



# SEAMLESS DATA MIGRATION: BEST PRACTICES TO TRANSFORM YOUR TECHNOLOGY LANDSCAPE

## Abstract

Many organizations today are undertaking extensive transformation programs to streamline their technology landscape. These initiatives aim to replace outdated legacy applications and databases with modern cloud applications, reducing inefficiencies and maintenance costs. While these transformation programs are complex, a critical success factor is the smooth migration of business data from legacy systems to new applications. This whitepaper provides insights and recommendations for successful data migration in large transformation programs.

## Introduction

As organizations strive to stay agile and competitive, they aim to improve operational efficiency, cost-effectiveness, and ease of doing business. Their digitalization journeys involve moving from legacy to modern applications and systems through meticulous planning, coordination, and alignment with business needs. To succeed, digital transformation programs must consider all aspects of the migration process, from identifying key stakeholders to adopting an iterative approach. The following sections outline migration strategies based on the collective experience of Infosys across our diverse client portfolios. These guidelines can enhance the likelihood of successful data migration in large-scale digital transformations.



# Data Migration Strategy

## Planning

- Identify migration leads
- Identify data owners
- Finalize tools
- Finalize migration scope

## Development & Execution

- Extraction
- Deduplication
- Transformation and validation
- Data load
- Reconciliation

## Testing & Go-Live

- Iterative testing
- Separation of master & transactional elements
- Cutover planning
- Test using migrated data

### 1. Identifying migration leads

A large-scale migration entails coordination with several business owners, publishing shared data to different tracks, identifying dependencies across migration entities, and detailed data cutover planning. Assigning a single migration lead to the organization and its IT vendor is necessary for smooth communication and coordination in large programs with multiple migration entities.

### 2. Establishing ownership

Each data entity must have a designated business owner responsible for critical activities that include:

- Finalizing data sources and extraction scope by deciding what data to extract
- Cleaning-up data and validating prior to load
- Providing a sign-off for reconciliation after data migration

Further, migration leads must collaborate with business owners to align on activity timelines.

### 3. Deciding and freezing migration scope

Early finalization and documentation of data migration scope are crucial. Any scope changes must be promptly discussed, documented, and communicated to all stakeholders to avoid delayed modifications that can prove costly.

The data migration scope document must include:

- Data entities within the migration scope, such as items, suppliers, purchase orders, customer invoices, and contracts
- Data entities out of scope
- Roles and responsibilities of the business owner, including key decisions, data clean-up, and data reconciliation sign-offs
- Roles and responsibilities of the IT vendors, such as data extraction, transformation, data load, and data reconciliation reports

### 4. Documenting migration strategy

While the migration scope document is a generic project-level document, it is also important to discuss, decide, and document detailed migration strategies for each data entity.

The migration strategy document should be signed-off by the business owner or the migration leads and should include the following details:

- Data extraction criteria from legacy applications
- Data cleansing methods as well as post-extraction rules and data correction logic
- IT tools used for extraction and cleansing
- Probable data volume to enable IT teams to plan their tasks
- Dependencies and prerequisites to allow for data migration sequence planning
- The migration methodology, such as file upload, import maps, or REST API, to help IT teams prepare suitable data templates as they identify, classify, and label mandatory and optional data attributes while hiding those that are unused
- The format for the reconciliation file.
- Financial validation if applicable, such as tying up inventory valuation with legacy after inventory on-hand migration
- Post-migration activities, such as reverse journal entries for inventory on-hand migration

### 5. Aligning migration strategy with business processes

While evaluating whether the migration strategy aligns with business needs, there are several considerations:

- Determine how business will use the migrated data. For instance, decide whether only two-way matching will be used while invoicing migrated purchase orders

- Assess if employees require any additional training. For example, specialized training to check cross-references when items from legacy applications are re-numbered.
- Ascertain whether specific in-flight transactions will continue to use the legacy application. For instance, active supplier negotiations may continue running on a legacy application until their closure.
- Establish a communication plan to inform suppliers, customers, and other partners about the potential loss of access to old transaction data if the legacy application is shut down without migrating old transactions.
- Develop and reach a consensus on a business process action plan for data that is out of migration scope. For example, define how to process customer returns for closed sales orders that are not migrated.

## 6. Separating master and transactional data

Master data entities, such as employees, items, customers, and suppliers, can typically be migrated independently. There could be some secondary master data entities, including item standard costs, selling price lists, and supplier agreements, which depend on primary master data entities. On the other hand, transactional data elements comprise purchase orders, invoices payable, customer invoices, projects, and contracts. Considering these elements are dependent on master data migration, it is strategically advantageous to prioritize the migration of master data entities before addressing transactional data elements.

We recommend classifying each application configuration task into one of the following three categories for greater efficiency in data separation:

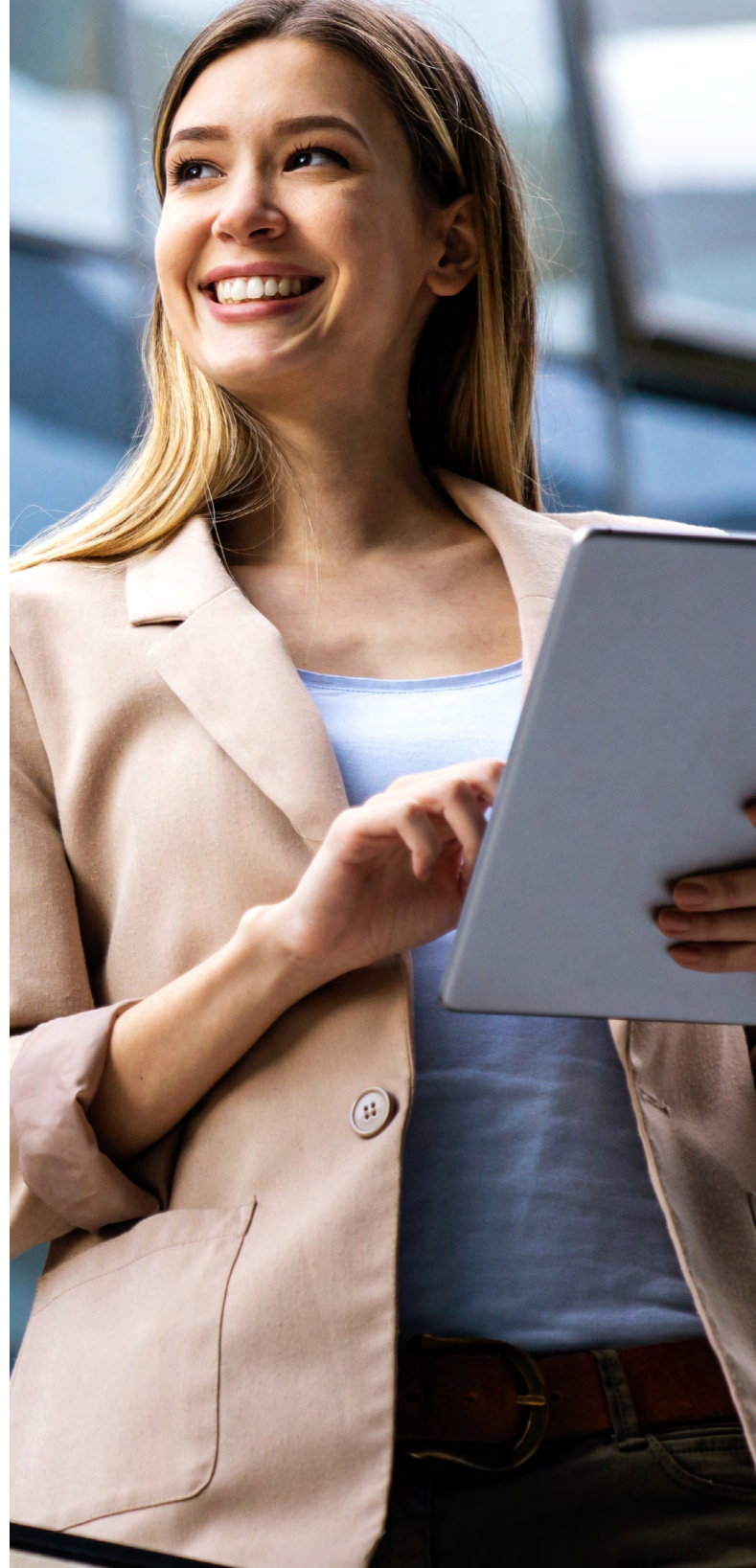
- Configuration tasks that are prerequisites for any master data migration, constituting only around 20% of all configuration tasks
- Configuration tasks that are not required for migration of any master data entities but necessary for one or more transaction data migrations, comprising approximately 40% to 50% of all configurations.
- All other configuration tasks that are unrelated to data migration

By employing this classification, master data migration can commence as soon as the identified 20% of configuration tasks are completed, without waiting for the complete application configuration. Similarly, transaction data migration can begin even if the application configuration is only 60% complete.

This prioritization approach allows for parallel activities during the project cutover, resulting in substantial time savings.

## 7. Organizing regular meetings with stakeholders

Migration leads should regularly meet with business owners and IT teams to reinforce the importance of finalizing the scope and the migration strategy.

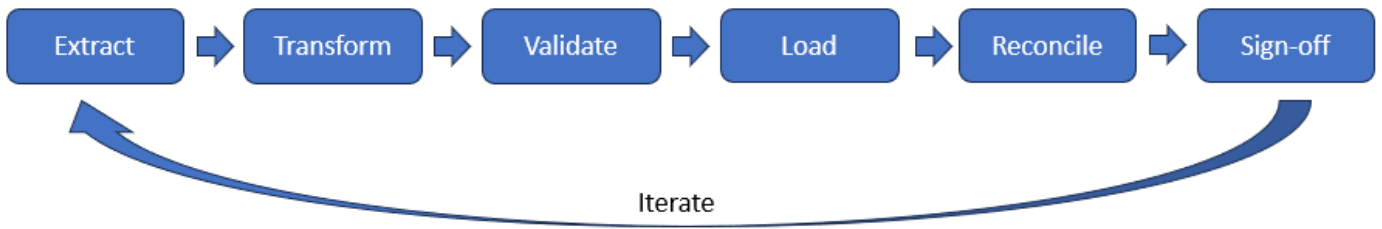


A designated e-mail distribution list (DL) can help facilitate clear communication with all the stakeholders, particularly on key decisions and common data elements such as units of measure (UOM), categories, payment terms, currency exchange rates, and cross-reference information.

Sending meeting agenda, notes, and action items along with identified action owners in a timely manner, is considered a best practice.

## 8. Enhancing data migration with an iterative approach

A typical project involves three to five iterations of data migration, including development (DEV), systems integration testing (SIT), user acceptance testing (UAT), Mock , and production (PROD).



Following project practices, determine progressive targets for data volume and success rate, acknowledging that these targets can vary between projects. Table 1 depicts a sample set of progressive targets for a project.

	DEV	SIT	UAT	MOCK	PROD
Target volume	25%	50	75	100	100
Target success rate	50%	80	90	100	100

Table 1: Sample data indicating progressive targets for data volume and success rate

Meticulously track and address any identified defects in each iteration before proceeding to the next one. After each iteration of data load, share data reconciliation reports with business owners for verification and sign-off. Ensure execution of post-migration activities as planned. Continuously measure progress and success for each iteration to identify problem areas and take appropriate corrective action.



## 9. Using migrated data for testing cycles

Every implementation project goes through multiple test cycles, such as SIT and UAT. We recommend incorporating a significant percentage of test scenarios that utilize the migrated data in each test cycle. These test scenarios may involve executing actions such as transferring a migrated employee, revising migrated price lists, processing receipts and invoices for migrated purchase orders, or applying receipt to a migrated customer invoice. This approach allows for identifying potential business process issues and migration data quality problems early in the project cycle, ensuring a smooth transition after the project go-live stage.

## 10. Planning for data cutover

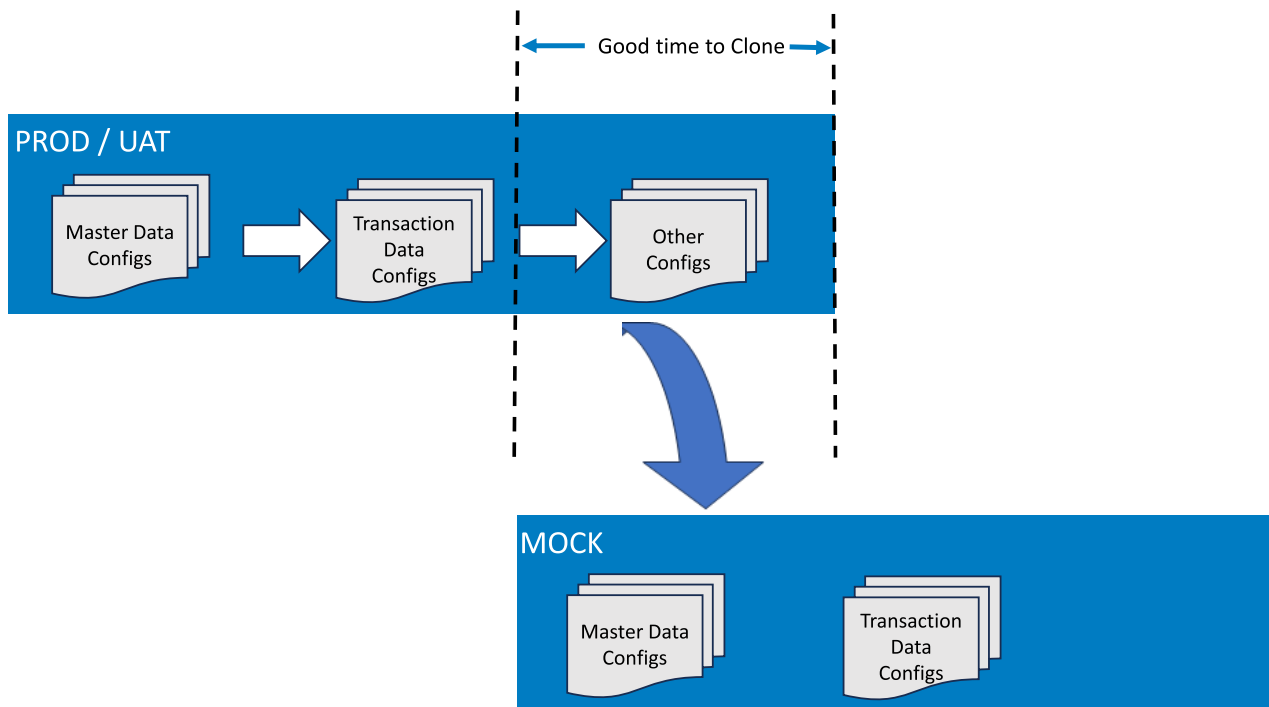
The deployment/cutover plan is the most critical document for the project's go-live. It is a comprehensive blueprint to coordinate and execute several tasks within a limited timeframe, making proper tracking and reporting indispensable. For efficient monitoring and reporting, the cutover plan must include:

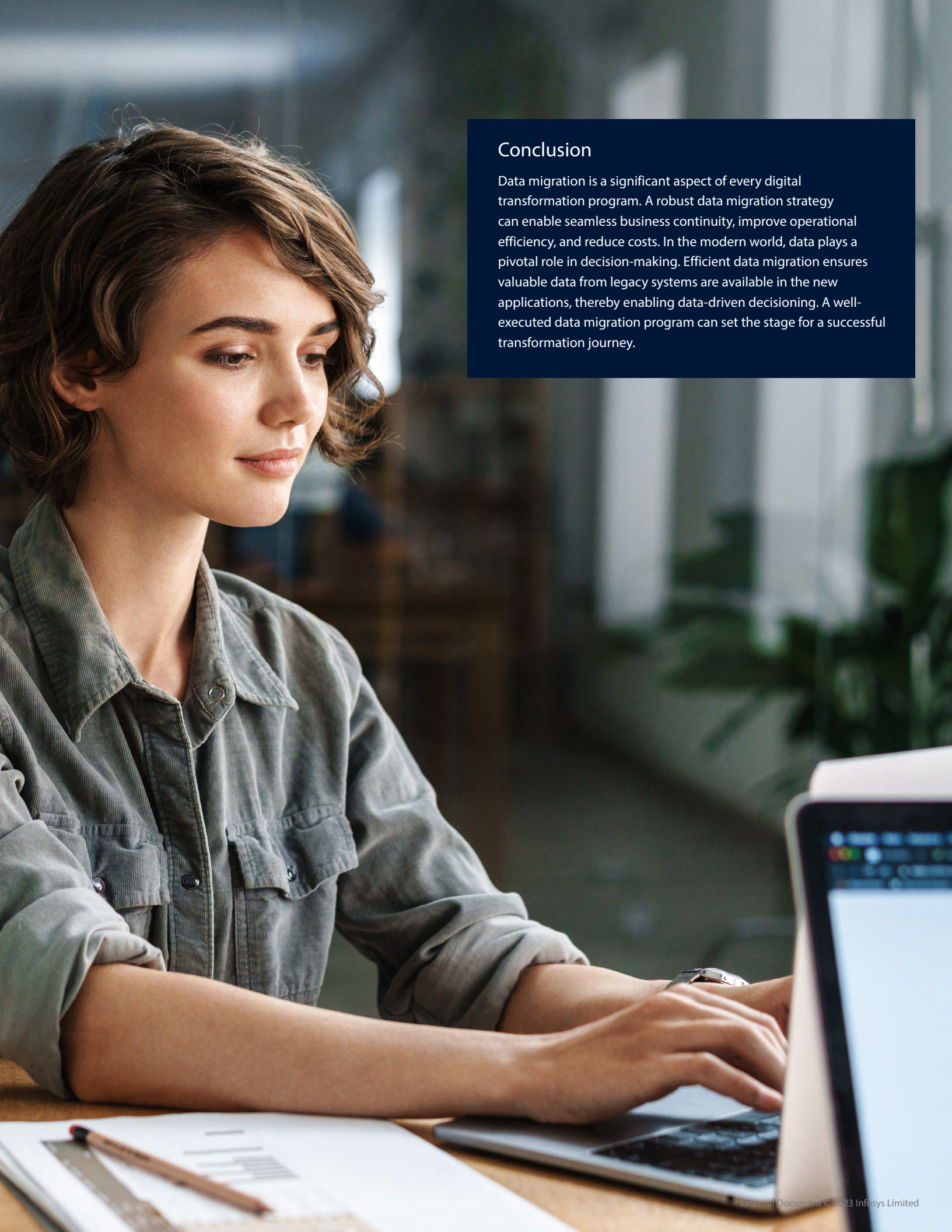
- A complete list of activities for each data entity, including extraction, clean-up, data upload, reconciliation, and post-migration tasks, along with planned dates and responsible action owners for each task
- Steps and timings for sending the migrated data to integrating applications, if applicable.



## 11. Utilizing mock instances for trial data

Loading data directly into the production instance may sometimes be risky. Therefore, it is advisable to employ a separate instance, commonly known as a mock instance, for trial data upload and verification just before the actual upload into the production environment. While this step is optional, it can prove highly beneficial. If opting for a mock instance, planning ahead is essential to ensure that the mock instance aligns with the same level of code and configuration as the production instance. In most projects, the mock instance is cloned from production either after completing all configuration tasks or just before initiating the master data conversions.





## Conclusion

Data migration is a significant aspect of every digital transformation program. A robust data migration strategy can enable seamless business continuity, improve operational efficiency, and reduce costs. In the modern world, data plays a pivotal role in decision-making. Efficient data migration ensures valuable data from legacy systems are available in the new applications, thereby enabling data-driven decisioning. A well-executed data migration program can set the stage for a successful transformation journey.

## Authors



**Kartik Prasad** is an MBA with 17 years of experience in IT consulting and delivery. He has participated in multiple Oracle implementations (cloud and EBIZ) and has helped steer complex transformation programs for organizations across Discrete Manufacturing, Hi-Tech and Retail industries. He has experience in Implementing ERP/Cloud solutions related to Supply Chain Management and handling large data transformations for the same.

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**Mohanish Mahajan** has 19 years of multifaced experience in ERP Cloud applications in various roles including Product Management, Consulting, Implementation, Rollouts, and Application Support. He specializes in Procurement and Supply Chain Management and has executed several large-scale transformation programs for clients across North America and Europe.

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