

Long-term Competitiveness Through Digital

Upstream Digital Transformation Conference
Europe 2021

Stephanie Diaz

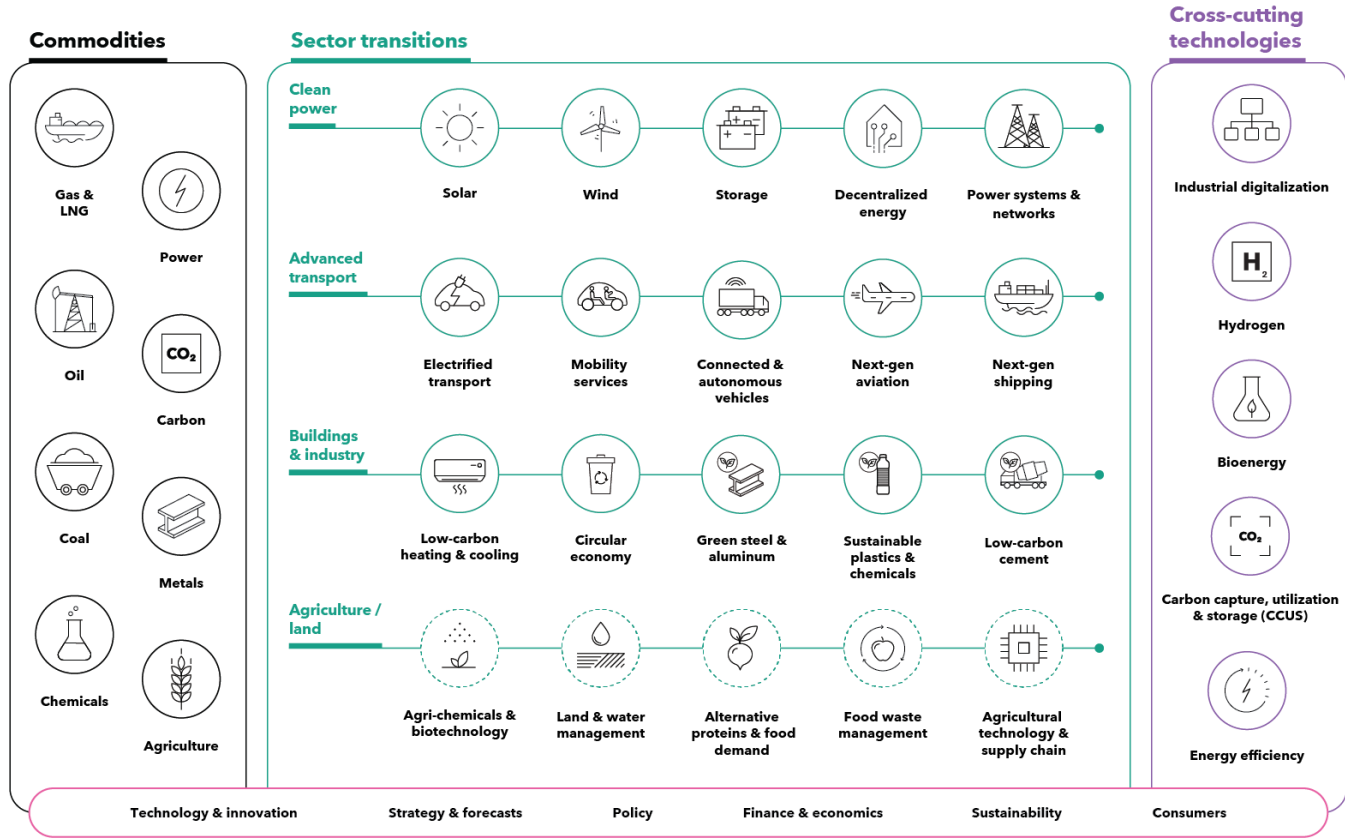
December 1, 2021



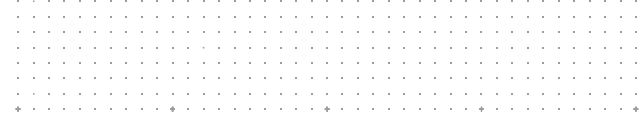
BloombergNEF

BNEF coverage

Strategies for a cleaner, more competitive future

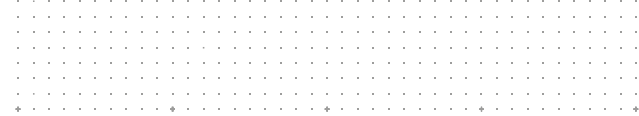


Digitalization is essential for long-term competitiveness



- The oil and gas industry faces several challenges for long-term competitiveness.
- Digitalization is a core component of oil company strategy for enabling long-term competitiveness.
- The oil and gas companies that set themselves up for innovation today are the ones that will achieve long-term competitiveness.

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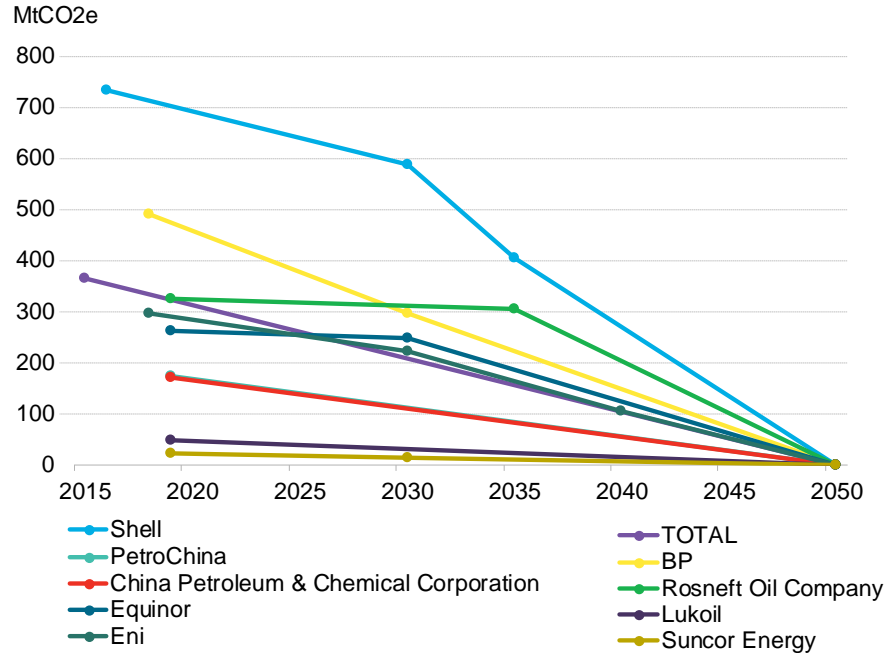
Challenges the oil & gas industry faces

1. Transparency and trust

2. Talent

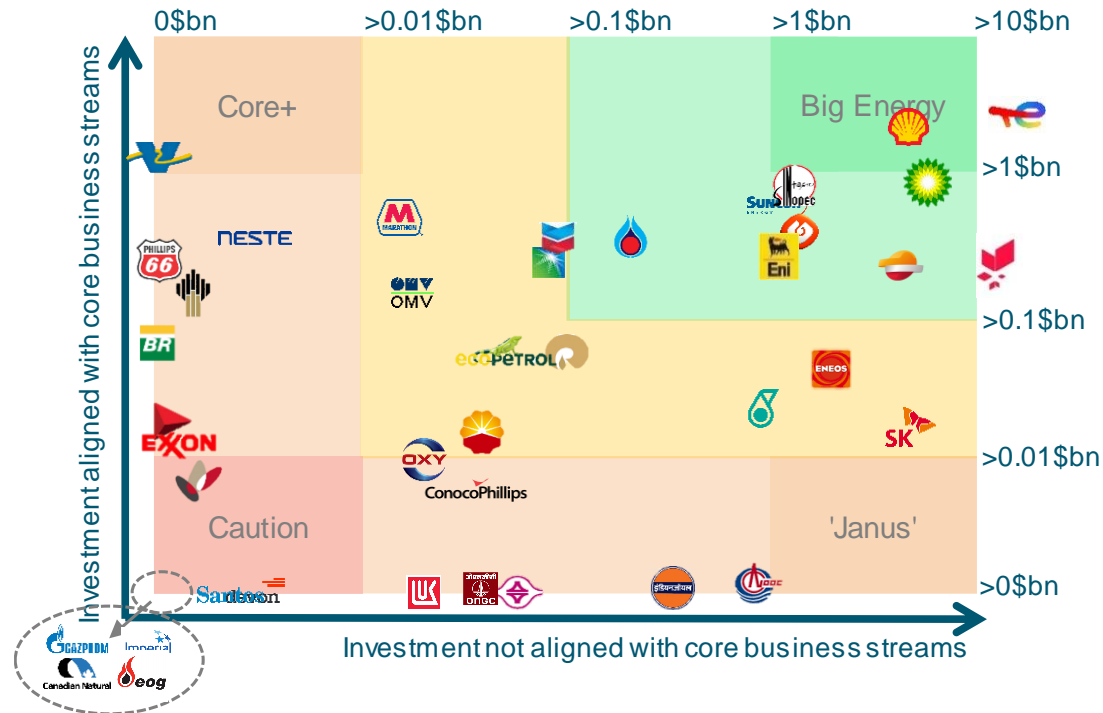
3. Decarbonization

Corporate net-zero targets for oil & gas sector



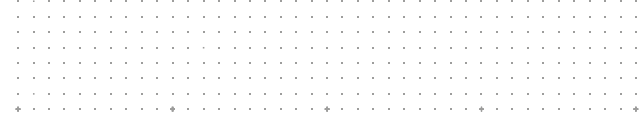
Source: BloombergNEF

Oil companies are investing in a range of low-carbon technologies



Source: BloombergNEF, company announcements

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Digitalization is addressing these challenges

Transparency and trust



Talent



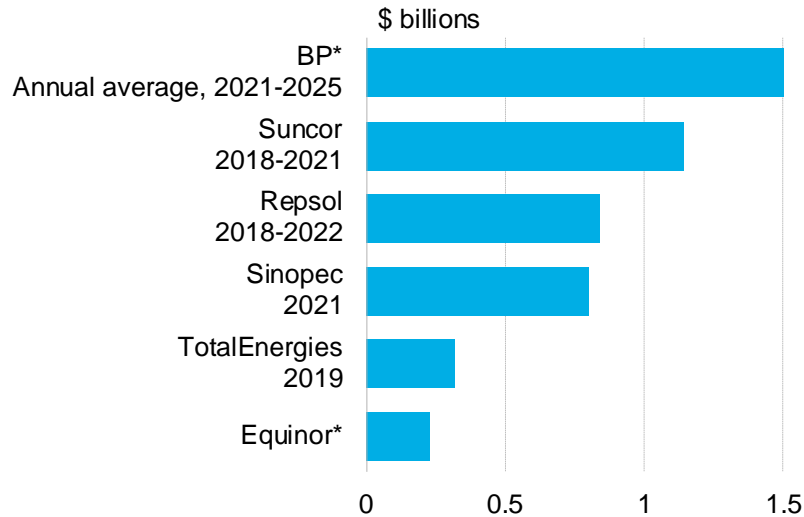
Decarbonization



Source: BloombergNEF

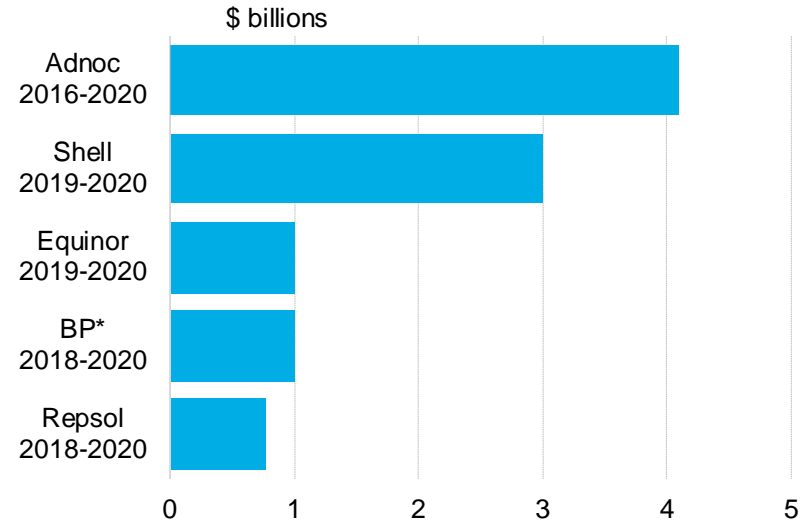
Digitalization is a key pillar of company strategy for the oil sector

Reported company investment into digital technologies



Source: BloombergNEF, company filings. Note: Currencies all converted to USD. BP figure represents the average annual spend across years indicated. Equinor is planned future investment, but years were not specified.

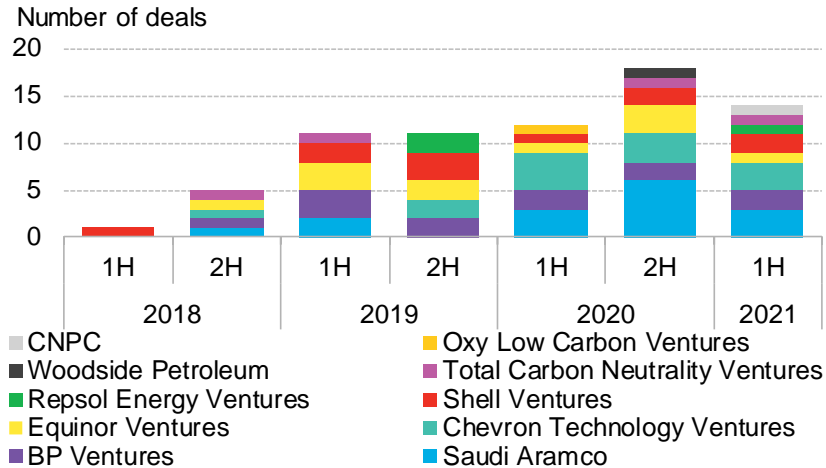
Reported realized benefits from digitalization



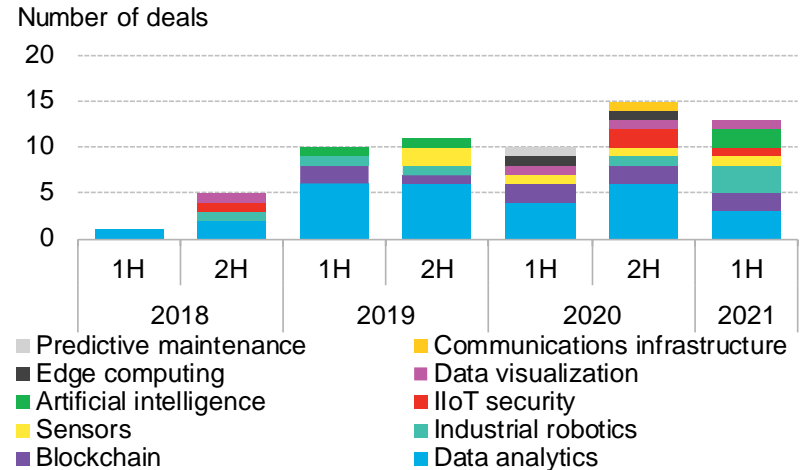
Source: BloombergNEF, company filings. Note: Currencies all converted to USD. BP figure includes only upstream benefits.

Digital technology startups account for 28% of oil corporate venture capital deals

Number of VC deals for digital technology startups in which oil companies participated, by company



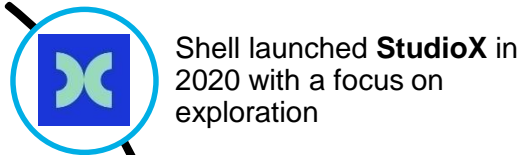
Number of VC deals for digital technology in which oil companies participated, by technology



Source: BloombergNEF, CB Insights, Pitchbook. Note: Includes publicly disclosed deals from active corporate venture arms. Saudi Aramco includes Aramco Ventures and Wa'ed Ventures. Left chart shows more deals as several funding rounds had multiple oil companies participate.

Oil and gas incubators and innovation hubs

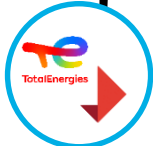
Corporate incubators



Shell launched **StudioX** in 2020 with a focus on exploration



BP Launchpad aims to create \$5 billion of business value by 2025



Launched in 2019, **Plant 4.0 Incubator** is operated by Impulse Partners on behalf of TotalEnergies



The **Equinor & Techstars Energy Accelerator** launched in 2018

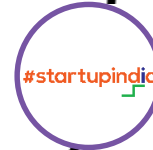
Industry partnership



The **Net Zero Technology Centre** runs the TechX Clean Energy Accelerator



The **Oil and Gas Climate Initiative (OGCI)** has a \$1 billion climate investment fund



In January 2016, the government of India launched **Startup India** to foster domestic innovation

Government support



Startad is an Abu Dhabi-based incubator for seed-stage startups in UAE

What is company digitalization strategy?

Scope of
ambition

Focused
or
Broad

Partnerships

Few
or
Many

Business
opportunity

Core business
or
External

Technology &
talent

In-house
or
Outsourced

Ambition: extent to which digitalization is a strategic priority

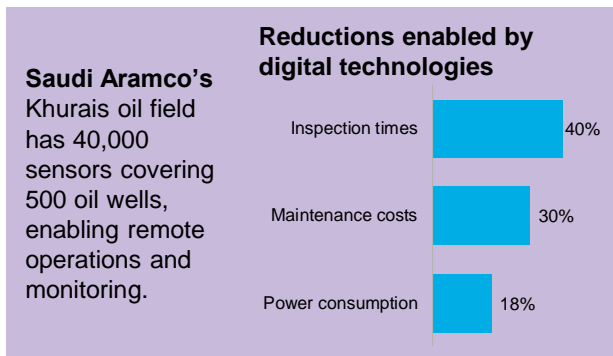


- Technology is adopted for specific-use cases
- Projects are in a pilot phase

- The company has announced targets for expected benefits from digitalization or annual investment
- Technology is adopted across the value chain

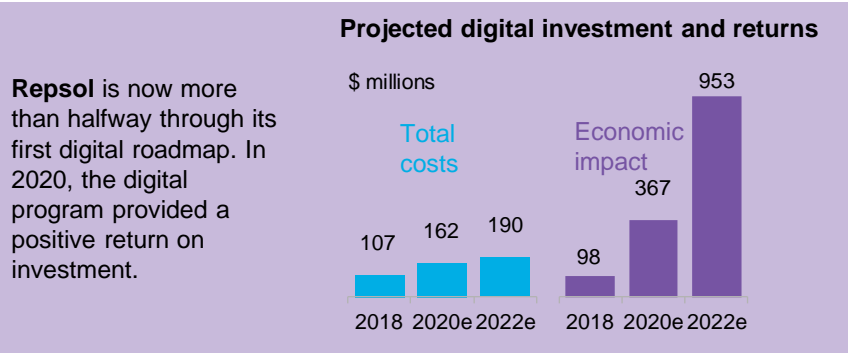
Source: BloombergNEF

The oil industry is maturing in its digital journey



Source: BloombergNEF

Companies are announcing investment into and benefits from digitalization



Source: BloombergNEF

Partnerships: the quantity and significance of partnerships



- The company has few public technology partners
- The partnerships are limited in scope

- The company has multiple public partners
- Partnerships are renewed, often with additional goals

Source: BloombergNEF

Decarbonization is increasingly paired with digitalization



Industry partnerships increasingly mention decarbonization as a goal. **BP**, **TotalEnergies**, **Repsol** and **Shell** have signed agreements for co-innovation on decarbonization products with cloud computing companies.



Source: BloombergNEF

Business opportunity: improving operations or creating new revenue streams

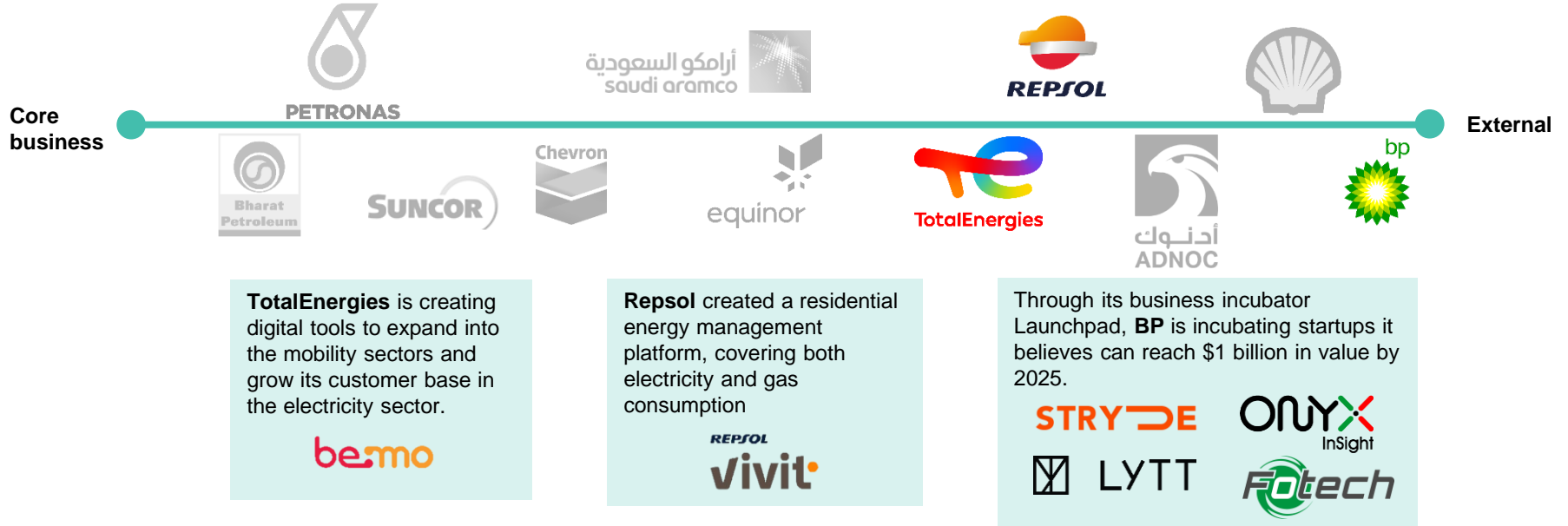


- Product development is focused on improving existing operations
- The company is not expanding into new sectors

- Product development is focused on creating customer-facing products
- The company is pursuing commercialization

Source: BloombergNEF

Companies are commercializing digital products



Source: BloombergNEF

Technology and talent: the magnitude of in-house development and associated hiring of teams



- The company is creating intellectual property
- The company has focused on strengthening its in-house team

- Digitalization occurs primarily through partner channels, instead of through internal business groups

Source: BloombergNEF

Technology and talent: companies are growing their in-house capabilities

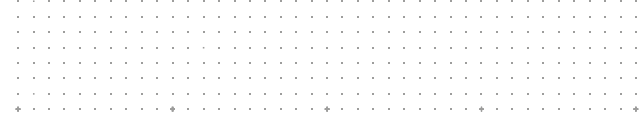


Shell has 350 data scientists and 800 'citizen data scientists.' It also has an employee community for people interested in artificial intelligence.

Saudi Aramco outsources most digital technology but is developing its in-house talent by deploying 19 digital upskilling programs to qualify 1,000 experts by 2025.

Source: BloombergNEF

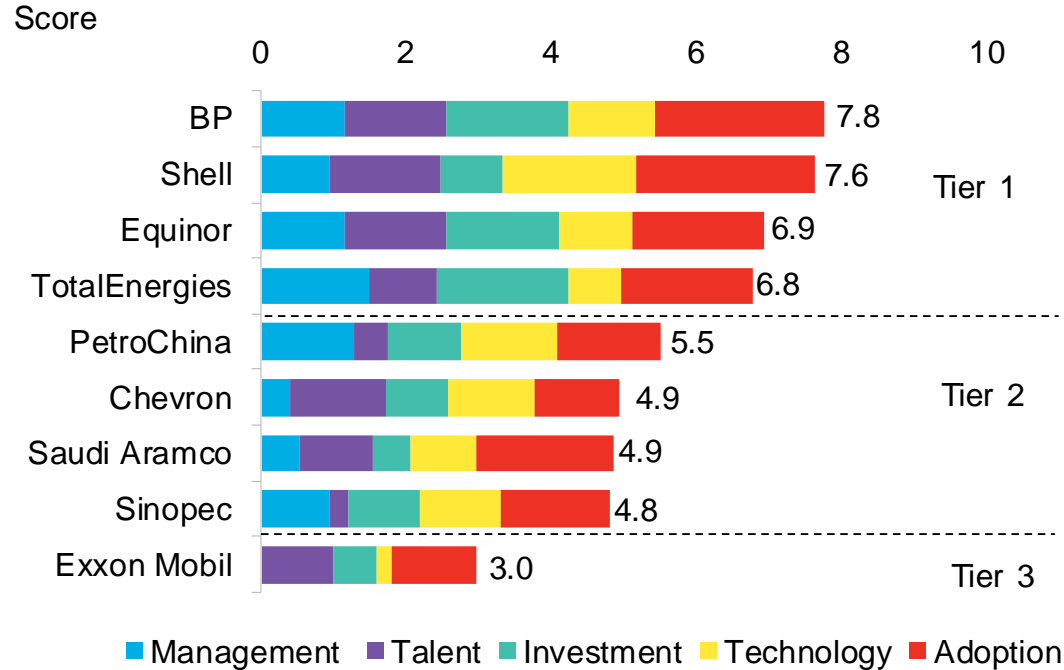
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Oil majors ranking results

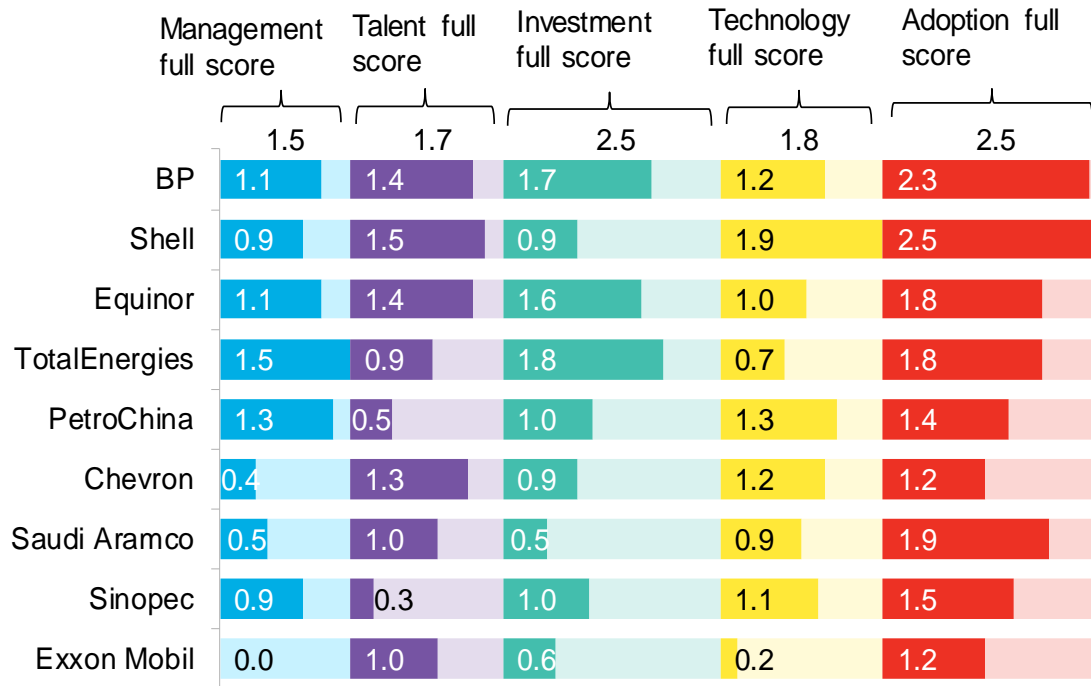
Digital Innovation Score for O&G companies



Source: BloombergNEF

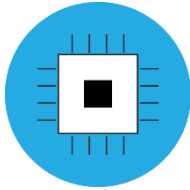
Oil majors ranking results

Digital Innovation Score breakdown by pillar metrics



Source: BloombergNEF

Technology and innovation is a differentiator now and in the long term



High levels of technology adoption



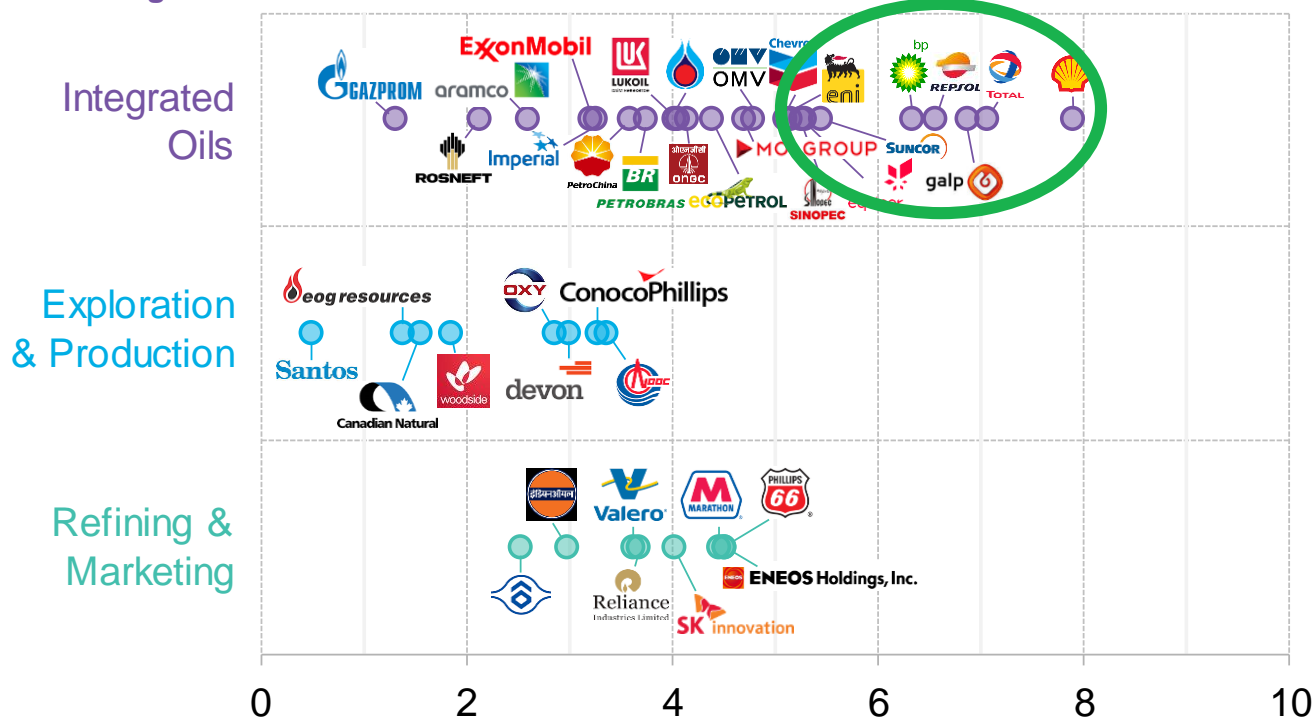
Willingness to partner



Identification of business opportunities

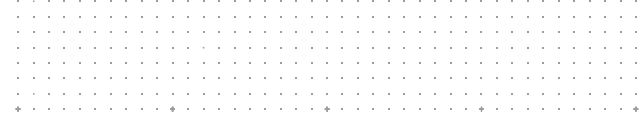
'Transition readiness' varies greatly

BloombergNEF business model transition score



Source: BloombergNEF

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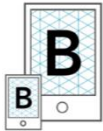
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