VIEW POINT

DIGITAL TRANSFORMATION OF END USER COMPUTING FOR BANKS USING LOW-CODE FACTORY MODEL

Abstract

End-user computing (EUC) is the term for last-mile operational accounting computations that a bank or financial institution carries out before entries are made in ledgers or journals. These computations vary based on the ongoing regulations and business policies of organizations. Typically, these computations are carried out using applications such as Microsoft Excel and Microsoft Access using formulae or macros that are easy to change and deploy. However, driving the computations in EUC applications manually makes it error-prone, vulnerable to operational risks, and non-compliant with audits and other financial controls.

The need to eliminate risk is of utmost importance in any financial organization. Hence, organizations are striving to automate EUCs to ensure traceability, governance, and risk mitigation. By leveraging dynamic case management and Infosys Fluid Digital Process Automation, we provide a scalable and intuitive framework to ensure seamless transformation of EUCs to achieve regulatory compliance. This paper describes the methodology used to achieve end-to-end EUC automation.

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Usage of End-User Computing in Financial Services

An end-user computing (EUC) application is created and maintained by business users and embedded within business unit processes. These applications are not developed and managed in an environment that employs robust IT controls. In financial services, EUCs have been the primary solution for performing various operations where end users manage, update, and manipulate data at their disposal. Unlike SAP, Oracle, and other ERP applications that facilitate automated flow of transactions and data, EUCs allow business end users to quickly deploy solutions in response to shifting market and economic conditions. This results in unmanaged processes with lack of traceability leading to risks especially during audits.

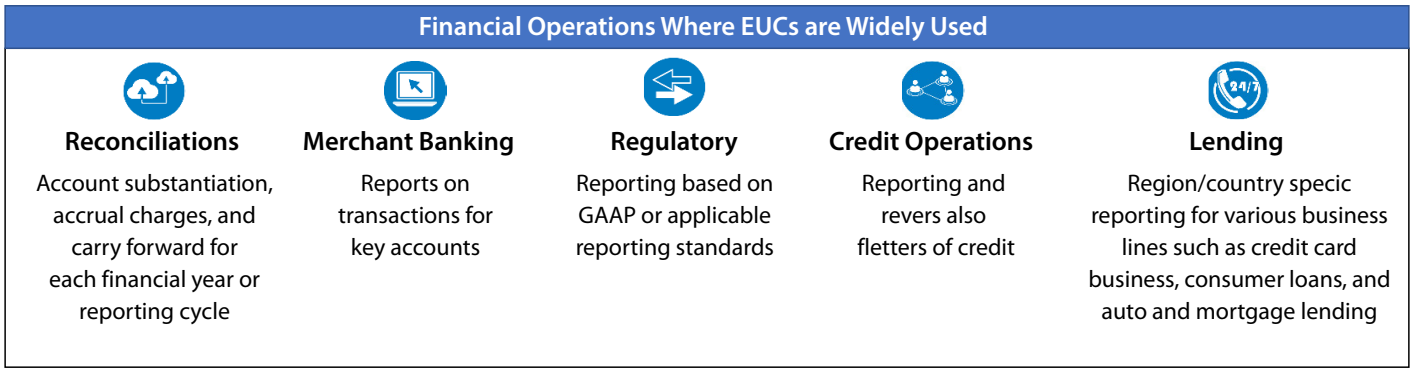

Figure 1 – End-user computing usage in financial operation

These features make EUCs important to business structures, although they expose businesses to various operational risks. As EUCs are maintained and used by end users, they are not monitored and controlled extensively. For any financial application, robust controls are crucial to protect the business from operational risks. This is difficult to implement in EUCs

Challenges Posed by End-User Computing

Large financial institutions depend on thousands of EUC applications, and more than a trillion dollars' worth of computations are carried out using EUCs each year. Dependance on manual maintenance and update of EUCs makes the task quite challenging with the consequence that efficiency is compromised.

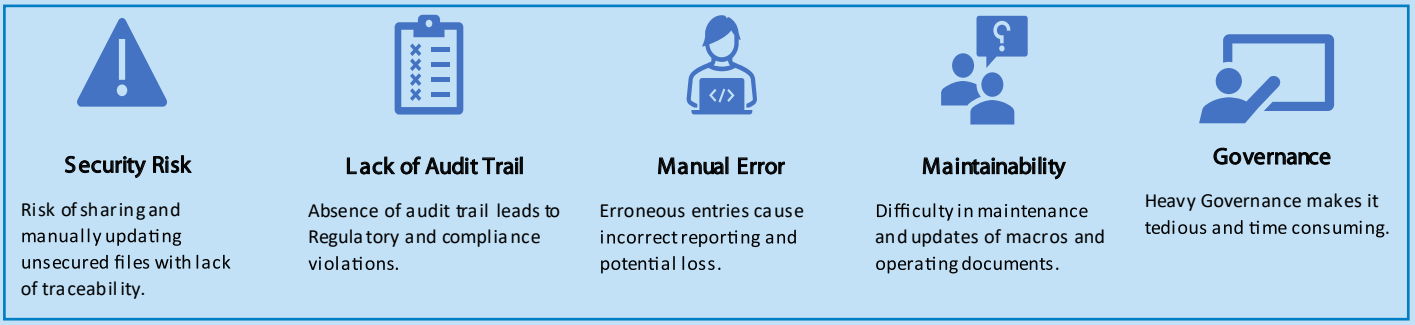

Figure 2 – Risks associated with EUCs

Some of the risks associated with EUCs include:

- Microsoft Excel files with large volumes of data are prone to crashing with the risk of data loss and the outcome highly prone to errors
- EUC applications that use Microsoft Excel macros cannot be comprehended or updated by average end users. Updates done on Microsoft Excel files are not standardized making the entire process highly dependent on individual users who are subject matter experts
- There is lack of transparency and traceability because of which auditability and governance are at stake
- Policy management, enforcement, and reporting present an additional challenge for compliance teams because disparate teams of end users maintain EUCs

As per a report published in JD Supra in November 2020, the US Office of the Comptroller of the Currency (OCC) levied a $400 million fine on an American-based bank for issues found in the institution's risk management and regulatory reporting practices, where EUCs featured heavily.

To avoid the risk of penalty resulting from non-compliance with regulatory bodies, there is an urgent need to remediate all banking operations that are primarily dependent on EUCs.

Low-Code Factory Model Using Infosys Digital Process Automation

The EUC remediation process is an example of 'wide application', meaning this involves high volume low complexity applications that must be remediated with quick turnaround. Since the complexity of the applications is relatively low, we recommend a factory model that looks at groups of computations and remediates all EUCs within a single platform rather than treating each application as a separate one.

Leveraging digital fluidity, Infosys Digital Process Automation (DPA) practice provides a conceptual framework called the low-code factory approach for EUC remediation by harnessing the capabilities of low-code platforms. Infosys Fluid Digital Process Automation, our core differentiator, combines synergistic digital capabilities to deliver perceptive experiences and build responsive business value chains to deliver solution-driven automated results with rapid increase in accuracy and speed. This maximizes the benefits of eliminating manual processes with straight-through processing, rule-based decisioning, and hyper-automating manual interventions.

The low-code factory approach is analogous to a large manufacturing plant building huge consignments of products on an assembly line. In this approach, instead of initiating the program by remediation of each computation, we invest in building an effective case management layer to orchestrate the remediation just like an assembly line in a factory. Once the case management layer is built, the computation operations are grouped and held together through this case management layer.

The computation operations for EUC remediation are typically formulae or macro-driven operations. In Business Process Management and case management terminology, these are groups of business rules combined in different structures to visualize the final computation. The central orchestration layer holds the assembling of the operations and acts as the glue in the remediation process.

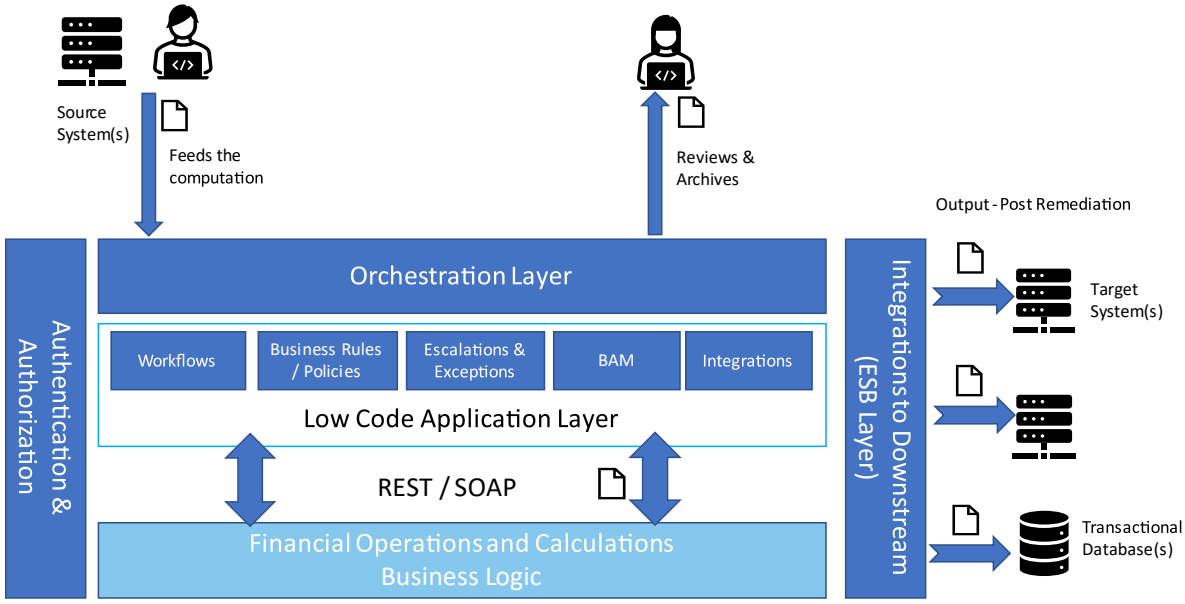

Figure 3 - Remediation through a Low-Code Factory Model

Components of the Low-Code Factory Model

The following components play a vital role in building the low-code factory for EUC remediation:

- **Case Work Type Orchestration:** Orchestration of the business workflow, storage, and maintenance of data at a large-scale capacity for various business processes
- **Workflow:** This automates the manual steps of the end user computing process in a structured manner to arrive at the target business outcome
- **Business Rules:** Formulation and application of business logic for decisioning at various stages of the workflow
- **Escalations and Exceptions:** Controls implemented for handling issues such as process delays, missed deadlines, user unavailability, or re-assignments
- **Robotic Process Automation:** RPA helps the business reconcile the data and automate routine Microsoft Excel operations in the end user computing process
- **Integrations:** Out of the box connectors using REST/SOAP protocol from the low-code factory to the transactional systems and databases
- **Financial Computational Logic:** The business logic of the EUCs defined by a sequential set of Microsoft Excel operations that can reside inside or outside the low-code factory layer
- **Enterprise Service Bus (ESB) Layer:** Integrations to the upstream and downstream systems and interfaces

Advantages of Low-Code Factory Model

The low-code factory approach requires an initial investment for building the case management and factory layer but provides significant benefits in the medium to long term as shown in Figure 4.

Benefits of the Low-Code Factory Model for End User Computing Remediation

TCO Reduction

Reduction in the total cost of ownership by **20% to 30%**

Reduction in TAT

Reduction in the turnaround time by **~50%** for automation of individual EUCs through reusability in the Factory components

Reduction in Manual Handoffs

The manual touchpoints post remediation are reduced by **~40%** leading to higher staff utilization

Error Free Remediation

The factory approach reduces manual errors and increases accuracy by **70% to 80%**

Compliance

Compliance with regulatory bodies with eliminated risk of penalty.

Figure 4 – Benefits of Low-Code Factory Model

Case study – Infosys Helps Global Bank Digitalize Digitize End User Computing

The EUC remediation approach using the low-code factory model covers four key business areas - governance, people, process, and technology. This creates a roadmap for organizations to achieve error-free computations, strong governance, and proper risk management to give the client better ROI, faster time to market, and complete transparency in the business process.

A multi-national financial services and banking giant embarked on a large-scale digitalization program to improve their accounting processes across multiple areas to comply with global regulations, assist decision-making in a timely manner, and reduce manual handoffs. Leveraging Infosys Fluid DPA and the low-code factory model approach, we ported the end user computations and operational accounting processes onto a centralized low-code platform. This resulted in improving the turnaround time by 30% and reducing manual handoffs significantly.

Conclusion

EUCs continue to present both challenges and opportunities for organizations. EUCs are the existing go-to applications widely used to perform business operations in financial institutions. However, organizations must continue their efforts to automate EUCs due to strict compliance laws and the need for risk management and governance.

With the EUC remediation approach using Infosys Fluid DPA, organizations can design and deploy a holistic enterprise level program that effectively combines elements of governance, people, process, and technology. Such a program contributes to overall risk management along with top and bottom line benefits.

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