves from the sidelines to being an integral part of industry’s DNA. We should find out soon enough if the ‘GIS as a platform’ vision has any substance and if it really is a game changer. I believe that it will be.

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