

End-to-End Robotic Process Automation in Oracle On-Premise Environments: UiPath RPA for ERP, EBS, PeopleSoft, and HCM in Construction Materials Manufacturing

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Abstract

Oracle's on-premise applications ERP, EBS, PeopleSoft and HCM are fundamental in the business operations of the construction materials manufacturing industry and they are relied upon heavily. Nevertheless, manual data entry, fractional work process, and operational ineffectiveness are impediments that produce errors, delays, and higher costs. RPA is an emerging transformative technology that has complemented bridging the automation gaps without requiring you to modify your legacy Oracle systems. The paper describes how UiPath RPA is integrated with Oracle on-premises applications that automate repetitive tasks, reduce human intervention while improving production efficiency. We illustrate such improvements in the processing time, accuracy, and compliance through real world use case including automated sales order processing, invoice management, payroll operations etc. Additionally, we outline some of the challenges of integration, security risks, or maintenance alongside some solutions that can help across the key challenges of the successful RPA implementation. The findings confirm RPA's capability to shape the future of enterprise processes in the construction materials manufacturing sector and open the door to increased intelligent automation in the Oracle environment.

Keywords: Robotic Process Automation (RPA), UiPath, Oracle On-Premise, ERP Automation, Oracle EBS, PeopleSoft HCM, Construction Materials Manufacturing, Business Process Optimization, Intelligent Automation, Digital Transformation

I. INTRODUCTION

The construction materials manufacturing sector operates numerous business operations through complex resource planning systems called ERP to handle all essential functions from sales to procurement and human resources management. These functions obtain their support through Oracle's wide deployment of on-premise applications that include ERP and EBS (Enterprise Business Suite) as well as PeopleSoft HCM and HCM Cloud. The conventional systems demand similar operations multiple times causing workers to enter data manually which creates operational slowdowns as well as human mistakes that affect operational performance and increase overall costs [1].



Robotics Process Automation (RPA) offers a no-impact integration solution which operates within current Oracle systems while removing staff participation and enhancing operational effectiveness. The paper examines how UiPath RPA helps automate Oracle on-premise environments in construction materials manufacturing which includes relevant use cases and challenges alongside prospective opportunities.

A. Industry Background: The Role of Oracle On-Premise Systems

Enterprise solutions in the construction materials manufacturing industry need to deliver strong scalability and process multiple business operations encompassing inventory control and order processing and procurement management and payroll operations and regulatory reporting. The on-premise system offerings from Oracle deliver a complete set of solutions that covers industry requirements.

The Enterprise Resource Planning system of Oracle ERP provides full support for all procedural tasks starting from order management through procurement to invoicing and financial accounting. Oracle EBS (Enterprise Business Suite serves as a system to control financial operations and supply chain operations and reporting tasks.

PeopleSoft HCM: Handles payroll, workforce scheduling, and employee records.



Fig. 1. Conceptual Model [2]

Businesses operate with incomplete effectiveness and increased expenses because their comprehensive systems face difficulties with manual operations and time-hiding processes and split organizational procedures.

B. Challenges of Manual Processes in Oracle Applications

1) Inefficient Data Entry and Workflow Delays: The Oracle system maintains a system that requires employees to manually enter data into sales orders and invoicing activities and payroll procedures and procurement approval stages. The large volume of repeated operations by staff members causes substantial delays in process times and waiting periods between crucial decisions.

2) *High Risk of Human Errors:* Human-led data processing generates financial problems from invoicing mistakes and mistakes in order entry and payroll computations because it increases human error rates. The wrong strategies for procurement and inventory management result in delayed material supply which disrupts production programs.



3) Fragmented Business Processes: ERP and EBS and PeopleSoft applications developed by Oracle exist as separate programs that create difficulties in sustaining departmental data consistency. Organizations experience costly duplicate work and mismatched measurement systems when integration is not straightforward which causes reduced understanding of business performance.

C. The Need for Intelligent Automation (Why UiPath RPA?)

Robotic Process Automation (RPA) functions as a sophisticated technology which duplicates human behaviors to handle software applications for automated rule-based repetitive processes. The RPA solution from UiPath enables secure automation of Oracle on-premise environments through scalable interfaces which do not require systems' architecture modification.

1) Seamless Integration with Oracle Applications: The interaction of UiPath bots with Oracle ERP, EBS, and PeopleSoft functions through UI automation as well as API integrations and database queries enables integration. The UiPath Oracle Adapter provides an interface that lets systems conduct straightforward data processing tasks with Oracle applications.

2) Non-Invasive Automation Without Modifying Legacy Systems: The demanding nature of Oracle onpremise deployments makes modification difficult because of historical system limitations. UiPath RPA functions above current systems thus negating the requirement for expensive changes or system relocations.

3) Enhanced Accuracy and Efficiency: The automation of manual processes through UiPath software reduces human mistakes and accelerates work rates and fulfills regulatory standards. The real-time data synchronization function of RPA eliminates inconsistency between different Oracle modules.

II. TECHNOLOGY STACK & ARCHITECTURE

UiPath RPA demands an advanced technology framework and carefully planned architectural structure to achieve successful integration with Oracle's existing corporate applications running onpremises. The order processing and procurement together with financial transactions and human resource management functions of construction materials manufacturing depend on Oracle's on-premise systems including ERP, EBS and PeopleSoft HCM. The systems suffer from excessive manpower input through manual entries and poorly connected workflows that produce operational inefficiency and high costs. The non-invasive automation features of UiPath RPA enable it to interface with systems through a combination of interface automation techniques and database management and application programming interface technology. The first part illustrates the selected Oracle on-premise systems that fall under automation scope as well as explains the main components from UiPath RPA used for integration and shows an overview of the automation sequence.

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Fig. 2. Intelligent Data Mapping Architecture [3]

A. Oracle On-Premise Systems in Scope

On premises Oracle applications are considered as foundation of enterprise operations and comprise of tools to help enterprise manage their financial, procurement, HR & sales operations. In particular, Oracle ERP including version 12.2 and onward, is involved in the handling of order management, their procurement workflows and invoicing processes. This makes for an easy process in sales order processing, vendor payments and purchase approvals. Similarly, Oracle EBS, or Enterprise Business Suite, gives a total arrangement for making a report about the finance, manage the supply chain logistics and business intelligence. However, manual interventions in reports generation, tracking of expenses and optimizing the supply chain delays and inefficiencies, organizations use Oracle EBS. PeopleSoft HCM is another critical Oracle system in scope that is used for payroll processing, workforce scheduling and employee record management. However, the burden of manual data entry on payroll adjustments, benefit management and compliance tracking is a heavy administrative burden for this system that is integral to human resource operations. RPA allows you to automate these processes, all the way across all Oracle on-premise applications, which greatly improve the efficiency and data accuracy.

B. UiPath RPA Integration

UiPath gives a well-defined framework which is, UiPath Orchestrator, UiPath Studio, and UiPath Oracle Adapter to effectively automate Oracle applications. RPA belongs tightly to Robotic Process Automation where UiPath Orchestrator is a centralized platform and used as the management place for managing RPA bots. This cloud or on-premise tools is scalable to handle multiple automation workflows across several Oracle applications with security policies such as role-based access control (RBAC) and audit logging [4].

The primary place automation workflows are designed and tested is in UiPath Studio. The low code platform allows developers to build bots which can interact through UI-based automation and data extraction with Oracle ERP, EBS and PeopleSoft HCM interfaces. That's because UiPath Studio relies on optical character recognition (OCR) and intelligent screen recognition to ensure that the bots can decipher data from Oracle's graphical user interface so that you don't have to do the data entry yourself

The overarching point about the integration of UiPath and Oracle is yet another adds on to UiPath being able to communicate directly with Oracle using Oracle's Api using UiPath Oracle Adapter. This adapter helps with front end automation free bots for getting, modifying & storing transactional data. Integrating UiPath bots in place of human resources to directly access Oracle's backend system increases the speed and reliability of processing of data. Combining on the same item these 3 items



create a solution that is scalable and secure and that's fully integrated with the on-premise systems in Oracle.

C. Automation Workflow Overview

In UiPath RPA, the usage of Oracle applications is through three-layer automation, UI based automation, direct database query and API based integration. The first level of automation is UI based and allows bots to act in Oracle's graphical user interface. In particular, this method is helpful for legacy Oracle applications that have confined API support in that bots can mouse around screens, input data into the system and retrieve data from it just like a human user would. However, as UI changes in Oracle applications now and then may disrupt automation workflows, this method is best combined with more resilient automation techniques.

In the second layer of automation, database queries are used to inter directly with Oracle's underlying data structure. UiPath bots can do data retrieval, data validation and data update into the Oracle ERP, Oracle EBS and PeopleSoft HCM databases and eliminates manual data entry. Organisations can speed up the processing of the high-volume transactions that are handled by Oracle's SQL based databases and need not involve the use of UI driven automation.

The third and the most efficient layer of automation is done via the Api-based integration using the UiPath Oracle adapter. Through API integration, bots are able to communicate directly with Oracle's applications through REST and SOAP APIs to have the data synchronized real time across various enterprise systems. Because of its security and minimal human involvement needed, the API based automation is particularly great for automating workflows with reaching secure data such as financial reporting and procurement approval. Using all three layers of automation, UiPath RPA offers a complete and reliable way to automate Oracle on premise applications.



Fig. 3.Workflow of Intelligent Data Migration Strategies Integrating Automation [3]

D. Security and Compliance Considerations in On-Premise Automation

Among other things, security and compliance are essential attributes for automating Oracle on premise environments specially where these environments own much of the company's most sensitive



financial, HR, and operational data. Integrity of enterprise data is ensured by several security controls, e.g. role-based access control (RBAC), audit logs, and data encryption, available on UiPath RPA. Finally, UiPath Orchestrator helps us in maintaining the permissions of bot, so that all automation is in line with organizational security policies. With UiPath, you can ensure no one will update the wrong data, and they will follow financial and HR regulations having each bot assigned a specific role and access level [5].

On top of that, UiPath is able to keep extensive audit logs of every bot action, which can be used by organizations to have transparent, verifiable record of automated transactions. These logs are vital to guarantee compliance with industry policies similar to Sarbanes Oxley (SOX), General Data Protection Regulation (GDPR), and ISO 27001. Additionally, UiPath has used such advanced encryption protocols as AES-256 encryption to encrypt sensitive data flowing between bots and Oracle systems. Additionally, UiPath provides built in support for data masking and tokenization to prevent unauthorized access to any confidential data at any time during the automation process.

Business Continuity and Disaster recovery is another important thing about security with RPA automate. Failover mechanisms and redundant bot deployments are part of the UiPath's automation framework to make sure that the business process is uninterrupted. When a system fails, UiPath bots are capable of restarting processes and completing lost transactions, so downtime is minimized and there is less impact on the operational stability.

An overview of UiPath RPA for Oracle's on-premise applications is done in summary, as a secure, efficient scalable Automation Platform. With the usage of a mix of UI based automation, database queries and API integrations, organizations can keep their business process optimized with a security and compliance standard. The next section will cover use cases of how UiPath RPA can be utilized for more efficient sales order processing, invoice handling, payroll automation and procurement workflow in Oracle ERP EBS and PeopleSoft HCM.

III. KEY USE CASES & IMPLEMENTATION

UiPath RPA implemented on Oracle on premise environment can aid the organizations in construction material manufacturing to automate their core processes. RPA removes the need for manual data entry, reduces human intervention and process standardization by eliminating the disparities across different departments such as the sales, finance, human resources, procurement, and inventory management. This section discusses four key use cases of UiPath RPA against Oracle ERP, EBS, and PeopleSoft HCM.

A. Automated Sales Order Processing (Oracle ERP + UiPath RPA with particulars as below)

1) Challenge: Sales order processing is one of the critical business functions for the business in construction materials Manufacturing and needs to have accurate and timely data input in Oracle ERP. Previously, customer orders are normally sent to Oracle's Order Management module through email, fax or phone calls and the employees need to manually input these orders. However, this is manual approach to these functions and it is error prone, always late, and inefficient and will result in wrong orders, delays in shipment, and unhappy customers. Manual entry further increases labor costs, and an organization is constrained as to how many orders can processed in its order processing operation [6].



2) Solution: UiPath RPA helps to automate the sales order processing by extracting order details from incoming emails, PDF attachments as well as fax documents that are accompanied by Optical Character Recognition (OCR) and Natural Language Processing (NLP). It analyzes key fields like customer name, product details, order quantity, pricing, delivery location and validates it with the record present in Oracle ERP. After validation, the bot also automatically goes in and enters the sales order in Oracle ERP and confirms that it has been updated in the system with a message to the sales team and to the customer.

3) Benefits: Sales order processing resulting in reductions of a 90 percent in order processing time, greatly reducing the need for manual work and achieving far higher order accuracy. Processing of orders in real time ensures minimal time between the order and its production and delivery. Furthermore, UiPath bots allow any order related data to be logged systematically that can then be tracked, audited, and in general, complied with.

B. Invoice Processing & Payment Automation (Oracle EBS + UiPath RPA)

1) Challenge: The construction materials manufacturing business is a highly invoiced type of business where a lot of invoices need to be processed from companies that supply and vend such materials. Usually, the finance teams verify the invoice details manually by checking the purchase orders from Oracle EBS (Accounts Payable Module) and data entry into Oracle EBS (Accounts Payable Module) for payment processing. There is a manual approach which is time consuming, error accident prone, and inefficient causing delayed payments, risk with compliance and possible penalties for late payments. In addition, the invoices do not match the purchase orders; these discrepancies should be validated, too, and the process is slowed down even more.

2) Solution: By using the AI powered OCR technology, UiPath RPA can automate invoice processing and grab any type of data present in the supplier invoice (either as PDF, email attachments or scanned documents). The bot extracts invoice data and compare them with existing purchase orders in Oracle EBS, if there are any discrepancies. The bot checks whether the invoice details are aligned with all the information that is, if so, it itself enters all the invoice details in Oracle EBS that can be processed further. In case of discrepancies, the bot triggers an automated exception handling workflow which informs finance personnels that they have to verify. Furthermore, UiPath bots can tie up with the banking systems to do the payment initiation and reconciliation.

3) Benefits: It enables automation that greatly reduces the threat of manual errors and processes only validated invoices. Invoice processing time is reduced by 60-70% for finance department, as a result supplier payments speed up and there is an improvement in supplier relations. Real time logging and tracking of invoice transactions help to increase the compliance with the financial regulations and audit requirements.

C. Payroll & HR Automation (PeopleSoft HCM + UiPath RPA)

1) Challenge: In such environment as construction materials manufacturing, optimizing payroll and HR operations is complicated because of varying pay structures, overtime computation and admin of benefits. To accomplish that, the HR teams need to manually collect timesheets, approve of overtime requests, and update payroll records and labour laws are in compliance with them. Unfavourable outcomes from delayed processing of payroll adjustments or benefit updates can have employees dissatisfied; payroll errors; and compliance risk.



2) Solution: UiPath RPA extracts employee work hours, overtime requests and benefits adjustments from internal HR systems for payroll and HR data processing and updates PeopleSoft HCM accordingly. It validates payroll inputs, deducts payroll as well as updates the salary components in Oracle's Payroll Management module. RPA also makes it possible for automated employee record updates, where changes in employment status, tax details and the status of the benefits enrolment are accurately updated.

3) Benefits: RPA by UiPath automates the payroll and HR operations to speed up the payroll processing, cutting down the payroll cycle time from days to hours. This freed up HR workload which enables teams to divert their attention into something strategic such as employee engagement and compliance efforts rather than the admin work.Prachett.org In addition, it leads to improvement of the accuracy of payroll calculations, which reduces the risks of incorrect deductions and tax compliance issues, and the disputes with the employees.

D. Procurement & Inventory Management (Oracle ERP + UiPath RPA)

1) Challenge: The procurement and inventory management in the construction material industry entails the processing of material requisition, approval, purchase order (PO) and stock level update. These processes can get delayed and material shortages may occur on less production time, slow down the production and then supply chain becomes inefficient. However, inventory levels are manually confirmed by procurement teams and the procurement team generates purchase requisitions and requests for approvals, resulting in bottlenecks for materials replenishment.



Fig. 4. Procurement & Inventory Management (ERP + UiPath RPA) [4]

2) Solution: With UiPath RPA, you can automate process of purchase requisition creation, PO approvals and stock updates in Oracle ERP. Once the threshold of the available stock is reached, the bot then automatically generates a purchase requisition, checks the slack vendor pricing, and finally sends the request for approval. The bot is linked with the approval workflows so that it can interact with them and generate automated alerts for quick decision making by the procurement manager. After the PO is approved, UiPath bots go to update the stock in the Oracle ERP and then notify the warehouse managers for further actions.

3) Benefits: Procurement and inventory management are automated which allows for the tracking of stock levels in real time with a real time alert, materials are not restocked until the materials have sufficiently run out. This closes the approval processes down, reduces the procurement cycle times, and improves the order fulfillment times. In addition, any transactions made by UiPath bots are logged and off the table for audit and UiPath bots also prevent unauthorized purchases.



IV. CHALLENGES & SOLUTIONS

UiPath RPA opportunity integration with Oracle' on premise application is huge but with many challenges that organizations need to address on the way to making the automation a smooth yet sustainable journey. RPA implementation should face hurdles such as security concerns with legacy Oracle systems and changing Oracle user interfaces that are hard to automate for the RPA bot. Yet there are ways for businesses to overcome these obstacles and succeed in the long term, a good way is by using structured automation strategies, best practices and technological solutions. In this section, there are three major challenges involved in doing the implementation of RPA on Oracle on premise environment and this is addressed with appropriate solutions to these challenges.

A. Integration Challenges

1) Issue: One of the most painful challenges in automating Oracle ERP, EBS HCM, and PeopleSoft HCM is that they are extremely limited in terms of API support. Unlike modern cloud-based enterprise apps, many of Oracle's on-premise Apps are in fact not designed to support seamless third-party automation integrations in the first place. This limitation prevents direct data exchange between UiPath RPA bots and Oracle applications and therefore it is hard to get or update records programmatically. When data entry or workarounds are necessary, either because of problems with the available technology or lack of proper integration mechanisms, automation does not maximally achieve its potential efficiency.

2) Solution: To overcome the API limits of Oracle's on-premise applications, UiPath comes up with the UiPath Oracle Adapter which allows direct connection to Oracle databases and transactional modules. Secondly, this adapter enables RPA focused bots to access both data stored in Oracle's application databases, using SQL queries and stored procedures, and not require UI based automation where feasible. Although in situations where API accessibility is not available, UiPath RPA is able to utilize UI versions of automation, for instance, screen scraping, keystroke inputs, and object identification, like a human user would, to interact with Oracle's user interface and combining API based integration with UI based automation as a second approach will give organizations a more resilient, and efficient automation framework. Additionally, hybrid automation strategies can be used in which bots would dynamically switch between API based actions and UI actions based on availability of the system and minimize errors and all aspects of performance.

B. Security & Compliance Risks

1) Issue: With the integration of RPA within organizations' Oracle ERP, EBS, and PeopleSoft HCM workflows there is a very substantial threat in terms of security and compliance. Sensitive financial transactions, payroll data, procurement records and information about employees are handled by RPA bots and that increases the possibility of unauthorized access, data breaches, and compliance violences. If bots are not properly regulated, they might accidentally carry out unauthorized transactions or change critical records or publish confidential information which can result in regulatory fines or damaging the reputation.

2) Solution: In order to mitigate these risks, orders must adopt stringent governance and security policies for their UiPath RPA deployment. The Role-Based Access Control (RBAC) ensures that Oracle's functions can be accessed by only authorized bots and users. By setting up RBAC in UiPath Orchestrator, administrators can restrict bot permissions by the job role and enforce least privilege



principle so that changes made to the critical Oracle data cannot be accomplished by anyone other than intended. UiPath Orchestrator records the detailed audit logs of each bot action, data modification and system interaction, as well as RBAC. These logs provide a cheat and verifiable background of mechanized exchanges, making certain that all RPA exercises coordinate with industry consistency guidelines similar to Sarbanes Oxley (SOX), General Data Protection Regulation (GDPR), and ISO 27001.

Additionally, organizations can get their bot compliance checks done by connecting UiPath RPA to security monitoring tools. These are continuous tools that validate bot activities against set policies and raises suspicious transactions or policy violated to human review. Implementing RBAC, enforcing audit logs and logging, and ensuring compliance monitoring are the ways that businesses can effectively and securely leverage automation on Oracle's applications by enforcing RBAC, audit logs and logging.

C. Maintenance & Scaling Issues

1) Issue: It is a common challenge while implementing RPA for Oracle on premises application because oracle's software frequently gets updated and UI changes extensively. Since most of the UiPath bots use UI Automates techniques to work with Oracle applications, slight changes in the screen layout, field labels, UI elements, or even arrangement can cause the RPA flows to go haywire. If a new system update or something like a UI enhancement from Oracle is released, then RPA bots could fail to find the element, misinterpret the screen data or break down with something unexpected and disrupt the business. Furthermore, automated bots (bots) in different Oracle applications are complex when scaling any organization's automation initiative and requires a robust version control, version management and automation lifecycle management for maintenance.

2) Solution: This means that resilient Automation strategies that increase the bot's adaptability and reducing the maintenance overhead should be adopted to prevent failure of RPA on the impact of UI changes, so the organization does not have to start the bot again from scratch. Based on my experience, using the dynamic selectors in UiPath Studio is one of the most effective ways to replace hardcoded element references. Relative positioning, attribute-based identification and anchor elements are used in dynamic selectors to make the location and interaction with UI elements possible even after an Oracle UI update. Application of this technique greatly reduces the bot failure rate and improves upon the automation reliability.

V. FUTURE ROADMAP

And, as Robotic Process Automation becomes increasingly sophisticated and its presence grows within the corporate technology field, UiPath RPA leveraging Oracle on-premise applications is expected to extend further to enhance scalability, intelligence and usability. Future roadmap of RPA in Oracle Environments includes AI driven Automation, Cloud Migration Strategies, intelligent document processing, no code RPA etc, which all will help enterprise to become more productive and increase enterprise-wide automation adoption.

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Fig. 5. Smart Industry [4]

A. Advanced ERP Bot Management with UiPath AI Centre

While the use of AI and Machine Learning is slowly gaining popularity, [8] how Oracle RPA automation will be running alongside the use of Artificial Intelligence (AI) and Machine Learning (ML) through UiPath AI Centre in the future. Rule based automation is going to end and the AI powered bots will grow beyond the automation and will start predicting, adapting and optimizing the workflow on a dynamic basis. That's why ERP bots can use predictive analytics to forecast sales demand, inventory needs and financial trends so that businesses have time to automate decision making, as well as tasks. Finally, there will be self healing automation wherein the AI based bots can take care of errors or workflow bottlenecks in ERP implemented in Oracle and thereby fixes these issues without need for human intervention.

B. Hybrid Cloud Adoption: Migrating Oracle On-Premise to Oracle Cloud ERP with RPA

RPA will be critical in helping enterprises migrate from on-premise Oracle to Oracle Cloud ERP as it gradually shifts away from its on-premise systems. Data extraction, validation and migration between legacy Oracle on-premise environment and cloud-based ERP systems will be automated using UiPath bots. Moreover, RPA would support hybrid processes where bots play with Oracle apps that are both on premises and in the cloud and maintain the continuity in the gradual switch over to Oracle Cloud Enterprise ERP.

C. Intelligent Document Processing (IDP) for Finance & HR Workflows

As pending Intelligent Document Processing (IDP) advances, UiPath RPA will assist in end-to-end automation of finance and HR department document heavy processes [8]. In Oracle EBS Accounts Payable, AI driven OCR will be used by finance teams to extract data from invoices, contracts, receipts and more to reduce manual document processing. Actions performed by people in the PeopleSoft HCM are automated as well via IDP powered bots that can process resumes, employee record, and compliance documents automatically. This reduces administrative overtime even further.

D. Increased No-Code RPA Capabilities for Business Users

The rise of no code automation platforms is definitely a major shift for the future of RPA; the rise of bringing business users that have little or no programming expertise to build and deploy automation are great for eyes; great for users and great for the business [5]. With its low code/no code RPA tools, UiPath will enable finance team, HR personnel and procurement managers to build their own Oracle ERP, EBS and PeopleSoft automation work flows using drag and drop and pre made templates. Oracle



driven business process will current toward faster deployment, greater adoption and higher agility through democratization of RPA.

VI. CONCLUSION

UiPath RPA with Oracle on-premise applications integration in the construction materials manufacturing industry offers a revolutionary solution of automating the key business processes. RPA eliminates manual data entry, reduces human involvement and creates process efficiency with sales order processing, invoice automation, payroll management, and procurement workflows improved. The demonstration has been done with real world implementations that Oracle ERP, EBS and Peoplesoft HCM using UiPath bots successfully interacting with them to have faster processing times with higher accuracy and compliance. In addition to this, RPA is also an invasive automation framework that allows organizations to initiate the modernization of operations without changing their legacy Oracle systems. While the benefits are significant, there certainly are some challenges including limited API support, security risk, and maintenance concern, all of which must be well considered to see a successful and scalable automation deployment.

Future of RPA in Oracle environment will be influenced by AI committed automation, hybrid cloud adoption, intelligent document processing and no code RPA. AI and Machine Learning will connect self-learning bots that can use its own predictive, adapting and optimizing ability in workflows which are dynamically improving. Additionally, when organizations are moving from on-premise Oracle applications to Oracle Cloud ERP, UiPath RPA will be an integral part of that migration of data and integrated workflow between on-premise and on cloud tools. Additionally, the use of no code automation tools will also make RPA adoption more democratized, without requiring technical expertise the ability to create and deploy automation workflows will be available to business users. Alas, by the time enterprises arrive at the 'intelligent automation' stage, UiPath RPA will continue to be a lynchpin to the path of digital transformation, with scalable, secure, and cost-effective automation solutions within Oracle driven business environments.

VII. REFERENCES

- [1] J. P. R. Oliveira, "Oracle Cloud ERP RPA Implementation in the Procurement Area (Master's thesis," *Universidade NOVA de Lisboa (Portugal)*)., 2024.
- [2] P. R. J. &. O. T. Ruivo, "Defining a theoretical model to assess transition from on-premises to Software-as-a-Service.," *Procedia Computer Science*, 239, 612-617., 2024.
- [3] S. Shekhar, "An in-depth analysis of intelligent data migration strategies from oracle relational databases to hadoop ecosystems: Opportunities and challenges.," *International Journal of Applied Machine Learning and Computational Intelligence*, *10*(2),, 2020.
- [4] Y. B. B. R. K. S. N. R. W. & E. I. Ratchatawetchakul, "Integrating Robotic Process Automation (RPA) with Hybrid Cloud Enterprise Resource Planning (ERP)," In 2024 5th Technology Innovation Management and Engineering Science International Conference (TIMES-iCON) (pp. 1-4). IEEE., 2024.
- [5] S. A. I. C. C. A. P. A. A. A. I. I. A. B. & A. O. O. Oladosu, "Advancing cloud networking security models: Conceptualizing a unified framework for hybrid cloud and on-premises integrations.," *Magna Scientia Advanced Research and Reviews.*, 2021.



- [6] O. Attakora Duah, " The assessment of technology and company readiness for robotic process automation (RPA) implementation in retail (Doctoral dissertation, Technische Hochschule Ingolstadt).," 2023.
- [7] Y. Li, "Upgrading Traditional Automation With Robotic Process Automation In Digital Transformation.," 2024.
- [8] P. J. Khasoane, "Robotics process automation: customer contact centre email management utilising uipath (Doctoral dissertation, Stellenbosch: Stellenbosch University).," 2022.
- [9] J. S. T. P. &. B. B. Talukdar, "Robotic process automation: a path to intelligent healthcare. In Artificial Intelligence in Healthcare Industry (pp. 159-168). Singapore: Springer Nature Singapore.," 2023.
- [10] G. Masili, "No-code development platforms: breaking the boundaries between IT and business experts.," *International Journal of Economic Behavior (IJEB)*, 13(1), 33-49., 2023.