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# Establishing Upstream Data Landscape Inventory as A Novel Approach to Quantify Data Availability and Accessibility

**M. Shaiful Haslan, N. Mahfuz, PETRONAS**

**Abstract**

This paper introduces a novel approach on the development of a comprehensive Data Landscape Inventory by Upstream Technology, Digital & Innovation, which serves as a foundational framework to assess the availability and accessibility of Upstream data. The Data Landscape represents a holistic view of an organization's data environment. It encompasses all data entities, the relationships between them, and how data flows through various systems and departments within an organization. A Data Landscape provides crucial context by illustrating the interconnections, dependencies, and interfaces between different data entities. Building on this framework, the Data Landscape Inventory initiative is a pioneering effort to provide a comprehensive, organization-wide view of data availability and accessibility. It addresses essential questions such as "What data do we possess?" and "What data are we lacking?". These questions are key to optimizing data usage, ensuring operational excellence, and guiding strategic decision-making, embedding the principles of data as a strategic asset for a safe, resilient, low-cost, and low-carbon exploration and production (E&P) business. The paper discusses a range of methodologies and objectives, including establishing a clear line of sight on overall data inventory status for management steering and intervention, strengthening business ownership, and enabling continuous monitoring of data availability through proactive data recovery campaigns.

While similar approaches to quantifying data inventory focus on presenting the inventory through a data catalog, the novelty of our approach lies in its comprehensive integration of data taxonomy, master data, and metadata to form a cohesive Data Landscape Inventory, offering actionable insights through an interactive dashboard. The report was acknowledged by Top Management and has provided a clear line of sight for them to give steering to expand data coverage in the organization via the inclusion of new data group and continuous monitoring of data availability. This effort has become the solid foundation for establishing key metrics to measure data availability and accessibility, facilitated concerted efforts on data recovery, addressed data submission issues, and contributed to the overall improvement of data quality scores.

Additionally, a notable application of this methodology is the development of 'Data Landscape Inventory Insights,' which are instrumental in guiding business-level strategic decisions. Such insights have furnished actionable intelligence, such as the planning of future petrophysical logging activities and seismic surveys based on the interpretation of data availability and understanding of what types of data were acquired by each asset. Looking ahead, there are exciting opportunities to further enhance the Data Landscape Inventory through the integration of emerging technologies and the expansion of its scope. By continuing to innovate and refine data management practices, the organization is well-positioned to maintain its competitive advantage and drive future success in the increasingly data-driven oil and gas industry.