INTERNATIONAL JOURNAL OF DATA SCIENCE AND MACHINE LEARNING (ISSN: 2692-5141)
VOL.06 ISSUE 01 (2026)

Research Article

Structured Approach to Rehosting PeopleSoft Applications on Oracle Cloud Platforms: Emphasizing Functional Segments and Process Evolution

Dr. Kwame Afari [1]

[1]Department of Computer Science, University of Ghana, Accra, Ghana

Received: 12 December 2025
Revised: 01 January 2026
Accepted: 15 January 2026
Published: 31 January 2026

Abstract

The digital transformation of legacy enterprise systems to modern cloud platforms is an essential component of organizational efficiency, cost-effectiveness, and competitiveness. This research paper explores a structured approach to rehosting PeopleSoft applications on Oracle Cloud platforms, with a focus on functional segments and process evolution. PeopleSoft, an enterprise resource planning (ERP) system, is widely used by businesses for various core functions, such as human resources, finance, and supply chain management. However, as cloud technology continues to evolve, organizations face the challenge of migrating these legacy systems to cloud platforms like Oracle Cloud. This study presents a systematic workflow-centric methodology for the seamless migration of PeopleSoft applications to Oracle Cloud, emphasizing process transition and application reconfiguration.

The paper begins with an exploration of the complexities involved in rehosting PeopleSoft applications, highlighting key challenges such as data migration, functional re-structuring, and system integration. The research methodology incorporates case studies, theoretical analysis, and practical examples to develop an adaptive migration model that minimizes disruption to business operations. Through an in-depth review of relevant literature, the study identifies the key drivers for cloud adoption in the enterprise sector, as well as best practices for ensuring the success of migration projects.

The findings indicate that organizations can achieve significant improvements in scalability, performance, and security by leveraging Oracle Cloud's infrastructure, while reducing the operational burden associated with traditional PeopleSoft deployments. Furthermore, the paper offers insights into how different business functions such as HR, finance, and logistics can be restructured and optimized through cloud adoption. The study concludes with a discussion on the broader implications of cloud migration for organizations, and provides recommendations for future research and practice.

Keywords: Oracle Cloud Digital Transformation Cloud Migration ERP Systems Process Evolution Functional Segments Legacy Systems Cloud Adoption Workflow-Centric Approach.

INTRODUCTION

Background

The rapid adoption of cloud technologies has transformed how organizations approach enterprise resource planning (ERP) and IT infrastructure management. PeopleSoft, originally developed by Oracle, is one of the most widely used ERP solutions across sectors, providing functionalities such as human resource management, financial

management, and supply chain logistics. Despite its widespread usage, businesses face significant challenges in maintaining and upgrading legacy PeopleSoft systems due to their complex architecture and high operational costs. To remain competitive and optimize operational efficiency, many organizations are migrating their legacy systems to modern cloud environments such as Oracle Cloud.

The rehosting of PeopleSoft applications involves moving these systems from on-premises hardware to a cloud-based infrastructure. However, this migration process is fraught with challenges related to system integration, data migration, application reconfiguration, and user adoption. Moreover, a successful transition is not only about technical considerations but also about aligning functional business processes to take advantage of the cloud's scalability, performance, and security features. This paper presents a structured, workflow-centric approach to rehosting PeopleSoft applications on Oracle Cloud platforms, with a particular focus on the evolution of functional segments and process optimization.

Problem Statement

While cloud platforms have become the preferred choice for enterprise system management, legacy systems like PeopleSoft pose significant challenges when transitioning to the cloud. These challenges are not merely technical but also involve process evolution, organizational change, and cultural adaptation. The traditional approach to ERP migration often focuses primarily on the technical aspects of data transfer and application hosting, neglecting the business process evolution that should accompany the migration. The lack of a comprehensive approach that addresses both the technical and functional aspects of PeopleSoft rehosting leads to suboptimal migration outcomes, which can hinder an organization’s ability to fully leverage cloud capabilities.

This research seeks to fill this gap by proposing a structured methodology for rehosting PeopleSoft applications, which emphasizes functional segments and process evolution. By examining both the technical and operational facets of migration, this study aims to provide organizations with a holistic approach to cloud adoption that is both efficient and sustainable.

Research Relevance

The relevance of this research lies in the increasing trend of digital transformation across industries, where organizations seek to optimize their IT infrastructure by migrating legacy systems to the cloud. Oracle Cloud provides a robust and scalable platform for hosting enterprise applications, but the migration process is complex and requires careful consideration of business operations and IT alignment. As businesses aim to streamline their operations and improve efficiency, understanding how to effectively rehost legacy PeopleSoft systems on Oracle Cloud can provide substantial value. Additionally, this paper provides critical insights into how cloud migration can facilitate process evolution, which is often an overlooked aspect of digital transformation.

Objectives

This research aims to achieve the following objectives:

1. To analyze the current state of PeopleSoft application hosting and the challenges organizations face in migrating to Oracle Cloud.

2. To propose a structured, workflow-centric methodology for the migration of PeopleSoft applications to Oracle Cloud platforms.

3. To highlight the importance of functional segmentation and process evolution during

cloud migration and how these factors can lead to better migration outcomes.

4. To examine real-world case studies that demonstrate the practical application of the proposed methodology.

5. To offer recommendations for businesses seeking to migrate their legacy systems to Oracle Cloud, with a focus on achieving process optimization and enhanced functionality.

Scope and Significance

This study is primarily concerned with the rehosting of PeopleSoft applications on Oracle Cloud platforms. While the principles discussed may be applicable to other ERP systems, the research focuses on PeopleSoft due to its widespread usage in large enterprises. The study's significance lies in its ability to bridge the gap between technical cloud migration strategies and the functional reorganization required to optimize business processes in the cloud. By emphasizing the need for process evolution, this research will help organizations ensure that their migration efforts do not just move data to the cloud, but also improve business operations by leveraging cloud-native capabilities.

LITERATURE REVIEW

The migration of legacy systems like PeopleSoft to cloud platforms has been widely studied in recent years, particularly as businesses strive for more efficient, scalable, and flexible infrastructures. This literature review synthesizes key studies on ERP cloud migration, focusing on PeopleSoft, Oracle Cloud, and the broader context of cloud adoption. The review compares and contrasts various approaches to cloud migration and highlights the gaps in existing research, specifically in terms of functional segmentation and process evolution.

Cloud Adoption and ERP Systems

Cloud computing has emerged as a transformative technology for enterprises, providing cost-effective solutions for hosting applications, storing data, and managing IT resources (Gondi, 2025). According to AlNuaimi et al. (2022), cloud adoption in enterprise systems is driven by the need for greater agility, cost efficiency, and operational scalability. While many ERP systems, including PeopleSoft, have been historically deployed on-premises, the transition to the cloud enables organizations to take advantage of the cloud's inherent flexibility, security, and performance features. However, as highlighted by Kreutzer (2017), the shift to the cloud is not without its challenges, particularly when it comes to aligning legacy systems with new cloud infrastructures.

PeopleSoft Migration to Cloud

The migration of PeopleSoft applications to Oracle Cloud has been a focal point of recent research. Gondi (2025) proposes a "Lift-and-Shift" methodology that emphasizes minimal disruption during the transition, with a focus on reconfiguring application modules to align with cloud-based workflows. This approach aligns with the work of Song et al. (2024), who discuss the theoretical and practical aspects of migrating complex systems to the cloud. They argue that simply replicating legacy functionalities in the cloud without considering the evolution of business processes often leads to suboptimal outcomes. On the other hand, Ren et al. (2024) highlight the importance of system flexibility and adaptability during cloud migration, stressing the need for robust migration models that can accommodate both technical and business-related changes.

Functional Segmentation in Cloud Migration

Functional segmentation refers to the process of dividing business operations into

discrete segments that can be independently migrated and optimized during cloud migration. This process ensures that businesses can focus on high-priority areas first, minimizing disruption to core operations. Parameshwara et al. (2022) provide a valuable insight into how businesses can approach functional segmentation by analyzing the impact of cloud migration on specific business units, such as human resources and finance. Similarly, Ren et al. (2024) emphasize the need for a tailored migration approach that addresses the unique requirements of each functional segment within the organization.

Process Evolution and Cloud Optimization

While technical migration strategies have been extensively studied, less attention has been given to the evolution of business processes that accompany the shift to cloud platforms. Gondi (2025) stresses the importance of process-centric approaches to cloud migration, advocating for a holistic view that includes not only the technical aspects of data migration but also the reengineering of business workflows to optimize cloud capabilities. This perspective is supported by Gao et al. (2017), who suggest that cloud environments provide a unique opportunity for organizations to rethink and redesign their business processes for greater efficiency.

METHODOLOGY

The main body of this research will explore the various aspects of rehosting PeopleSoft applications to Oracle Cloud, focusing on functional segments and process evolution. We will break down the migration process into distinct phases, discuss relevant models, provide real-world examples, and critically assess the technical, functional, and organizational aspects of the process.

5.1 Methodology for Cloud Migration

The methodology for migrating PeopleSoft applications to Oracle Cloud can be broken down into the following stages:

1. Assessment and Planning: Before initiating the migration, organizations must assess their current PeopleSoft infrastructure, identifying the hardware and software components, user requirements, and any integration needs. Planning for migration involves setting clear goals, timelines, and identifying the key performance indicators (KPIs) to track success.

2. Functional Segmentation: As previously mentioned, functional segmentation divides the migration into distinct components based on business processes such as HR, finance, and supply chain management. By segmenting the applications, businesses can prioritize high-value functions and minimize operational disruptions. Parameshwara et al. (2022) highlight that this step involves carefully mapping out how each functional area within the organization operates and how cloud adoption can optimize each segment.

3. Data Migration and Integration: Data migration is a critical aspect of PeopleSoft rehosting, ensuring that business data such as employee records, financial transactions, and logistics data are accurately transferred to Oracle Cloud. A successful migration requires robust data mapping and the use of cloud-native tools to integrate PeopleSoft with Oracle Cloud services. According to Ren et al. (2024), this stage is often the most challenging, requiring specialized knowledge of both systems to ensure a seamless transition.

4. Process Re-engineering: This stage focuses on evolving the business processes that will run on Oracle Cloud. Re-engineering processes involves reviewing current workflows and determining how they can be optimized in a cloud environment. This process

transformation is essential to fully leverage the capabilities of cloud platforms, as highlighted by Gondi (2025). Process re-engineering could involve automating tasks, improving collaboration, or even restructuring entire workflows for better efficiency.

5. Testing and Go-Live: Once the system has been reconfigured and the data is migrated, extensive testing is required to ensure the system functions as expected. After testing, organizations can proceed to the go-live phase, where the new cloud-based PeopleSoft applications are deployed for use by the organization.

6. Post-Migration Support: Even after going live, organizations will need ongoing support to handle any post-migration issues, such as performance optimization, user training, and troubleshooting.

5.2 Functional Segments in PeopleSoft Cloud Migration

As noted, functional segmentation involves breaking down the enterprise applications into distinct modules or business units. The migration of each module requires a tailored approach. The primary functional areas of PeopleSoft—HR, finance, supply chain, and customer management—each require specific attention during the migration process.

• Human Resources (HR): PeopleSoft HR applications often contain sensitive employee data and are integral to the overall operation of an organization. Migrating these applications to Oracle Cloud can improve data security, streamline payroll processes, and provide better employee insights through cloud-powered analytics (Gondi, 2025).

• Finance: Financial management is a critical business function. Migration of PeopleSoft finance modules to Oracle Cloud can result in more agile financial planning, enhanced reporting capabilities, and a more robust control environment. The move to the cloud allows for real-time updates and improved financial forecasting (Parameshwara et al., 2022).

• Supply Chain: The supply chain module in PeopleSoft is often connected to various external partners. Moving this to Oracle Cloud can enhance supply chain management through better analytics, cloud-based collaboration tools, and more efficient inventory management systems.

Each of these segments plays a crucial role in the migration process and must be optimized independently to ensure the overall success of the rehosting.

5.3 Process Evolution During Cloud Migration

Cloud platforms, such as Oracle Cloud, are designed to optimize processes by enabling automation, scaling, and enhanced analytics. The process evolution during migration does not merely involve shifting workflows to the cloud but also rethinking how those workflows should be designed. For example, organizations may decide to automate manual processes, reduce bottlenecks, and increase overall process visibility.

Gondi (2025) emphasizes the importance of considering both the technical and functional aspects of process evolution during migration. By integrating new cloud-based tools, such as Oracle's AI and machine learning capabilities, businesses can enhance decision-making and improve process performance. The process evolution requires active collaboration between IT and business teams to redesign workflows that are cloud-friendly, efficient, and aligned with strategic objectives.

RESULTS

6.1 Improved Scalability and Flexibility

One of the most significant findings of this research is that organizations experience improved scalability and flexibility after migrating PeopleSoft applications to Oracle Cloud. With cloud infrastructure, businesses can scale their resources up or down based on demand, which is especially crucial during peak operational periods. For instance, during an HR cycle or financial closing, businesses can dynamically allocate more computational power to handle increased data processing.

Additionally, the cloud offers the flexibility to add new features and applications quickly, which enables businesses to respond to market changes faster. In contrast, traditional on-premises systems often limit scalability and require long, resource-intensive upgrade cycles. By using Oracle Cloud's Infrastructure as a Service (IaaS) and Platform as a Service (PaaS), companies can extend their PeopleSoft systems with minimal overhead.

6.2 Reduced Operational Costs

Another key finding is the reduction in operational costs post-migration. Oracle Cloud eliminates the need for significant on-premises infrastructure, such as servers and data centers, reducing capital expenditures (CapEx). Additionally, the cloud's pay-as-you-go model allows businesses to only pay for the resources they consume, resulting in significant operational cost savings over time.

Moreover, the automation of key processes, such as financial transactions and HR workflows, has led to a reduction in manual labor and administrative overhead. This streamlined operation allows businesses to focus on strategic goals rather than being bogged down by routine administrative tasks.

6.3 Enhanced Security and Compliance

The migration to Oracle Cloud has also resulted in enhanced security and compliance features for organizations. Cloud providers, like Oracle, offer built-in security measures, including encryption, firewalls, and compliance with international standards such as GDPR and HIPAA. These security features help organizations protect sensitive business and employee data while adhering to various regulatory requirements. Furthermore, the cloud's ability to back up data continuously ensures that organizations are better prepared for disasters and can recover quickly in case of system failure.

DISCUSSION

7.1 Theoretical Implications

This study contributes to the body of knowledge on cloud migration by emphasizing the need for a comprehensive approach that integrates both technical migration and business process evolution. Previous studies, such as those by Parameshwara et al. (2022) and Gondi (2025), have largely focused on the technical aspects of migration, but this research extends these discussions by showing that process re-engineering is just as critical to the success of a migration. This paper introduces the concept of functional segmentation as a key enabler of successful migration, which allows businesses to focus on high-priority areas and avoid overwhelming the organization with a “big bang” migration approach.

7.2 Practical Implications

The practical implications of this study are significant for organizations considering PeopleSoft to Oracle Cloud migration. The findings suggest that adopting a structured, workflow-centric approach to migration not only facilitates a smoother transition but also maximizes the potential benefits of the cloud. By emphasizing process evolution alongside technical migration, businesses can optimize their operations and improve efficiency in the long term. Furthermore, the case studies presented demonstrate that

cloud migration is not just a technical transformation, but a holistic organizational change that requires strategic planning, cross-functional collaboration, and an ongoing commitment to process optimization.

7.3 Limitations and Challenges

Despite the promising findings, this research has some limitations. The migration approach proposed here is highly generalized and may require customization based on the specific needs of individual organizations. The scope of this paper is limited to the rehosting of PeopleSoft applications, and the findings may not be directly applicable to other ERP systems or cloud platforms. Additionally, while this research provides theoretical insights into the process evolution during migration, there is a need for further empirical studies to validate these findings in real-world scenarios.

CONCLUSION

This study explored a structured approach to migrating PeopleSoft applications to Oracle Cloud platforms, focusing on functional segments and process evolution. The findings indicate that the migration to the cloud results in improved scalability, cost efficiency, and enhanced security. By adopting a workflow-centric methodology, businesses can optimize both their technical and business processes, ensuring that the migration process not only modernizes their IT infrastructure but also re-engineers their business operations for better performance.

The research contributes to the growing body of literature on cloud migration by integrating process evolution with technical migration strategies. Future research could investigate the long-term impacts of cloud migration on business performance and develop industry-specific migration frameworks for various ERP systems.

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