

PS What is the Business Environment for Global Exploration in 2025 – And What We Need to do Now to Succeed*

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Abstract

Following the oil price crash in 2014, exploration drilling has been at a record low, also seeing a drop in the annual discovered resources since then. This, together with the global production decline, will assure capital investment in exploration in the near future. However, there are two factors that are beginning to play an increasingly important role in shaping what the future of exploration will look like: the energy transition and digital technologies. The energy transition is a necessary and progressive step towards cleaner energy for a growing global population. However, exploration will play a challenging role in this transition as companies will seek to sure up resources in a world that will demand greener corporations.

Another important factor will be the use of digital technology to improve and re-shape the workflows that we employ across our business. It is taking place across all industries and exploration is no exception. New machine learning workflows will have an impact on how and where exploration takes place and the pace at which stakeholders are able to make decisions. As exploration becomes more difficult with challenging new geological plays and a competitive multi-player landscape, it is essential for companies to define a transformational strategy to prepare for these challenges.

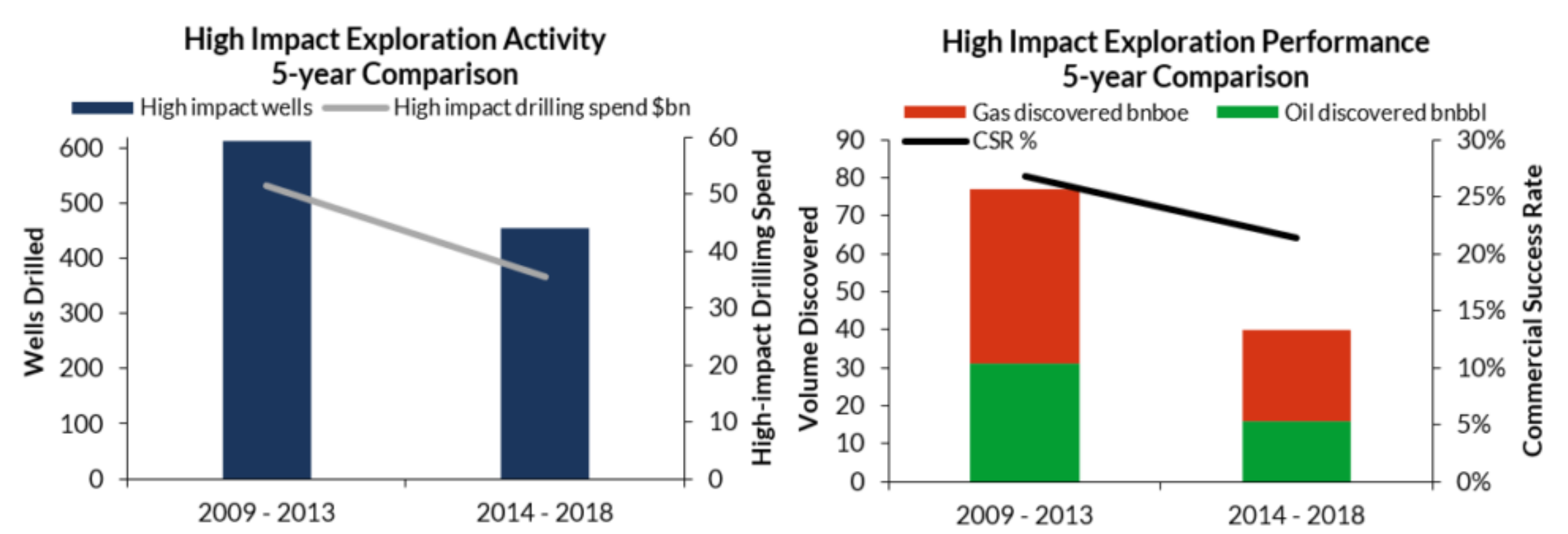
This article incorporates industry trends, corporate strategies and academic research to define a business model for what global exploration will look like in 2025. How we form teams is going to change and they will also need to be flexibly deployed. There will be a sharper focus on where we explore across the globe and how quickly we can see a return on this investment. Societal and regulatory changes will have an impact on what a responsible corporate citizen looks like. As such, there will be a need for closer collaboration between companies and countries in seeking greener solutions to meet emission targets. Furthermore, this article will define a strategy for what companies need to implement now to survive and thrive in the future.

What is the business environment for global exploration in 2025 – and what we need to do now to succeed

By Ronnie Ameerli (MBA, MSc, BSc)

Will one of us plan and drill the last Exploration well?

The current state of Exploration

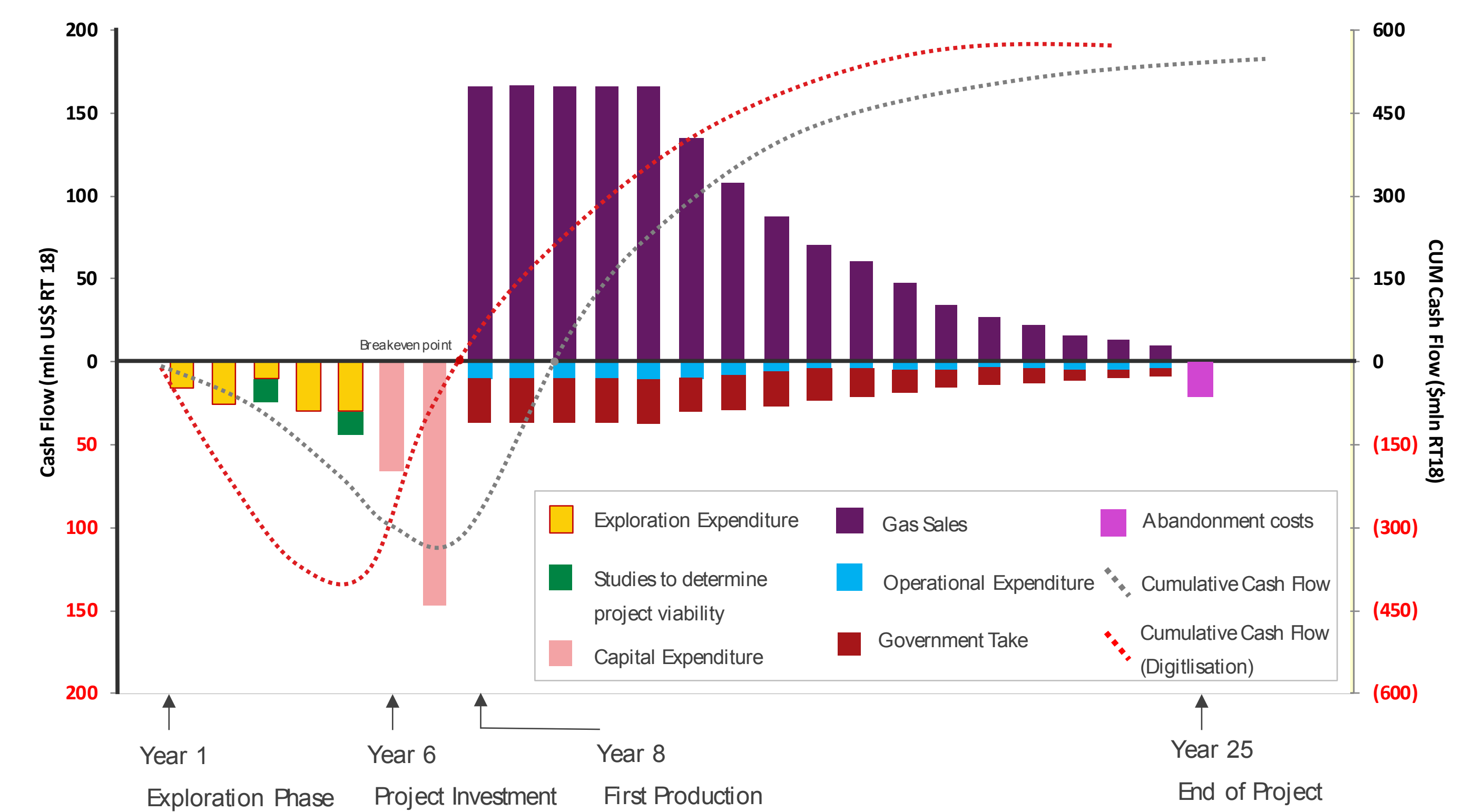


Graphs extracted from an article by Westwood Insights "The State of Exploration 2019"

Insights from Westwood Report:

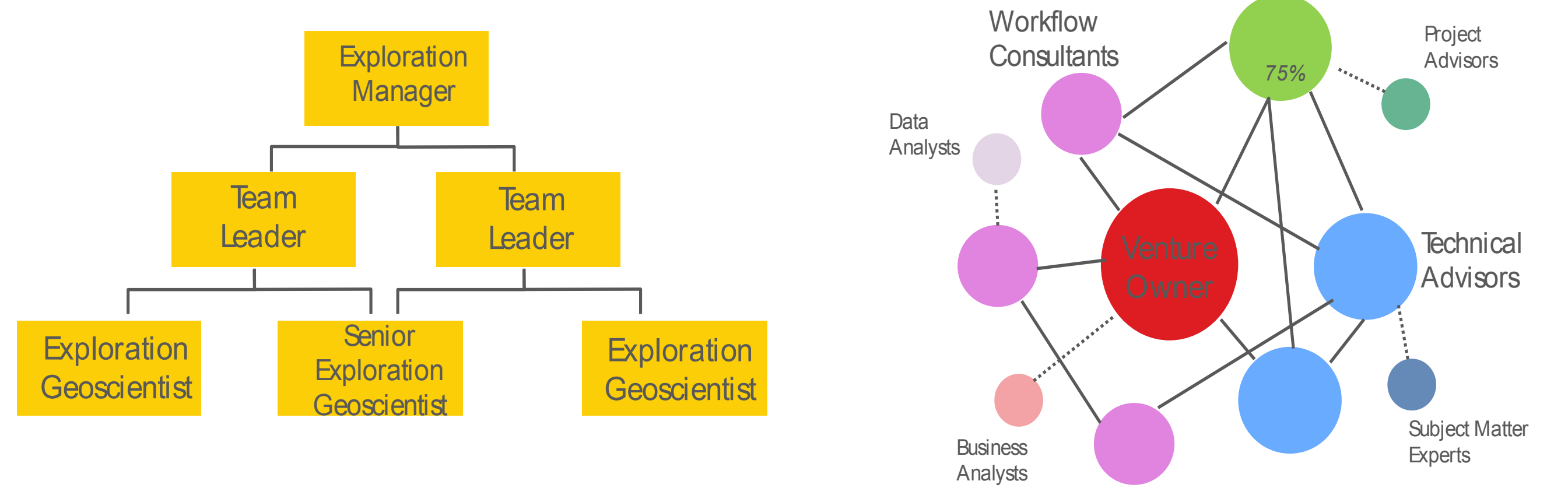
- In 2018, Exploration drilling activity increased by nearly 30% overall compared to 2017.
- Total commercial volumes from high impact drilling decreased to 5.4bnboe from 9.4bnboe in 2017 due to smaller average pool sizes, although more 100mmboe+ discoveries were made. Overall commercial success rates were down to 33% in 2018 from 48%.
- The commercial success rate for frontier exploration over the last five years has been just 6%, opening nine new plays from 154 wells at a cost of \$11 billion.
- 15% of the discoveries over the last five years, categorized as high-risk, have been deemed commercial.
- In 2019, high impact drilling is forecast to increase by 20% to around 80 wells, with more high impact wells planned in maturing and mature plays.

Our business model is going to change....



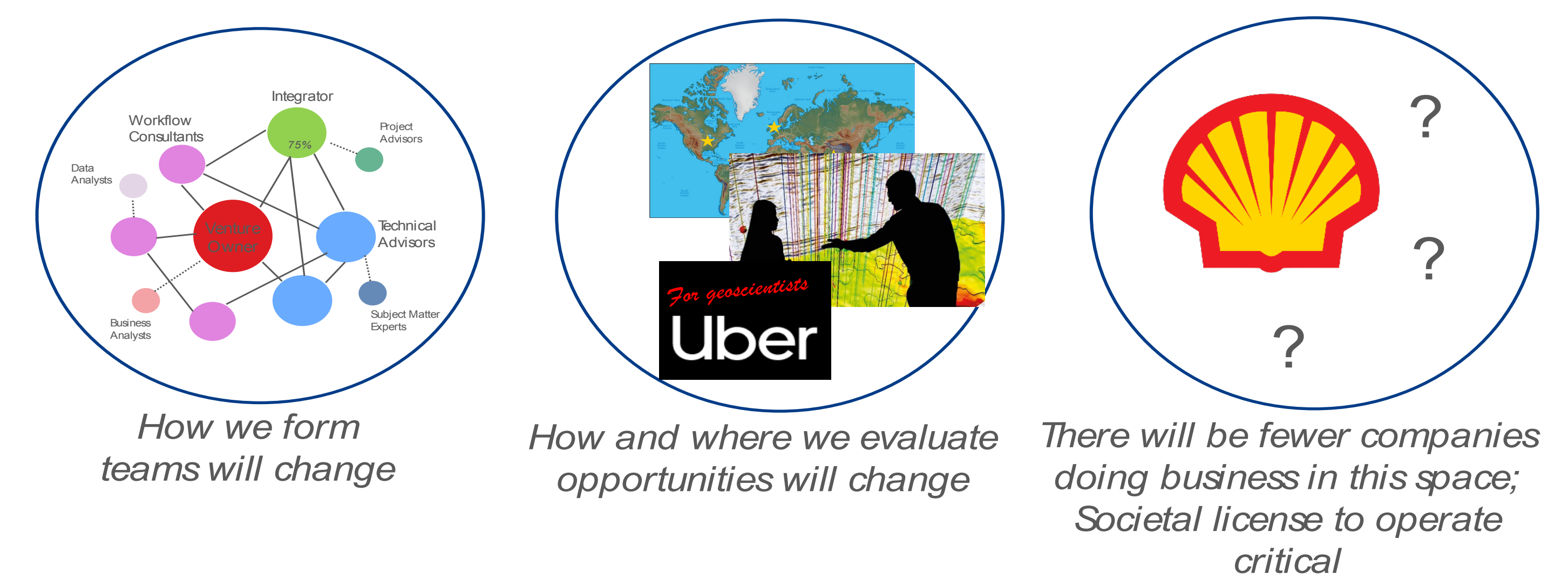
Graph of cumulative spend on a project from opportunity access to first production.

How we work together will change....



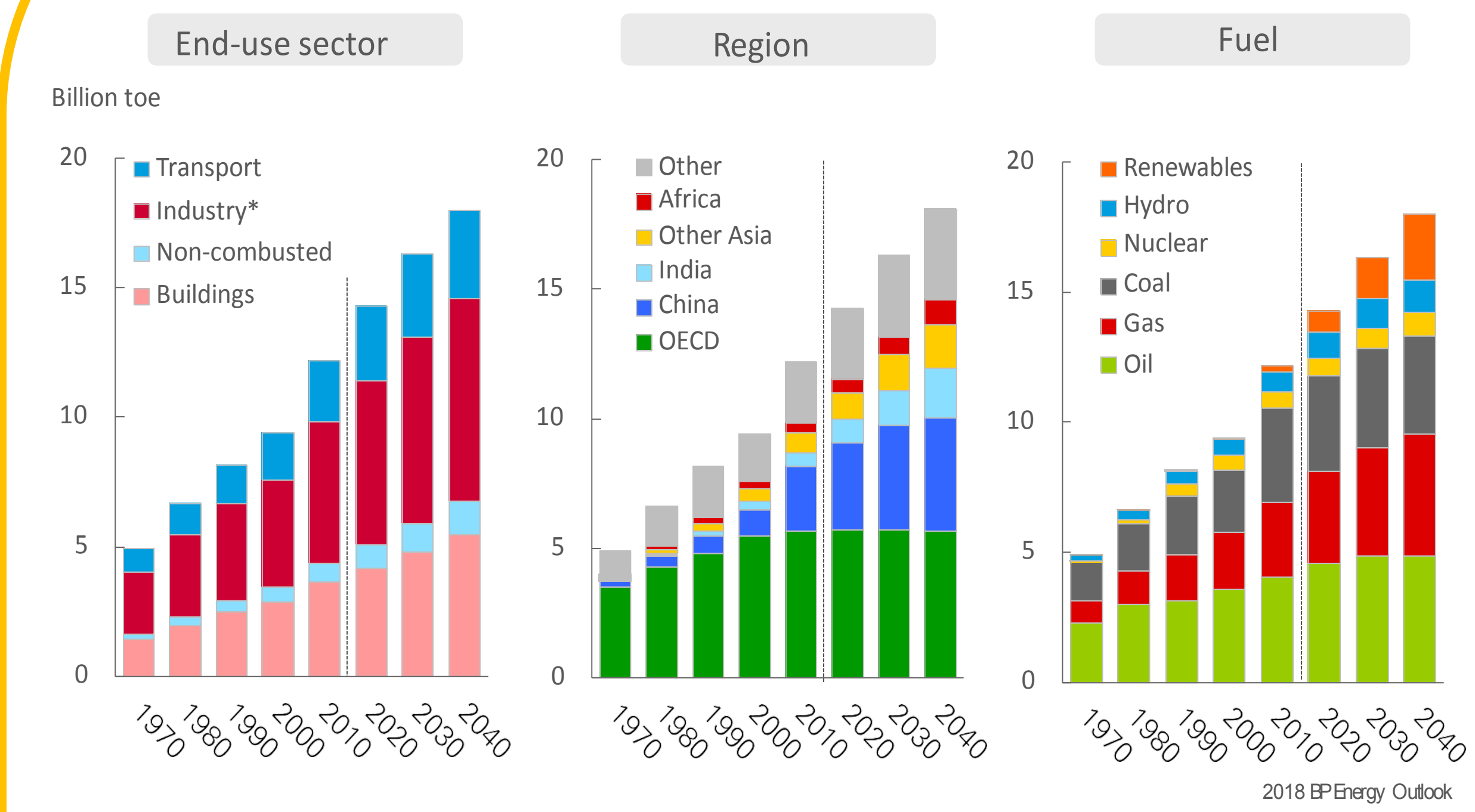
The Exploration teams of the future will likely be those that can move faster, adapt more quickly, learn more rapidly, and embrace dynamic and dual careers. Digitalization and digitisation will have a big role to play in this. However, teams will have to be re-designed not only for efficiency, but also speed and adaptability to enable them to compete in the global exploration business

Predictions: 3 big changes for Exploration in 2025



Focus Now: Technology, Financial Efficiency, People

What will the energy transition look like?



REGION	RENEWABLE ENERGY (>50%)	OIL AND GAS SUPPLY SHRINKS	GAS SURPASSES OIL IN SUPPLY
CHINA	2060	2050	-
LATIN AMERICA	2045	2035	-
INDIA	2065	2035	-
EUROPE ENERGY SUPPLY	2050	1980	2045
AFRICA	*2045	*2045	2030
NORTH AMERICA	2050	2030	2030

The table below summarizes the output of the Sky Scenario by Shell to show a comparison of the energy transition may happen across the globe.

The first column highlights the year in which renewable energy will make up more than 50% of the energy mix. The second column indicates when the oil and gas industry supply (production) begins to shrink. The final column highlights when the gas supply will surpass oil (on a mmboe basis).

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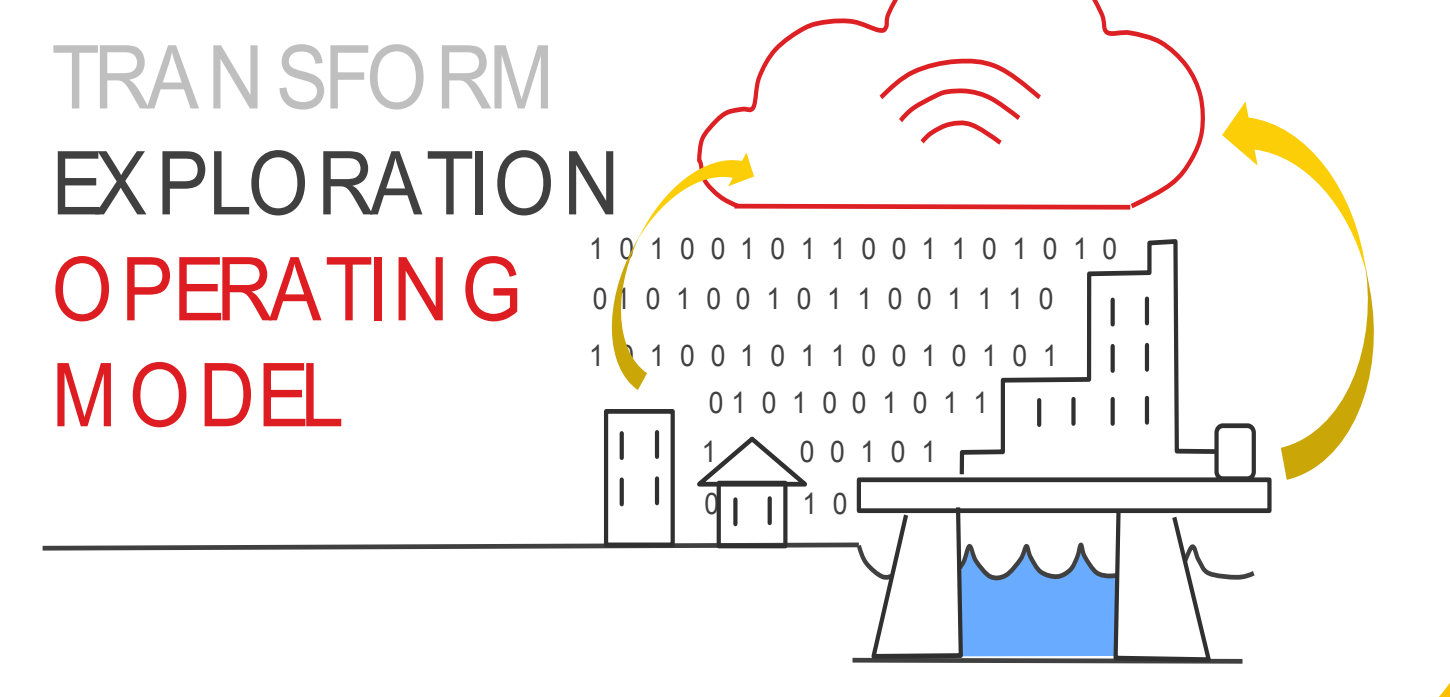
The Digital Imperative: Why Upstream Oil And Gas Is Embracing Advanced Analytics | Wood Mackenzie. 2019. The Digital Imperative: Why Upstream Oil And Gas Is Embracing Advanced Analytics | Wood Mackenzie. [ONLINE] Available at: <https://www.woodmac.com/news/editorial/the-digital-imperative-why-upstream-oil-and-gas-is-embracing-advanced-analytics/>. [Accessed 03 January 2019].

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Exploration represents an organic lever for growth in the upstream business, supporting reserves replacement through competitive bid rounds, country entries and farm-in opportunities. However, the time it takes to move from accessing new acreage or a new opportunity to achieving 1st production has traditionally taken a long time. While much of this timeline is related to regulatory approval and commercial negotiations, a chunk of it is also associated with acquiring, processing and interpreting data to define drill ready targets

As exploration becomes more difficult with challenging new geological plays and a competitive multi-player landscape, it is essential for companies to define a transformational strategy to prepare for these challenges.



Conclusions

To succeed in the future, Exploration will need to place emphasis on the following areas now:

The Role of the Geoscientist

With mundane tasks being done by machine learning, geoscientists will spend much more time focused on unlocking the complex challenges of geology, high-grading the portfolio and working with stakeholders to drive the project forward. Exploration will need to be staffed with technically strong geoscientists, wherever they may be based.

Invest in Research and Technology

The future is more competitive than it has ever been and a successful Exploration organization needs to be at the forefront of technology and research. Key focus areas should be in both digital and green technologies.

Focus on financial efficiency and accelerated project timelines

Many major companies already have a varied energy portfolio and so there is competition for funds internally in an already challenging external environment. As a result, Exploration needs to focus on financial efficiency and to make more projects more attractive, work more collaboratively with other companies and governments to bring forward first production. It also needs to quickly and critically evaluate the likelihood of project success and define a viable exit strategy in the case of failure.