

Knowledge Management Roadmap in Upstream Environment

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ABSTRACT

Hydrocarbon resources exploration and development is a complex process that requires expertise from multiple disciplines to analyze data from different sources, investigate problems arising from similar assets, and finally take the right decisions. During this process, multiple generations of employees have contributed to multi- reservoir fields over multiple decades using various upstream technologies and tools, often based on personal knowledge. It is a team-based process that involves human intensive knowledge activities, where knowledge and lessons learned have to be captured, shared, and leveraged: all aspects of knowledge management (KM).

However, KM is a challenging process that involves many aspects, especially in large oil and gas corporations. Lack of an appropriate KM process can lead to wasted resources, whether time, money or expertise. In this paper we explore upstream knowledge areas and present a practical roadmap to implement KM at the organizational and project level based on a review of published literature. The roadmap has 4-phases. (Phase - I) Infrastructural evaluation leverages the existing upstream infrastructural capabilities and technologies. (Phase – II) KM system analysis, design, and development defines the KM system architecture in terms of the upstream infrastructural components (e.g. repositories, workflow) that are already in place and assesses the existing knowledge with the geosciences taxonomy analysis followed by building a working system. (Phase – III) System deployment uses a results-driven incremental methodology that can manage cultural and organizational changes. (Phase – IV) Evaluation measures the returned business values of KM. This KM roadmap consists of 10 steps that constitute all 4 phases. Each step will be described from the upstream perspective. This roadmap can help to implement a successful KM system and to establish a collaborative environment for the intellectual process of hydrocarbon resources exploration and development.