Re-Thinking the Goals and Methodology of 3D Seismic Interpretation

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Abstract

As any new technology emerges, the pioneering work and initial deployment inevitably involves less-than-ideal workarounds. Over time, these can become work habits, which then get passed along as "the way we do things", and are eventually mistaken for best practices. Ironically, the more central a process becomes to our daily work routine, the less we question it: we naturally scrutinize and endeavor to improve any unwieldy procedures that only confront us occasionally, but for day-to-day work the human tendency is to just put our heads down and grind it out.

One contributing factor is often that as new features and options do emerge, they are perceived through the lens of existing methodology, and are therefore mentally cast as small incremental improvements to the longstanding approach, without fully recognizing the more dramatic breakthrough potential. If the underlying algorithm is not well understood or explained, poor parameter selection can easily replace one tedious task with another, with no net gain in efficiency or quality and a lingering perception of no new advantage. Quite often, the optimal use of a new tool is also not even recognized by the inventor or programmer who developed it, and requires a point of view that uses the tool in ways that weren't initially intended by the original author.

This talk examines one core skill in our industry (3D seismic volume interpretation) to identify behaviors and patterns that were once required to overcome hardware and software limitations, and which continue to persist despite overcoming the limiting constraints long ago. The talk is agnostic with regard to specific software or hardware, concentrating on adapting our mindset to accept different approaches to using the tools and options that already exist in one form or another in nearly every seismic interpretation platform.