Big Fracking Surprise

By Henrich Greve , INSEAD Professor of Entrepreneurship

It shouldn't surprise researchers that underdog wildcatters, not Big Oil, were the main drivers of the shale gas revolution.

The *Wall Street Journal* has an **article** by Gregory Zuckerman on how the financial crisis and the new technologies for oil and gas extraction surprised the main market players, but were understood and exploited by outsiders. This is probably news to many, and it has interesting practical implications and a strong link to research.   Let's start with the practical part. Many parts of the world were depleting their oil and gas reserves, and special concerns about this were raised in the United States, which tends to worry about the strategic value of energy and relations with the nations in Arabia who are richest in oil and gas. Business people also paid attention, and started making investments that made sense under the assumption that USA would have little energy left soon. Oil company engineers also paid attention, and some worked to find new oil and gas extraction techniques that would work in places where extraction was not possible yet. This is normal for oil companies (or any company that sees its market disappear); in fact the industry also has worked a while on how to get more of the oil out of existing fields. But these engineers and their managers fought a losing battle against superiors who had so much expertise with what worked and what did not that they judged the projects to be hopeless.   Instead, it was minor – very minor – oil companies that developed the “fracking” techniques that are now turning USA into an gas-rich country that could soon start exporting oil. They were companies run by owners who have earlier worked picking cotton and running restaurants: not the usual oil executive background. For the sake of handling global warming, this increase in worldwide burnable materials is a potential problem, but for the US oil industry it is right now a cause of celebration.   Are researchers surprised by this? Well, we do not expect this process to happen every time, but it happens often enough that people have worked on it for a while. Two things happened in this case. First, the technology was disruptive, or different enough from ordinary oil extraction techniques that it was not a natural follow-up to the techniques that the companies mastered. Michael Tushman and Phillip Anderson wrote about the **problems that existing companies have with disruptive technologies** in 1986. Second, the firms were faced with problems that could make them shrink or even die. In 1963, Cyert and March wrote about how **firms with problems search for solutions** near the source of the problem itself and initially try conventional solutions, the opposite of making disruptive innovations.   So, here we have it: many surprised oil executives and few surprised researchers.   **Cyert, R.M., J.G. March. 1963. Abehavioral theory of the firm. Prentice-Hall, Englewood Cliffs, NJ.** **Tushman, M.L., P. Anderson. 1986. Technological discontinuities and organizational environments. Administrative Science Quarterly 31439-465.** Zuckerman, Gregory. 2013. The Outsiders Who Saw Our Economic Future. Wall Street Journal, November 3, 2013.   **Henrich's blog**

Follow INSEAD Knowledge on **Twitter** and **Facebook**

Find article at

https://knowledge.insead.edu/leadership-organisations/big-fracking-surprise

---

About the author(s)

Henrich Greve is a Professor of Entrepreneurship at INSEAD and the Rudolf and Valeria Maag Chaired Professor in Entrepreneurship. He is also a co-author of **Network Advantage: How to Unlock Value from Your Alliances and Partnerships**. You can read his **blog** here.