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Exploring exploration creativity

Oil exploration is a high-risk high-outcome endeavor. A single offshore well drilled on a geological prospect can cost over 100 million AU \$. A single discovery can amount to over 100 billion AU \$. All wells are based on very qualified guesswork; some may have an estimated discovery probability as low as 20%. We shall present three sets of empirical observations on creativity in oil exploration, all taken from a multi-year action-learning project with the exploration teams in a major oil corporation. The puzzle is this: Creativity is typically regarded an exception, associated with stable dispositions of gifted individuals, peak experiences and intense bouts of more or less deliberate innovative efforts. What if creativity is not an exception, but a quality of forms of work, *embedded* in everyday practice? And can one address creativity at work in settings where key personnel question the usefulness of the very concept of creativity?

‘We don’t call it creativity’

He was one of the first persons we interviewed; a respected manager of an exploration team and a person who had participated in many successful exploration efforts. ‘I associate creativity with something that persons in fluffy garments are doing when they are painting doodles and call it art’, he snuffs. ‘I don’t see how that kind of creativity has a place in my work. Exploration operates within basic physical laws and is about putting together data in a large puzzle, basically knowing your field and doing long term science based knowledge accumulation.’ There is laughter. An interlude follows where we partly agree on not looking for the exploration equivalent of pottery making, partly try to qualify how creativity is no contrary to science-based work. Then the exploration manager starts to talk passionately about the importance of seeing the big picture in small scale prospect analysis, about seeing regional wholes, not only singular blocks or licenses or prospects or wells, about being able to imagine geological processes that took place hundreds of millions of years ago, about the importance of conjuring alternative interpretations of the same data, about tectonic movements, thinking in four dimension, seeing opportunities rather than problems, the use of sketches for zooming out, and the eternal need for persistence and passion in exploration. Creativity as science based imagination? We still think of this as one of our best interviews.

‘Why are you not using any creativity techniques?’

We had just been rounding up a two-day workshop with exploration teams. The agenda was to develop and rank hydrocarbon prospect ideas in selected geological regions, staged as an ‘exploration creativity workshop’. The workshop was led by the chief geologist, while we as external researchers had assisted in design and some of the facilitation. It was the third workshop of its kind, and the corporate word of mouth on the two preceding ones was quite good. One of the participants – an experienced facilitator of many development processes in the corporation and well versed in creativity

techniques - had asked to join the workshop to see what was going on. At the end of day two he popped a good question: 'Why are you not using any creativity techniques?' Indeed – why had we not? Part of the answer may seem straightforward. Geologists use a highly specialized vocabulary that will typically leave outsiders in the wild after 5-10 seconds. External facilitating of, for example, a brainstorming session on geological prospects would be very likely to slow down the process, as the many complicated combinations of ideas would have to pass the filter of an (at least partially) ignorant mind. Could this have been overcome with the use of a trained geologist as facilitator? Perhaps - the problem here seems to be that many creativity techniques presupposes distinctness of ideas at an early stage of conception and carry implicit assumption of the value of *steering* idea generation and combination, *and* the assumption that such techniques are more or less valid across widely different domains of activity. These are hefty assumptions. The kinds of discussions we have witnessed in exploration teams seem more like the jamming of jazz musicians than developing new dishwashers. Fragments of ideas, data, viewpoints and alternative interpretations are connected, unconnected, enriched, stripped, negated and saluted in a stream of collective efforts where no single individual has more than a temporary lead. One may try to specify the overall output of the jamming sessions and prepare the ground with communicative tools and resources. But detailed facilitation? Probably not.

'The key was understanding why the previous wells did not work'

After having interviewed more than two dozen oil finders about their successful exploration efforts, a clear pattern began to emerge. It seems that many success stories in exploration share a plot with a breakthrough interpretation in the wake of many years of data gathering, painstaking analysis and, typically, a series of costly dry wells based on geological interpretations later found invalid. Successful exploration then, is often based on the ability to come up with an *alternative* geological model based on the data from dry wells. What does this implicate? A cynical explanation would be that prolonged exploration efforts in a region where there is oil is bound to result in a discovery, sooner or later, and that all discoveries are retrospectively justified as being based on a genius analysis rather than mere luck. More optimistically, the breakthroughs result from novel combinations of interpretations, emerging from a succession of analytical and interpretive efforts with many people and teams involved. Maybe dry wells sometimes are *necessary* as precursors to breakthrough interpretations. Maybe we should talk of *slow* creativity?

Q1. Starting from your own experiences, what do you think constitutes creativity at work?

Can we do with one creativity concept for all kinds of work?

Q2. What do you think are the motivational drivers of creativity at work?

Q3. To what degree would you say that creativity is an individual versus a collective phenomenon, and can activities that lead to breakthrough innovations be 'routinized'?