

Chapter 7

Implementations:

Discussing the Cases

ABSTRACT

The distinctive feature of petroleum businesses is its wide scope. After crude oil or gas extraction, resulting semi-products undergo dozens of transformation stages in supply chains to reach the final customer. Combination of quantity and quality multiplied by external market factors produce price fluctuations that are challenging for world economics. In this regard process management might be carried out to improve supply chain performance and assure the maximum business predictability. However, for such large-scale organizations it requires big effort in operational analysis, process enhancement and process control via information systems which successfully support traditional management in function-oriented organizational structures. This chapter explores the developed engineering matrix that embraces potential methods and tools applicable for oil and gas industry. Additionally, it reveals industrial peculiarities and delivers case studies about Iranian and Hungarian petroleum companies.

INTRODUCTION

.... current workflows and ill implemented processes are the biggest barriers to getting value from the applied digital technologies. Accenture's and Microsoft's reports (2015)

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Implementations

Oil & gas companies are classified in three main divisions: upstream, midstream and downstream encompassing a variety of economic, political, social and security risks that can much influence the business. Upstream operations explore, appraise, develop and produce of any oil and gas discovery. Midstream assets are linked to the initial processing, storage and transportation of oil and gas. Crude oil refining into products such as gasoline, kerosene and diesel is a downstream activity, as is the product distribution to and marketing by a retail network¹. These assets can be spread around the world, while the head office controls all of them at the same time.

Most academia literature focuses on basic process management concepts (process modelling, patterns, notations, integration) not mentioning the industrial peculiarities. While analyzing theoretical methods and case study based on Annual Reviews, JSTOR, Science Direct, EBSCO, ProQuest, Emerald, Wiley Online Library, Taylor Francis, SAGE Journals Online, Springer Link, Oxford Journals, Cambridge Journals Online and consulting reports presented by BCG, PWC, KPMG, Accenture and McKinsey we introduce in the first chapter upstream, downstream and midstream parts of oil & gas supply chain and the main industry problems. The second chapter explains industrial process management, its application and originality in the 21 century, new and old methods and IT systems. In the third chapter, the authors explore the case. The final chapter sums up all research and found patterns.

OIL AND GAS INDUSTRY

According to the global reports, USA and China are the biggest petroleum consumers, while the Middle East countries, Russian Federation and the USA are world leaders in production in the three parts divided industry (Hassen, Szucs, 2012). Since a product should pass a long path from production to the end client the aforementioned scope of petroleum business faces visible challenges. For example, from the organizational point of view, the firm may own several oil and gas companies and be vertically integrated with them that implies much inflexibility in operations with hierarchical structures. Moreover, in such organizations the non-process (function) minded specialists create the highest barrier to process management adoption.

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