Chapter 6
Factors Affecting the Implementation of Cloud-Based ERP Systems in the South African Gold Mining Industries

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ABSTRACT

South Africa is one of the nations in Africa that has contributed to the mining industry due to the mineral substances found within the nation. However, the current enterprise resource planning (ERP) system that is used in the mining sector dramatically impacts the way gold mines function and their effectiveness. Most of South African Gold Mines are still using old cloud-based ERP system. The aim of this chapter is to investigate the implementation of cloud-based enterprise resource planning (ERP) within the South African gold mining industries by looking at the variables that influence the move from a conventional or traditional ERP framework to a cloud-based framework. The study identified the factors affecting the effective implementation of cloud-based ERP system including cyber threat, cost of deployment, flexibility, more space storage, time and shortage of highly skilled local worker force. This chapter recommends that a hybrid strategy incorporating a cloud-based ERP system with the support services system would be beneficial.

DOI: 10.4018/979-8-3693-8357-5.ch006

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INTRODUCTION AND BACKGROUND

Many nations have recognized the artisanal and small-scale mining (ASM) industry as a result of the notable increase in its operations globally, and they are tagged as Small Medium Enterprises (SME's). ASM are often challenged with various problems that are huge when compared to large scale mining (Mkubukeli & Tengeh, 2016). The gold mining sector has been crucial to South Africa's history, in terms of macroeconomic growth and local and community levels, and continues to be so today (Phoshoko, 2021). Enterprise resource planning (ERP) and Systems, Applications and Products (SAP) systems have improved businesses' day-to-day operations in various organizations including mining sector, globally. ERP systems are essential technological enablers that boost business continuity plans and foster innovation, especially in the face of obstacles brought on by the global coronavirus outbreak (Margherita et al 2023). ERP systems, which centralize data and streamline processes are essential technological enablers that spur innovation. ERP and technological innovation applications improve decision-making and agility by enabling firms to react quickly to interruptions. These systems are necessary to establish successful business continuity strategies in light of the global coronavirus outbreak, guaranteeing those activities can continue without disruption despite unforeseen difficulties for example in the recent global coronavirus outbreak (Asgharifard, 2022; Fagbola et al., 2022).

ERP is a measured programming system designed to combine the most useful portion of an organization's business activities into a single integrated system. However, there have been challenges associated with this expansion, for the mining and small and medium-sized business sectors (Aroba & Mnguni, 2023, Aroba & Abayomi 2023). These include a high demand for raw materials, lower ore grades, stringent labor market requirements and high production standards, in addition to the need to conserve environmental resources (Sishi &Telukdarie, 2020).

With the dawn of the 21st century and the frontier of the new digital age, mining has undergone rapid change. Large firms were first to implement ERP systems, although the installation or implementation costs are falling as a result of the large business market becoming saturated. Covid-19 has also caused significant disruptions to the mining industry because core mining operations were affected by temporary lockdowns imposed by the government (Gao, 2020). Nevertheless, the South African gold mining industries exhibits no signs of necessitating the kind of features found in traditional ERP to resolve the primary issue in the mining sector, as most of the gold mining industries use outdated system that are not cloud-enabled. The traditional ERP system does not meet the requirements of their day to day strategic, operational target and it leads to data redundancy and inaccurate data. The traditional ERP system has a gradual impact and it is thus the main cause of the operational method

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