

Global Data Governance Strategies in Multi-ERP Environments Using Oracle Product Data Hub

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Abstract: In the current business environment that is digitally integrated and globally dispersed, there are considerable governance challenges in maintaining uniform high quality product data across the various business enterprise resource planning (ERP) systems. Multi-ERP setups usually result in data silos, inconsistencies, redundancy, and compliance risks, which have a serious negative effect on the efficiency of operations and decision-making. The paper will address global data governance approaches to the sophisticated multi-ERP environments, with a closer look at the Oracle Product Data Hub (PDH), as a centralized master data management (MDM) platform. It talks about the governance problems of multi-ERP systems and explains how the Oracle PDH can overcome these problems using data consolidation, harmonization of workflow, workflow automation, and integrative capabilities. To outline the best practices and the future trends, the study relies on the industry-specific applications, strategic frameworks, and new technological trends such as cloud ERP, AI, and automation. Finally, the paper supports the importance of centralized governance structures facilitated by Oracle PDH in data quality, regulatory, and digital agility of the enterprise-wide.

Keywords: Data Governance, Multi ERP Environments, Data Hub, Master Data Management (MDM), Data Quality, Compliance.

INTRODUCTION

In the modern and rapidly globalized economy, where the digital realm is gaining great significance, companies are now facing tremendous pressure to integrate, regulate, and control diverse and fragmented data environments. The collaboration of enterprise resource planning (ERP) systems that are running in different geographies and business units is one of the big issues in large, multinational corporations. Multi-ERP environments, where a single company operates more than one instance of ERP systems, e.g., SAP, Oracle E-Business Suite, Microsoft Dynamics, and others, tend to cause a large volume of data silo, discrepancies, duplication, and governance challenges. Through these difficulties, data governance has been found as a strategic necessity to ensure data quality, compliance, and operational efficiency.

The principles, policies, and processes that ensure that data quality, consistency, security, and accessibility are high in an organization are called data governance. When using multi-ERP environments, effective data governance is even stronger since the metadata structure, taxonomies, and operational rules of systems tend to be different across the environment. The application of proper governance practices can help organizations align master data across platforms and business units and have a single picture of the operation to make an informed choice. Oracle Product Data Hub (PDH) is among the most

popular master data management (MDM) systems that are aimed at supporting the data governance requirements of companies that have complex and multi-ERP life cycles. It acts as a central repository of product-related information, in which it achieves data synchronization, cleansing, standardization, and enrichment. The Oracle PDH enables organizations to regulate and disseminate the product information effectively, eliminating inconsistency and redundancies, which practically dominate in multi-ERP configurations (Papa, A. *et al.*, 2018; Xu, H. 2015; Shaffi, S. M., & Sidhick, J. N.).

The need for data governance is especially acute in those industries where the compliance requirements, data standardization rules, and demands of consumers are extremely high, namely, manufacturing, retail, and pharmaceuticals. Inconsistencies in product master data in such sectors may result in regulatory fines, client dissatisfaction, supply chain hiccups, and loss of competitive edge. Data governance frameworks such as those based on Oracle Product Data Hub make data stewardship, traceability, and adherence to standards, including the international standard GS1, ISO, and industry-specific laws, possible (Pemmasani, P. K., & Abd Nasaruddin, M. A. 2022; Baud-Lavigne, B. *et al.*, 2012). The aim of the article is to consider the approaches to data governance in a multi-ERP setting globally through the Oracle Product Data Hub. This will be

an analytical and descriptive discussion of the ways organizations can adopt centralized governance practices and address the system heterogeneity, enhance the quality of the data, and ensure regulatory compliance. The article highlights an analysis of the basic issues of a multi-ERP environment with data governance. Then, the strategic contribution of Oracle PDH to the solution of these challenges will be researched. Moreover, international good practices, implementation techniques, case-based situations, and upcoming trends will be given to provide an all-around view of the issue. Since the importance of data governance in multi-ERP environments has been discussed and Oracle PDH is a core enabling factor, the next section will discuss the complexity that multi-ERP environments bring and the governance problems they create.

CHALLENGES OF DATA GOVERNANCE IN MULTI-ERP ENVIRONMENTS

Multi-ERP environments are likely to have incompatible systems, which have been established at different points to support local business needs, mergers and acquisitions, or different business needs in each department or subsidiary. Such ERP implementations are likely to work in isolation where they possess varying data models, processes, and policies governing them; therefore, a divided area of data. This is because these systems do not have a built-in data structure and thus, they lack consistency in master data, particularly that of such vital components as products, customers, and suppliers (Madapusi, A., & D'Souza, D. 2005; Gali, V. K., & Rastogi, D. 2025)

Data redundancy is one of the largest governing issues of such arrangements. The product can be present in more than a single ERP system using various codes or naming systems, which causes confusion, inefficiency, and errors in the operations. Furthermore, the local data custodians are likely to have varying quality, completeness, and accuracy of data since decentralized control does not exist. Such anomalies can be quite detrimental to the reporting of the business, analytics, and compliance with regulations. In order to provide an example, product master data in different regions may vary, therefore, resulting in an incorrect classification of products, price mistakes, and the impossibility of meeting specific industry needs (Lindopp, P. 2015). Lack of standardized order of data stewardship is another

issue of great concern. Most organizations do not have a centralized master data management system in place between ERP systems, nor is there a policy. This leads to poor data records in that any update made in one ERP system is not transferred to the other, and therefore, data synchronization is lost. Moreover, such data as hand corrections and alignments are more likely to cause risks of errors, wastage of time, and the costly nature of operations (Munthe, A. *et al.*, 2025).

This is especially true in governance, where agility and scalability are a challenge. The process of integrating the new ERP systems into the further development of the data landscape is also included in the further evolution of the data landscape, as organizations are becoming more and more prominent with mergers, acquisitions, or the enlargement of the geographical coverage. This causes the geometric growth of the complexity and overhead of data, and a lack of a strategic governance framework. In addition, standard and regulated master data is also becoming essential to be able to adjust to the dynamism of the regulatory requirements like GDPR, HIPAA, or local trade regulations (Onoja, J. P. *et al.*, 2021). The other critical issues in multi-ERP setups are cybersecurity and data privacy. Having several systems communicating with one another and relaying information in a secure and conforming manner is not an easy task. The poor governance subjects the organizations to the risk of data breach, unauthorized access to the data, and failure to meet the regulations that control data protection. These dangers are further imposed when the data of the product is sensitive product data, i.e., product formulations, specifications, or trade secrets (Oluwaferanmi, A. 2025).

Besides, unsupported or unrefined legacy systems are other sources of data governance risks. These systems might not be capable of accommodating the current aspects of governance, including audit trails, role-based access, or automated validation rules. This makes organizations have to do manual controls that are prone to errors and that cannot be scaled. There is also the issue of the utilization of older systems with newer ERP systems, where there are data mapping and transformation issues that may result in the compromise of the integrity of the data (Mehta, R. 2025). The complexity of governance is also enhanced by interoperability issues. The data format, APIs, and communication protocols adopted by the different ERP systems are inaccessible and hard to have an efficient data flow and automate the administration. It also restricts

the capability of carrying out real-time governance checks or data quality checks in the enterprise. The slightest change of products, like a unit of measure or description of a product, in such an environment can easily consume resources and is likely to be full of mistakes unless a centralized tool of data governance is available (Cadersaib, B. Z. *et al.*, 2018). Once the data governance is discussed with the underlying problems that make the multi-ERP systems more complex, the second section will discuss an opportunity for master data management that can address all the aforementioned issues and implement a unified

system of governance by using Oracle Product Data Hub.

Although the section above shows that multi-ERP systems governance has conceptual problems, a table provided below classifies and compares these problems in regard to the cause of the problem, the frequent implications of the problems in the organization, and the ease of addressing them. This form of systematic summary allows the contextualizing of the governance issues that organizations encounter and focuses on the same in order to address them.

Table 1: Key Governance Challenges in Multi-ERP Environments

Challenge Category	Root Cause	Organizational Impact	Difficulty to Mitigate
Data Redundancy	Multiple ERPs storing similar entities with no synchronization	Conflicting reports, duplicate efforts, and increased cost	Medium
Inconsistent Data Standards	Lack of unified data schemas or taxonomies	Misclassification of products, poor analytics	High
Decentralized Stewardship	Fragmented ownership of data across regions/systems	Lack of accountability, slow issue resolution	Medium
Integration Limitations	Incompatible interfaces or data formats between ERPs	Manual workarounds, increased error rate	High
Compliance Gaps	Region-specific regulations are not embedded in data flows	Regulatory risks, legal exposure	High
Legacy System Constraints	Outdated ERP systems with poor governance capabilities	Limited scalability, inability to track data lineage	High

Centralizing Governance with Oracle Product Data Hub

To further expound on the issues that have been mentioned within a multi-ERP environment, the review now has the Oracle Product Data Hub (PDH), which is an effective environment that is scalable to centralize data governance in a heterogeneous environment of ERP, as shown in Figure 1. Oracle PDH is a master data management (MDM) application that can be used as a central data repository of valuable data about the products and enabling firms to have one source of truth when it comes to product information. This centralization is able to overcome the risks of fragmented data governance and improve successful decision-making, regulatory compliance, and operational efficiency (kumar Gali, V., & Vashishtha, S.).

One of the major capabilities that Oracle PDH possesses is that it is a data consolidation engine. Multi-ERP systems have a tendency to disseminate the product data across the systems and locations. Oracle PDH consolidates this information at a central location, hence eliminating duplication, inconsistencies, and ambiguities. It does in

automated de-duplication logic, data standardization processes, and matching algorithms that match records of similar products within systems. These skills are needed in the provision of a clean and consistent product master that can be relied on throughout the entire business functions (kumar Gali, V. 2025). The other strength of the Oracle PDH that enables it to be effective in a multi-ERP environment is its integration capabilities. The solution has in-built adapters, API, and connectors that enable easy integration with the most popular ERP systems, including Oracle E-Business Suite, SAP, Microsoft Dynamics, among others. It is through this integration that any changes that are made in the PDH will be able to be automatically propagated to the connected ERP systems to enable consistency and integrity of data in the organization. These levels of integration will also have in mind real-time data synchronization and data transformation rules that customize the master data to the schema requirements of each ERP system (Vu, C. 2023).

In terms of governance, different workflow management, data stewardship, and role control

tools are available in Oracle PDH. The policy of data governance can be established in such a manner that it can undergo an approval process before any data modification can be accepted into the hub. This renders it responsible, traceable, and in agreement with internal and external governance regulations. Role-based access also ensures that users have access to authorized data and can only view or update data that is authorized, and is particularly critical in areas that deal with sensitive/controlled product information (Shapoval, V. *et al.*, 2024). The other characteristic of Oracle PDH is the data enrichment and validation. The platform helps organizations to develop data quality rules, validation standards, and standard forms that must be adhered to before any data is published or shared. This assists in reducing the possibility of passing on poor-quality data to the downstream systems and also having product data that is in industry standards like ISO 8000 or GS1. In addition, Oracle PDH is multi-lingual and multi-currency as such making it the most appropriate in international organizations that operate in different markets and have different regulatory structures (Mehta, R. 2025).

Another important factor is the audit and compliance of Oracle PDH. Any alterations carried out on the data, including making changes, removing, or creating, are recorded with a time stamp and user information. These audit trails are essential in the areas of transparency and accountability, and particularly in some of the most regulated sectors such as pharmaceutical,

aerospace, or food and beverage. The reports are possible to be developed as compliance reports to demonstrate adherence to the corporate rules or the regulatory norms and, therefore, reduce the risk of legal liability and fines (Yebeles, J., & Zorrilla, M. 2019). The site is also extensively customizable. Organizations are not bound by data models, create their own attributes, and define their operationally specific taxonomies. This kind of personalization will ensure that the governance system, which has been followed as a result of Oracle PDH, is not only effective but also consistent with business reality. Furthermore, the agility of the platform allows businesses to change the plans of their information governance during their lifetime with no essential regeneration operations (Salako, A. O. *et al.*, 2024).

Besides the basic functional characteristics, Oracle PDH has data publishing and syndication. Once the product data has been approved and controlled in PDH, it can then be published to other downstream applications like ERP, CRM, e-commerce, and supply chain applications. This will give the organization homogeneous and reliable information about the products to all the stakeholders, which will enhance cooperation and operational efficiency. After the discussion of the features and benefits of Oracle PDH in the development of a centralized governance platform, the second part of the paper shall delve into the strategic frameworks and international best practices that firms can use in the implementation of effective data governance programs under Oracle PDH in a multi-ERP environment.

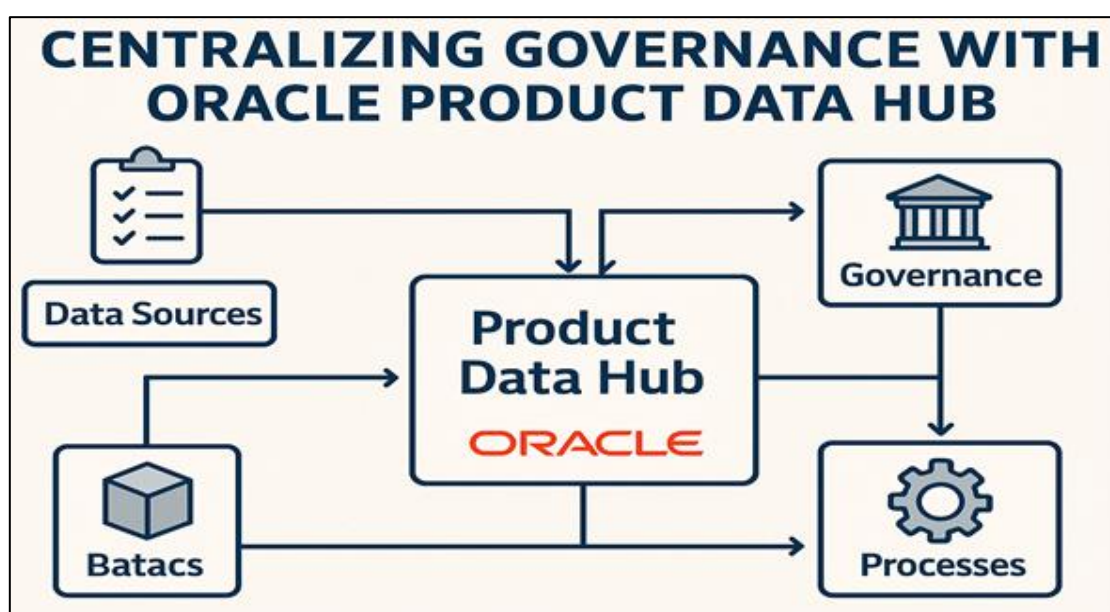


Figure 1: Flowchart illustrating centralized governance using Oracle Product Data Hub, integrating data sources, governance policies, and operational processes.

STRATEGIC FRAMEWORKS AND GLOBAL BEST PRACTICES FOR DATA GOVERNANCE WITH ORACLE PDH

In order to deploy Oracle Product Data Hub (PDH) as the basis of multi-ERP data governance, it is not enough to have a technical implementation, but a well-designed plan to integrate the governance frameworks, policies, and roles with business and regulatory requirements. One of the pillars is the lack of clear data ownership and stewardship models, and assigning responsibilities to each product category, business unit, or region to be held accountable. These roles are supported by Oracle PDH using configurable approval hierarchies and workflows on stewardship, which makes it possible to transparently control changes to data (kumar Gali, V., & Vashishtha, S.; kumar Gali, V. 2025). To supplement this is the institution of a global policy on data governance that defines data quality, naming conventions, metadata management, as well as compliance requirements. Oracle PDH implements these kinds of standards by using validation rules, audit trail, and standardization engines as a way of instilling governance in the data lifecycle. In order to stay consistent among several ERP systems, organizations are to focus on harmonizing and developing a unified golden record- one probe factor source of product data aligned across all systems to enhance the accuracy of reporting, analytics, and operational efficiency (Vu, C. 2023; Shapoval, V. *et al.*, 2024; Mehta, R. 2025).

Oracle PDH should be implemented in a gradual and incremental way. A pilot deployment is the common starting point in an organization before going global, as it is conducted in a single category or area to confirm the workflows and integration mechanisms. KPIs should be provided in every stage to measure the achievement of data quality, compliance, and efficiency (Yebenes, J., & Zorrilla, M. 2019). Metadata management is also important in facilitating transparency and data traceability. Defining data, lineage, and ownership

are managed by Oracle PDH, which gives the user contextual insight to mitigate the chances of misinterpretation (Salako, A. O. *et al.*, 2024). Constant data quality control also contributes to the sustainability, which is provided by the built-in analytics and real-time notifications in Oracle PDH. These insights can be applied by governance councils or steering committees to suggest remedial measures and monitor improvements as they are happening (kumar Gali, V., & Vashishtha, S.; Mehta, R. 2025). Simultaneously, the training and change management programs should be used to overcome user resistance and guarantee the system adoption. Informing the stakeholders on governance principles, system functionality, and accountability of data enhances organizational preparedness and data culture (Vu, C. 2023).

Global compliance and intelligent governance are critical to multinational enterprises. Oracle PDH assists with the region-based data policy (GDPR, CCPA, and LGPD) with the assistance of localization, data masking, and jurisdiction-based validation (kumar Gali, V., & Vashishtha, S.; Salako, A. O. *et al.*, 2024). These compliance mechanisms have a direct impact on the governance structure to reduce the legal risks and facilitate unrestricted cross-border functions. In addition to compliance, the level of governance can be enhanced with advanced analytics, AI integration, such that it is possible to have predictive monitoring, anomaly detection, and automated correction of data quality problems. Artificial intelligence-based responses can detect duplicates, inconsistencies, or compliance risks before they spread, and governance will become an active and smart role (Shapoval, V. *et al.*, 2024). Finally, the deployment of Oracle PDH in a multi-ERP system needs an overall realignment of people, processes, and platforms. When well-planned out, it can provide more than regulatory compliance and data consistency, but also quantifiable benefits on operational performance and enterprise-wide decision making.

Table 2: Best Practice Governance Components and Oracle PDH Enablement

Governance Component	Best Practice Description	Oracle PDH Enablement Mechanism
Data Stewardship Model	Assign accountable roles for product data management	Configurable approval workflows and role-based access
Global Data Standards	Standard naming, classification, and attribute rules	Validation rules and metadata templates
Data Quality Monitoring	Regular reviews of completeness, accuracy, and consistency	Built-in analytics, dashboards, and alerts

Regulatory Compliance	Adherence to industry standards and legal mandates	Audit logs, traceability, and jurisdiction-based logic
Integration with ERPs	Seamless bi-directional flow of master data to all systems	Prebuilt adapters, APIs, and transformation logic
Change Management Process	Structured approach to data lifecycle and versioning	Version control, change tracking, and impact analysis

INDUSTRY APPLICATIONS AND CASE-BASED SCENARIOS

Based on the theoretical strategies and best practices of data governance in multi-ERP settings with Oracle Product Data Hub (PDH), it is essential to discuss how these principles can be applied to practice in industries. This part discusses practical examples of the Oracle PDH that are used across various industries, including manufacturing, retail, healthcare, and consumer goods. The two scenarios also show how organizations can address governance issues, improve their operational performance, and maintain compliance with the help of Oracle PDH as a master data management framework.

The manufacturing industry is a sector that is usually faced by complex supply chain networks, numerous product configurations, as well as varied regional ERP implementations. A big manufacturing company that has a global presence may have SAP in its plants in Europe, Oracle E-Business Suite in North America, and JD Edwards in Asia. Such a company may have a risk of having fragmented product data, different part numbers, and incomplete material specifications in these systems without a single governing structure. Through the deployment of the Oracle PDH, the producer will be able to bring all the product information into one golden store (kumar Gali, V., & Vashishtha, S.; kumar Gali, V. 2025).

A major outcome that has been witnessed in this regard is the reduction in time-to-market of new products. Before the implementation of PDH, the setup of products in various ERP systems was another area of redundant data input, manual validations, as well as a multitude of approval cycles. Oracle PDH automated them by enabling centralized product data creation and enrichment that is subsequently syndicated to all ERP instances through real-time integration. The governance processes make sure that operational systems receive only validated and complete information, which removes redundancy and minimizes the chances of releasing products with improper specifications (Vu, C. 2023). The retail and consumer goods business is often associated with high product turnover, frequent promotions,

and channels of distribution. Ensuring uniformity of product description on web platforms, point of sale systems, and supplier databases will be a big governance burden. An international retailer may have various ERPs in its e-commerce unit, brick-and-mortar shops, and procurement units. Oracle PDH offers a unified platform for the management of product hierarchies, pricing structures, product attributes, and digital assets like images and descriptions. PDH can be used by retailers to generate a centralized database that supplies correct information to online storefronts, internalized systems, and third-party marketplaces (Shapoval, V. *et al.*, 2024; Mehta, R. 2025).

As an example, during promotional periods like Black Friday or during a festive season, the data deployment speed and accuracy become important. Under PDH, marketing departments are also able to code product bundles, discount packages, and inventory tags in advance and, at the same time, validate and pass the information to all parties involved, including warehouse managers and online retailers. Additionally, the support of localization offered by Oracle PDH helps to translate and adapt product information to the local markets to improve customer experience and regulatory compliance in every geography (Yebeles, J., & Zorrilla, M. 2019). The data governance in the healthcare and pharmaceutical industry is also complicated by strict regulatory demands (FDA, EMA, and other national organizations). Information on products in this regard comprises elaborate compositions, lot tracking, usage directions, expiry dates, and clinical specifications. With a multi-ERP environment, it is essential to ensure that such important information is always consistent, traceable, and compatible across systems. These attributes are governed by Oracle PDH, which offers effective data validation, audit logs, and workflow approvals before data is transferred to manufacturing or clinical trial systems (kumar Gali, V. 2025; Salako, A. O. *et al.*, 2024).

In the case of a pharmaceutical organization using both SAP and Oracle EBS, PDH would be an ideal place to have master product development and regulatory data. This will make certain that similar

versions of product specifications are accessed by clinical research teams, manufacturing units, and regulatory affairs departments. Further, change tracking and version control systems of PDH allow complete traceability that is essential in the process of audits or inspections. The system also has standard classifications (e.g., ATC, UNII codes) to ensure that data in ERP and lab systems are aligned to industry standards by controlling vocabularies (kumar Gali, V., & Vashishtha, S.; Vu, C. 2023). The complexity of the parts, configurations, and supply chains in the automotive industry presents a special form of governance challenges to manufacturers. This industry is characterized by multi-ERP environments that may involve Oracle to manage inventory, SAP to handle procurement, and specific systems to support CAD and PLM. Oracle PDH will combine with these various systems in order to be the master of parts master data, vehicle configurations, and supplier specifications. The hub ensures that automotive companies can make coordinated changes through systems whenever a new component is introduced or an old component is changed, whenever there is a change in design or changes in suppliers (Shapoval, V. *et al.*, 2024; Mehta, R. 2025).

The main advantages that have been achieved are fewer product recalls, enhanced coordination of suppliers, and increased regulatory reporting. PDH Oracles provide lifecycle management through connecting the product information with the related records, product version histories, and approval records. This integrative perspective can help engineering and compliance departments to make sure that only the parts that are proven and approved are used in the production process. It also facilitates quicker impact analysis in case of defects being found or the compliance standards changing. All these instances show how Oracle PDH can be versatile and transformative in all industries featuring complex multi-ERP environments. Whatever the industry, companies always record the enhancement of data accuracy, time-to-market, compliance adherence, and cross-functional collaboration following the implementation of centralized governance in Oracle PDH.

As these practical examples can help us see that Oracle PDH is effective in promoting the excellence of global governance, the following section shifts to the evolving trends and future outlook of global data governance, especially in their intersection with other technologies,

including AI, machine learning, and cloud-native ERP systems.

EMERGING TRENDS AND FUTURE DIRECTIONS IN DATA GOVERNANCE

The sphere of data governance in the multi-ERP environment is in its new phase as the complexity of the data ecosystems increases, and the rapid usage of cloud technologies takes place. New technologies Artificial Intelligence (AI), machine learning (ML), robotic process automation (RPA), and blockchain, are transforming the manner in which organizations handle and administer master data. Being a central governance node, Oracle Product Data Hub (PDH) is evolving with these movements and, therefore, is well-equipped to address the needs of a contemporary enterprise that is interested in future-proofing its governance operations.

The Oracle Cloud ERP, SAP S/4HANA Cloud, and Microsoft Dynamics 365 are Hybrid ERP systems offered by the company to replace or supplement traditional on-premise ERP systems. Such systems are larger, the infrastructure is cheaper, and takes less time to deploy. However, when the organizations require having various cloud ERPs within the business units or different geographies, the need to have a single governance platform becomes more critical. Oracle PDH, which is based on hybrid deployment, is the mod point of managing master data on on-premise and cloud ERP (kumar Gali, V., & Vashishtha, S.; kumar Gali, V. 2025). Such a change to cloud-native systems enables being more agile with data governance. Oracle PDH also integrates with Oracle Cloud Infrastructure (OCI), and that is why it can be easily integrated with other Oracle cloud applications, such as the Oracle Integration Cloud, Oracle Data Integrator, and Oracle Analytics Cloud. It is a real-time data transit, scalable, and performance cloud-native stack that is also vital to the present governance activities. In addition, the move to the cloud is automatic in updating, and organizations can always be kept abreast of the new features of governance and enhanced security (Vu, C. 2023; Shapoval, V. *et al.*, 2024).

The data governance is also getting transformative roles played by artificial intelligence and machine learning. The ML algorithms may be applied in the Oracle PDH to suggest the data standardization automatically, identify the data inconsistencies, and prescribe the enrichment actions. As a case in point, the system is able to tell that one product in

various SKUs in various ERP systems has the same characteristics and can be combined in one master record. These capabilities aid in reducing the level of manual labor that the data stewards need to put in and optimize governance efficiency (Mehta, R. 2025; Yebeles, J., & Zorrilla, M. 2019). In line with this, predictive analytics is emerging as one of the major supporting elements of proactive governance. Oracle PDH will have the capability to anticipate potential data quality issues before they can cause adverse operations based on the trends of historical information and machine learning models. The case in point would be where some product category has a current tendency of incomplete product attribute entries, or improper pricing facts will be forecasted by predictive models in advance to the governing teams, where corrective measures would be taken even before the issue arises. This shift in governance to predictive governance is a radical step towards the way organizations manage their data resources (Shapoval, V. *et al.*, 2024; Salako, A. O. *et al.*, 2024)

Blockchain technology is another possible field of data governance. The pharmaceutical industry, food and beverage industry, and the aerospace industry are some of the sectors that can use blockchain to attain data immutability, provenance, and traceability. Based on the fact that Oracle PDH is neutral to blockchain, it can be combined with the Oracle Blockchain platform to increase data purity and meet compliance requirements. As an indicator, the information about a product that was accepted and published through PDH can be listed on a blockchain registry, so that any further changes can be fully auditable and immutable. Some of the areas that this integration is specifically helpful include product recalls, regulatory audits, and supply chain verification, to name a few (Vu, C. 2023; Mehta, R. 2025). The other is also the emergent RPA in the governance operations. Firms are deploying bots to automate processes in data management, such as data checking, approvals, data enrichment, and error corrections. These bots can be used to communicate with Oracle PDH APIs and perform rule-based activities, reduce human intervention to a minimum, and improve the processing speed. RPA is a supplement to the PDH workflow infrastructure that enables the implementation of the high volume and low value tasks that were previously manually implemented to be implemented without difficulties (kumar Gali, V.,

& Vashishtha, S.; Yebeles, J., & Zorrilla, M. 2019).

With the increasing pressure on how organizations manage and use data, there is a need to see governance frameworks not only be compliant but also moral in how they process product and customer information. This may be facilitated with the help of Oracle PDH, which offers privacy options, data masking, and audit trails that ensure accountable and secure data. These features comply with the global data privacy regulations, and they help organizations in maintaining the trust of the majority since they have to handle huge data ecosystems (kumar Gali, V. 2025; Salako, A. O. *et al.*, 2024). In terms of user experience, the modern governance solutions are focusing on an intuitive interface, built-in analytics, and collaboration of workflow. Oracle PDH is busy extending its application to include Oracle Fusion applications, allowing users to have role-based dashboards, real-time KPI, and guided governance processes. This end-user architecture helps to democratize the process of data governance since it enhances the involvement of more stakeholders in the data stewardship processes, such as marketing, finance, compliance, as well as operations (Shapoval, V. *et al.*, 2024; Mehta, R. 2025).

The future of the PDH development plan of Oracle includes the increased incorporation of AI services, enhanced low-code/no-code structures of configuration, and industry-specific governance templates. The inventions will revolutionize governance and make it more dynamic, expandable, and smart. As the repositories of data continue to grow and their intricacies increase, the new powers of Oracle PDH are bound to make it the core of an enterprise that will be running in a multi-ERP environment. As the present data governance framework is yet to converge with the change of the disruptive technology and the business paradigm, it is clear that organizations should be proactive in their approach. By combining Oracle Product Data Hub with artificial intelligence, as well as cloud computing, automation, companies will have the opportunity to build powerful and future-proof governance systems to ensure the integrity of data, compliance with regulations, and competitiveness.

CONCLUSION

The requirements of organizations in the globalization era, marked by computerization and constantly shifting regulatory landscapes, have

continued to put pressure on organizations to address the complexity of data among diverse business systems. Multi-ERP systems have numerous barriers on the path to the achievement of consistency, accuracy as well and controlled product information in multi-ERP environments that are characteristic of large-scale, multinational businesses. Despite the fact that such environments offer controlled areas locally and systems specialization, they can lead to data silos and redundancies and inconsistent records, and put their compliance at risk. Good data governance has thus become a strategic need and not as an IT alternative. As demonstrated in this paper, Oracle Product Data Hub (PDH) is an extremely useful tool in terms of central data management in multi-ERP systems. The Oracle PDH can provide organizations with the means that they need to consolidate, standardize, and manage the product data of the enterprise level through its robust capabilities to close the integration of both legacy and cloud ERP systems. Its functions, which include data consolidation, workflow approvals, data enrichment, and synchronization, would form a single source of truth, which would make the vital product information consistent and accessible in all the ERP systems.

The strategic frameworks and best practices have also been identified in the implementation of data governance through Oracle PDH, as noted in the paper. These include, delegation of specific data stewardship, formulation of global governance policies, gradual implementations, and the use of metadata and data quality indicators. Oracle PDH not only supports such efforts but also assists in streamlining them through automation, compliance tests, as well as customizable governance models to meet different industry needs. Industry case-based scenarios demonstrate how organizations across manufacturing, retail, healthcare, and automotive sectors have achieved measurable improvements in operational efficiency, compliance, and data quality through the implementation of Oracle PDH. It may be a decrease in time-to-market, regulatory conformity, or the capacity to synchronize multi-channel, but in any case, Oracle PDH has become a base of the data governance structure of the present day. As to the future, the Oracle PDH future is directed at the creation of the current technological trends, such as artificial intelligence and machine learning, automation of the processes with robots and blockchain, and the utilization of a cloud-native ERP framework. These inventions are altering the

appearance of data governance from a reactive compliance-focused activity to a smart, proactive, and business-elevating strategy. Oracle PDH constitutes an important component of an enterprise data strategy in the coming years, with increased application of AI, increased cloud support, and the capacity to facilitate predictive governance. In conclusion, considering that organizations are yet to sort out the complexity of managing numerous ERP frameworks, there is an immediate requirement to implement a scalable, centralized, and smart data governance framework. Oracle Product Data Hub offers a validated solution for the victory in data management in a multi-ERP environment with its thoroughly developed functionality and its strategic alignment with the contemporary enterprise demands. An end-to-end approach, with a robust technology presence, and founded on the world's best practices, can enable organizations to obtain the full potential of their data resources, enhance their agility, compliance, and a competitive edge in a data-driven economy.

REFERENCES

1. Papa, A., Leino, T., Rutkowski, A., & Aix, P. R. "Master Data Management in Global Enterprise." (2018).
2. Xu, H. "What are the most important factors for accounting information quality and their impact on ais data quality outcomes?." *Journal of Data and Information Quality (JDIQ)* 5.4 (2015): 1-22.
3. Shaffi, S. M., & Sidhick, J. N. "Modernizing Data Governance: A Strategic Shift in Enterprise Data Management."
4. Pemmasani, P. K., & Abd Nasaruddin, M. A. "Strengthening Public Sector Data Governance: Risk Management Strategies for Government Organizations." *International Journal of Modern Computing* 5.1 (2022): 108-118.
5. Baud-Lavigne, B., Agard, B., & Penz, B. "Mutual impacts of product standardization and supply chain design." *International Journal of Production Economics* 135.1 (2012): 50-60.
6. Madapusi, A., & D'Souza, D. "Aligning ERP systems with international strategies." *Information systems management* 22.1 (2005).
7. Gali, V. K., & Rastogi, D. "Optimizing Master Data Management in Oracle Cloud ERP Best Practices and Case Studies." (2025).

8. Lindopp, P. "The Impact of Company Size on Factors Influencing ERP Adoption in Ireland." *Diss. Dublin, National College of Ireland*, (2015).
9. Munthe, A., Mahulae, C., & Muda, I. "Risk-Based Information System Audit: A Literature Review and Its Implications in Accounting." *Indonesia Economic Journal* 1.2 (2025): 1416-1424.
10. Onoja, J. P., Hamza, O., Collins, A., Chibunna, U. B., Eweja, A., & Daraojimba, A. I. "Digital transformation and data governance: Strategies for regulatory compliance and secure AI-driven business operations." *J. Front. Multidiscip. Res* 2.1 (2021): 43-55.
11. Oluwaferanmi, A. "The Evolution of Cloud-Based ERP Systems and Their Financial Impacts on Supply Chain Transparency, Automated Payments, and Cross-Enterprise Financial Reconciliation in US Manufacturing Ecosystems." (2025).
12. Mehta, R. "Strategic Integration of ERP and Manufacturing Information Systems: Overcoming Implementation Challenges and Driving digital transformation." *International journal of data science and machine learning* 5.01 (2025): 215-228.
13. Cadessaib, B. Z., Sta, H. B., & Rahimbux, B. A. G. "Making an Interoperability approach between ERP and Big Data context." *2018 Sixth International Conference on Enterprise Systems (ES)*. IEEE, (2018).
14. kumar Gali, V., & Vashishtha, S. "Data Governance and Security in Oracle Cloud Ensuring Data Integrity Across ERP Systems."
15. kumar Gali, V. "Master Data Migration and Integration Strategies for Global Oracle Cloud ERP Deployments." (2025).
16. Vu, C. "ERP Implementation into the e-commerce platform." (2023).
17. Shapoval, V., Zubyk, L., Zubyk, Y., Kurchenko, O., & Kozachok, V. "Automation of data management processes in cloud storage." *Cybersecurity Providing in Information and Telecommunication Systems* 2024 3654 (2024): 410-418.
18. Mehta, R. "Beyond Accuracy: Rethinking Data Quality as a Strategic Pillar in ERP Implementation." *International journal of data science and machine learning* 5.01 (2025): 400-409.
19. Yebenes, J., & Zorrilla, M. "Towards a data governance framework for third generation platforms." *Procedia Computer Science* 151 (2019): 614-621.
20. Salako, A. O., Fabuyi, J. A., Aideyan, N. T., Selesi-Aina, O., Dapo-Oyewole, D. L., & Olaniyi, O. O. "Advancing information governance in AI-driven cloud ecosystem: Strategies for enhancing data security and meeting regulatory compliance." *Asian Journal of Research in Computer Science* 17.12 (2024): 66-88.

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