

Exploration – what next?

This is a commentary on the US shale revolution, by a participant:

“Geology is a science. Geophysics is a
science.
Exploration is a Business”

Exploration – what next?

“Geology is a science. Geophysics is a science.

Successful Exploration is a Business”

Given that, and everything we have heard today, where do we go from here, what happens next?

Exploration – what next?

This is usually attributed to Albert Einstein:

“Insanity: doing the same thing over and over again and expecting a different result!”

... '...so let's agree that a lot has to change?

Short-term (2 -3 years)

- The focus will be on:
 - Existing provinces, many of them offshore
 - Exploiting discovered, or extremely low risk accumulations
 - Closeness to Infrastructure
 - Short times to 1st Oil/Gas
- We might call this “Infrastructure-Led Exploration”

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- The focus will be on:
 - Existing provinces, many of them offshore
 - Exploiting discovered, or extremely low risk accumulations
 - Closeness to Infrastructure
 - Short times to 1st Oil/Gas
- Instead, we might call this “~~Infrastructure-Led Exploration~~ Infrastructure-Controlled Exploitation”

Longer-term (4+ years)

- Some companies (Majors) and NOCs will need new resources/reserves, requiring:
 - New Ideas
 - Low Cost Oil (we don't need any more Gas!)
 - Not Deep Water, not Arctic
 - Onshore
 - “Regional” approach
- We might call this “Regional-scale Exploration”

How to do “Infrastructure-Led Exploitation”

- Geoscientists as part of Exploitation team(s)
- Low overheads, low G&A; exploit cost leverage
- Technology Innovation:
 - ✓ Multi-component seismic; 4D when producing
 - ✓ Machine Learning (applied to subsurface interpretation)
 - ✓ Production Analytics

How to do “Regional-scale Exploration”

- Low overheads (especially Executive management!)
- Low G&A; exploit outsourcing
- Portfolio of opportunities (not just one play!)
- Technology Innovation:
 - ✓ Satellites
 - ✓ UAVs (manned aircraft only if no alternative!)
 - ✓ “Boots on the ground”*
 - ✓ Wireless seismic
 - ✓ Integration: seeps, gravity (FTG), “The Rocks”*, seismic (preferably 3D)

*I mean the ‘classics’ = stratigraphy, sedimentology, structural geology, geochemistry, petrophysics