

Play-Based Exploration: Applying Depth and Breadth of Geoscience Understanding.

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Abstract

The past 30+ years have witnessed a wide variety of exploration strategies and a number of technological “revolutions” in the search for oil and gas. Although the exploration landscape and tools of the trade are so different than they were in the early 1980’s, in one aspect we appear to have come full circle, realizing that a deep understanding of our basins is the critical element in any success. And skipping lightly over such an understanding is the primary cause of failure.

This may sound obvious, but as an industry, this was not the modus operandi during a significant period of time from the late 1980’s into the beginning of the new millennium. Over the past 10 - 15 years, with “easy oil” becoming more difficult to find, new approaches were needed. Oddly enough, this new approach was to rediscover our roots, getting back to the basics of the sciences we fell in love with so many years before.

Across the industry, different terms are used. At Shell, the core of this resurgence in the geosciences was captured under the moniker “Play-Based Exploration”. At its simplest, Play-Based Exploration involves the organized integration of virtually every sub-specialty of the geological sciences in three separate stages of analysis. A strong foundation of basin understanding is required before moving to the second stage of evaluating the potential “plays” within the basin. Only after these are complete can we look to evaluate the prospect potential of an area, the third stage of an exploration evaluation.

Doing this takes work and it’s messy. To put the story together requires working together, on tables, with maps and pencils, as well as state-of-the-art computing. It’s integrative and iterative. The geophysics, geochemistry, and geology have to come together. This will be illustrated through a variety of examples.