Application of ERP Systems to Oil/Gas and Electronics Industry

Executive Summary

In today's competitive and expanding economy organizations need to improve efficiency to ensure a strong presence in their market, and that most often means coordinating large quantities of information. This is usually done through an implementation of an Enterprise Resource Planning (ERP) system. The objective of this paper is to provide a guideline for organizations to follow when deciding to implement an ERP system as well as realizing the major differences when implementing ERP in multiple industries, especially Oil/Gas and Electronics industries. The paper briefly describes ERP systems and explains how they evolved over the years until they reached the state they are today. It then highlights in general the major advantages and disadvantages of ERP systems.

The paper focuses on the two ERP systems that have the most market share, SAP and Oracle, and illustrates the features of each one, as well as recommending when each system should be used. It also explains how ERP systems are implemented in different industries by studying multiple case studies, ExxonMobile and Shell in the Oil/Gas industry, and Taiwan Semiconductor Manufacturing Company in the Electronics industry (TSMC). The studies look into how an ERP system is used in different departments like human resources, finance, supply chain management and quality control.

The paper discuses the ERP selection method and identifies the major implementation strategies such as big bang, phased rollout and parallel adoption that are used by most companies. It then compares the advantages and disadvantages of each strategy. Finally, it highlights the major differences between the implementation of an ERP system in the Oil/Gas and Electronics industries.

We recommend organizations to thoroughly analyze the risks associated with implementing an ERP system to determine if the benefits outweigh them. An organization has to be certain that a specific ERP system is suitable for the company as each ERP system has its own features and limitations. They should realize that the implementation of an ERP system is different depending on the industry as well as the characteristics of the organization.