xceedance

DATA & ANALYTICS

Data Migration in Insurance

The Pragmatic and Programmatic Way

Introduction

It has been projected that global data volume will reach roughly 180 zettabytes by the year 2025. This unprecedented data growth rate poses challenges in managing and governing the data. As a result, many companies have started considering and investing in a robust data and analytics strategy that helps derive real value from data. Advanced analytics and AI have recently been getting much attention in the data space. Still, some areas are often ignored or given less attention, and one of them is 'data migration.'

WHY/WHEN DO YOU NEED DATA MIGRATION?

We all have heard about data-driven organizations; however, according to analysts at Forrester Research, a new type of organization/business is shaping up, the insights-driven business, which is 1.7 times more likely to grow revenue and 1.7 times more likely to reduce costs. However, to truly become an insights-driven business, an organization must prioritize improving its overall business processes that capture data in a timely and efficient manner. Adopting cloud-enabled, latest, and cutting-edge applications becomes essential in achieving that goal.

Different applications are available off-the-shelf for domains like banking, insurance, healthcare, retail, and others. Based on the business scale, these applications tend to capture enormous amounts of data when companies transact with their customers. Organizations constantly endeavor to ensure they capture relevant information about their customers, products, and how customers have interacted historically with the company. The more efficient the underlying application that captures such data, the more accurate and valuable the insights derived from it.

Therefore, there is a significant bearing on how companies, from time to time, either upgrade their home-grown applications or adopt market-ready/off-the-shelf applications to capture accurate data and stay ahead of the curve. While moving to new applications, companies must migrate their data from old to new systems. According to research by IndustryARC, the global data migration market size is expected to reach $25.2 billion by 2030, estimated to grow at a CAGR of 18.4% during 2024-2030.

This paper aims to provide a comprehensive outlook on the importance of migrating data, the risks and challenges involved, and an execution-oriented approach and methodology for carrying out data migration effectively and successfully.

Data Migration Projects
– Important facts

Research by Experian indicates:

DATA MIGRATION DELAYS
Only 46% of data migration projects are delivered on time, highlighting that 54% experience delays.

DATA MIGRATION – BUDGET OVERRUNS
36% of data migration projects are delivered within budget, indicating that 74% face budget overruns.

DATA MIGRATION - COMPLEXITY
The link between project duration and migration size:

- 1 million records:
  44% delivered within a year,
  56% beyond a year.

- 10 million records:
  39% delivered within a year,
  61% beyond a year.

- Less than 1 million records:
  76% delivered within a year,
  24% beyond a year.

The link between the number of legacy systems and project duration:

- Two or fewer systems:
  76% delivered within a year,
  24% beyond a year.

- Four or more systems:
  46% delivered within a year,
  54% beyond a year.

These statistics indicate that higher data volumes and more legacy systems increase migration complexity, resulting in longer durations. Thus, data migration projects require careful scoping, planning, and execution.

Data Migration - Risks and Challenges

COMMON DATA MIGRATION RISKS AND PITFALLS:

Insurance companies deal with massive amounts of data, and migrating large volumes from an old policy or claims system to a new one poses a more significant challenge. Therefore, identifying risks early in the process and devising a mitigation plan is essential for successful migration.

Incompatible Source and Target Data Structures

Legacy policy, claims, billing, pricing, and exposure systems use older data storage methods incompatible with modern storage/database systems. This requires detailed analysis and broader expertise to handle and cater to various storage formats.

Data Quality Issues

This is one of the most critical and often ignored areas in data migration. It is also the most challenging to deal with unless a thorough and careful analysis is done before embarking on the data migration process. Several data quality aspects, such as missing values, incorrect and incomplete values, and duplicate and non-standard values, must be addressed during the migration process. When migrating data from multiple sources, data integrity challenges require data experts to handle such situations. Failing to address data quality issues can lead to numerous iterations and can significantly impact the success of the data migration process.

Data Compliance

Handling sensitive PII information while migrating customer and policy data is critical and needs particular focus and attention during the initial stages. Proper governance mechanisms and security protocols should be used to avoid data breaches and regulatory violations.

Business Disruption

The quality of initial data analysis often decides how accurately data mapping has been done and to what extent data quality issues have been identified up front, as these two aspects become pivotal in determining the overall duration of the data migration process.
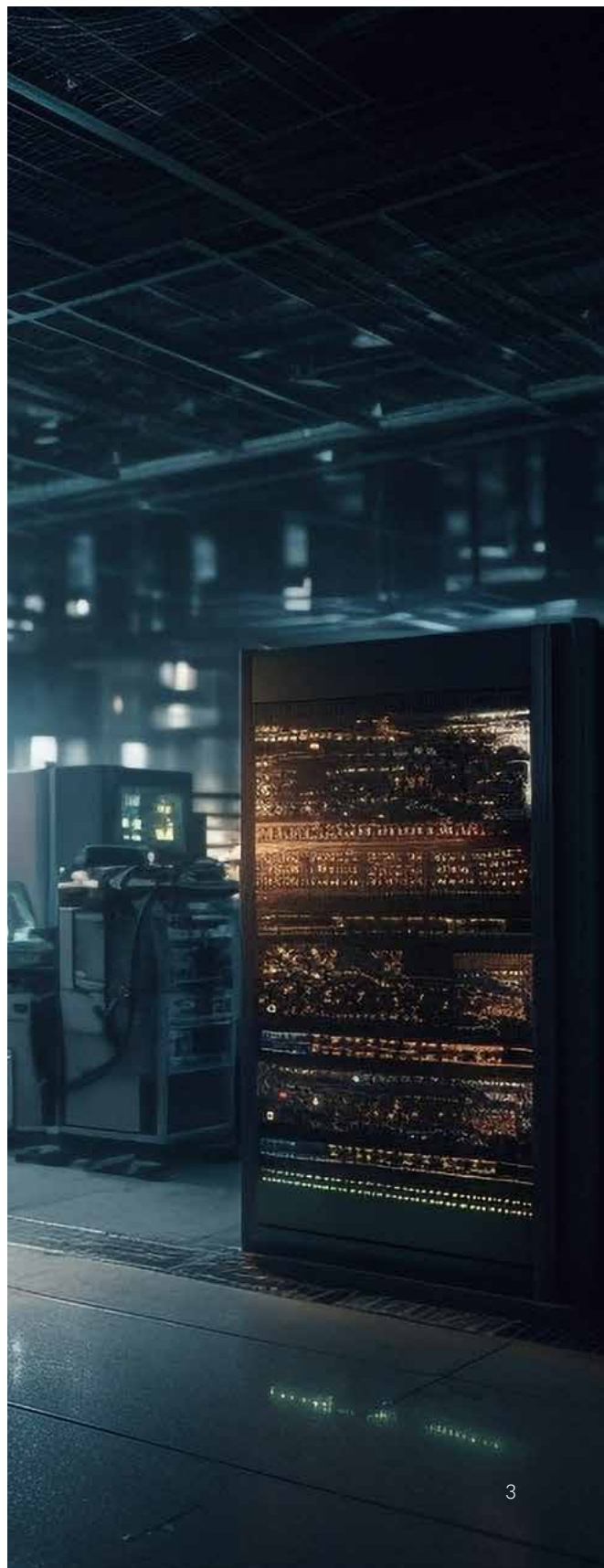
Data Migration - Best Practices

Here are the top seven best practices that help increase the success rate of any data migration process:

1

Proper Planning:

Draw a charter that entails the need for migration, what needs to be migrated, the time available for migration, potential risks and challenges, and a detailed plan that covers all aspects of migration.

2

Testing Strategy:

Testing migrated data to the new system involves various aspects such as reconciliation, validation, and overall data accuracy. Every data migration process requires a tailored testing strategy that is suitable for the requirement.

3

Execution Strategy:

Whether you need a big bang migration, a phased migration, or a hybrid approach depends on the use case and the requirement. However, a wrong approach could mean longer migration times and increased costs.

4

Manual vs Automated Tool:

Data migration involves a series of activities such as data profiling, extraction, transformation and cleansing, loading, testing, and validation, and the absence of an automated tool can increase the chances of error requiring more iterations.

5

Data Back-ups:

Back up all the data before embarking on the data migration journey, as this provides a fallback plan if things go south.

6

Data Assessment and Classification:

Any data initiative must start with a thorough data assessment; data migration is no exception. Studying source and target data structures and formats and classifying data into the correct categories helps build a detailed mapping document, which forms the bedrock of any successful migration.

7

Data Cleansing:

Moving data from an old structure to a new structure and format could be daunting, and insufficient data quality can worsen the situation. Assessing data issues while analyzing the source systems and planning to address them during the data transformation process can increase the new system's acceptability.

Key Drivers for Successful Data Migration

PEOPLE

A skilled data migration team with experienced practitioners and domain knowledge is essential.

PROCESS

Data Quality Strategy

Fixing data quality issues is crucial for reaping the benefits of new systems. Develop a proper strategy early to avoid rework.

### Data Migration Execution Strategy

Based on complexity and volume, decide between Big Bang and phased migration. Phased migration is often more successful for complex, large-volume migrations.

TECHNOLOGY

Tools and technologies are available that help you extract data from point A, transform it, and load it to point B. Tools like Informatica, Microsoft SQL Server Integration Services (SSIS), etc., can be used for data migration. However, they are generic and do not provide a data migration-specific framework or methodology to expedite the migration project, requiring significant configuration.

A better approach for migrating data is to have a migration framework that can connect to one or more sources as needed, stage the data from the sources, cleanse, standardize, and transform it before loading it into the final target system.

A robust data migration tool/framework provides the following advantages:
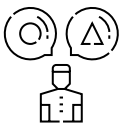
MORE ACCURATE DATA PROFILING
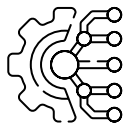
MORE ACCURATE DATA MAPPING

IMPROVED DATA QUALITY

NO DATA LOSS

MINIMAL DOWNTIME AND BUSINESS DISRUPTION

Building a Robust Data Migration Toolkit

Automating and streamlining the data migration process and reducing errors and iterations required a reliable, digital- and cloud-first data migration toolkit encompassing:

- Pre-staging and staging data model

- Pre-defined templates/artifacts
    - Source to target mapping template
    - Data dictionary for staging schema
    - Reconciliation kit
    - Data migration design template, plan, and test cases

Such a toolkit mitigates risks and challenges, ensuring on-time and on-budget project completion.
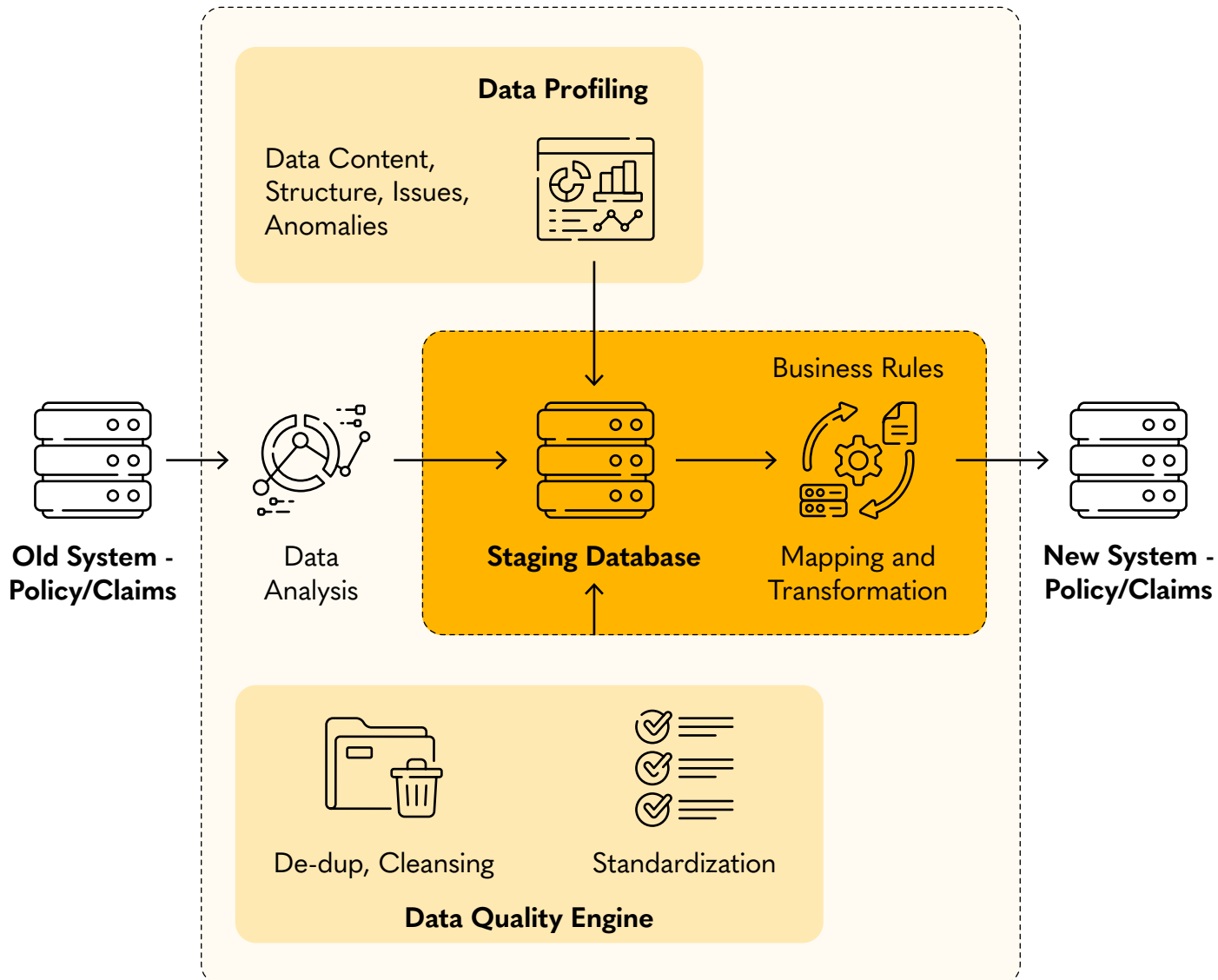
The following infographic provides a comprehensive overview of the structured approach to data migration projects, highlighting the key phases involved in planning, execution, and achieving desired outcomes.

PLANNING ▶	EXECUTION			▶	OUTCOME ▶
Identify detailed migration scope & requirements	**DATA PROFILING AND ANALYSIS**	**DATA MAPPING & TRANSFORMATION**	**DATA INGESTION**	**DATA VALIDATION**	Usable target/ new system - validated by business
Migration - Issues, risks and mitigation plan	• Business requirement - business processes/ data flow	• Data mapping from source to staging to target systems	• Extract, transform and load data to staging	• Reconcile data from target back to source system	Minimal downtime and business disruption
	• Data profiling - source and target	• Review and finalize data mapping document	• Data cleansing and standardization	• Ensure completeness and correctness of data	
Migration design & execution strategy	• Identify anomalies, data inconsistencies, and dependencies	• Define, review and finalize data cleansing rules	• Data ingestion from staging to target system	• Execute system integration and user acceptance testing	Minimized cost/ increased ROI
Formulize project plan, schedule & cost	• Migration strategy - load cut off, acceptance criteria	• Define, review and finalize data transformations	• Unit testing and reconciliation - source to target	• Ensure adequate data quality	Improved efficiency in the new system

A robust data migration toolkit should possess specific features to effectively address common challenges encountered during data migration projects. These features include:

ADVANCED DATA PROFILING CAPABILITIES

The toolkit should incorporate a defined data profiling approach that identifies data quality issues upfront. It should fix the bulk of these issues within the staging layer, ensuring clean and accurate data is loaded into the target system.

ACCELERATED DATA INGESTION

The toolkit should expedite data ingestion, minimize downtime, and ensure efficient data loading. This feature is crucial for maintaining business continuity, even when multiple iterations are necessary.

EFFICIENT DATA MAPPING TEMPLATES

A migration toolkit should provide comprehensive mapping templates for "Source to Staging" and "Staging to Target" data mappings. This ensures efficient and accurate data mapping and avoids multiple iterations.

BUILT-IN RECONCILIATION FRAMEWORK

A practical data migration toolkit must include an in-built reconciliation framework to ensure no data is lost during migration. This guarantees that the data in the target system is complete and accurate by reconciling data back to the source system.

By incorporating these features, a data migration tool can significantly reduce the risks and challenges associated with data migration projects, leading to smoother and more efficient data transitions.

Real Challenges, Real Solutions

How a leading re/insurer overcame data challenges with a structured, framework-driven data migration

A large EMEA re/insurer aimed to expand its business across geographies and reduce operational and performance costs by migrating from the DB2 database to the modern MS SQL Server 2012.

BUSINESS CHALLENGE

- Obsolete technology stack
- Technology ecosystem not viable for scaling up
- Lack of available technology skills
- Longer time to market during expansion

BENEFITS

- 25% reduction in migration effort
- Comprehensive coverage of test scenarios, ensuring no surprises in production
- Fewer iterations leading to minimal business disruption

SOLUTION

- Team of data migration experts and insurance domain SMEs
- Adoption of a phased migration approach
- Detailed analysis of source and target systems
- Focus on data quality aspects, including enrichment, standardization, and integrity

- Implementation of lessons learned from initial iterations
- Structured data migration sequence to avoid referential integrity issues
- Data validation testing

Effective data migration is crucial for staying competitive in today's data-driven landscape. Leveraging a robust data migration framework/toolkit that addresses common challenges ensures a smooth transition and maximizes the value of your data.

Author:

Husain Parvez
Vice President – Data & Insights

Transform your data migration projects with proven strategies and advanced tools. Contact Xceedance today to learn how our data migration solutions can help you achieve seamless, efficient, and successful data migrations. For more information or to discuss your data migration needs, reach out to us at **contact@xceedance.com**.

Unlock the potential of your data with Xceedance. Let's migrate to success together.

Scan the QR code to visit our website, or go to www.xceedance.com

xceedance