

Culture of Greatness - Resource Plays and Resourceful People in the First Unconventional Downturn

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ABSTRACT

The culture of energy and related economics is constantly evolving. One thing we know for sure is culture always trumps strategy. Just about the time we become proficient at finding unconventional gas resources the culture of supply and demand takes over and the strategy of exploring for gas is temporarily obsolete. Now “liquid-rich” is the strategy as it matches our economic models; however, with current oil prices have we been too successful or is it just another economic cycle? Predicting commodity prices is never easy. The simple answer is we produced too much oil against lower demand but the answer is never simple. How we’ve reached the current supply-demand scenario depends on a complex list of variable around the world.

In the end it is all about economics. Can we still make a decent rate of return with a forward price deck starting at ~\$30 per barrel of oil. The four premiere plays - the Bakken, Eagle Ford, Woodford/Meramec, and Wolfcamp/Bone Springs/etc. - are amazingly resilient especially as costs decrease. Even so, most companies are “coring up” to focus on their best acreage in these plays. Emerging plays like those in the Powder River and East Texas basins look great and appear to be technically successful but cannot survive the current price environment.

In order to understand which play could be successful in a downturn you must first understand the geologic and engineering parameters of the plays. To date the most successful plays have been “in-situ” or at least “hybrid” where the reservoir is encased in or in very close proximity to source rock. This is true of the Woodford, Bakken, Eagle Ford, Wolfcamp, and similar plays. In these cases it is primarily a matter of understanding the maturity of the source, dynamics of the reservoir and how to drill and hydraulically fracture for maximum performance.

Migrated resource plays like the Mississippian carbonates in Oklahoma and Kansas are more complicated. They are essentially leaky traps so in addition to understanding maturity and the pore system you must clearly understand migration, formation waters, and how much oil can penetrate the pore systems of tight rocks.

Of course, along with the unconventional rock is the culture of technology. We are all aware of how the marriage of horizontal drilling and staged hydraulically fracturing has changed our culture from conventional to unconventional. In geology the “niche” technologies often hold the keys for discovery - organic geochemistry, basin “thermal” history, petrophysics and geomechanics. In geophysics we have micro-seismic. In reservoir engineering it is primarily a different twist on PVT - which in the end may be the most important key for production. Many of these key technologies can be studied and improved.

Finally, this is the first time the “resource professionals” are experiencing a downturn. For conventional players the mindset was to start with a broad view and focus down to a limited prospect. The mindset for unconventional players is just the opposite - we start with the minutia and

expand the boundaries to include parts and even all of whole basins. As we discovered with past downturns this is a good time study the plays and prepare for the upturn. Now is the time to try and understand everything possible about the rock - literally becoming an expert on its origin, chemistry, physics, etc. It is a tough but exciting time to be in the oil (and gas) business. It is a great culture. As long as we match our strategies to the current culture of technology and economics we can be successful.