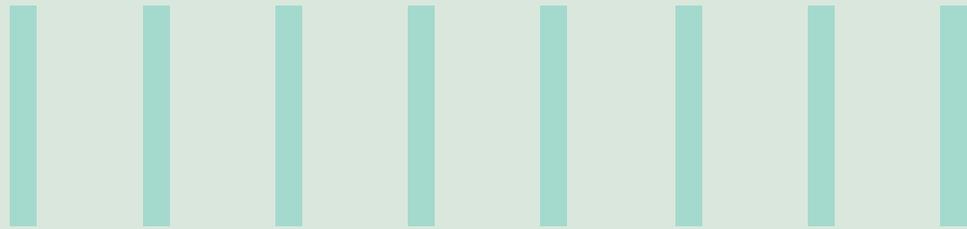




A STRATEGIC FRAMEWORK FOR DECOMMISSIONING LEGACY TECH

IMPERATIVES, CHALLENGES AND MITIGATION
STRATEGIES FOR ENTERPRISES: A WHITE PAPER



Executive Summary

Legacy IBM mainframe workloads are still mission-critical. But they are aging, difficult to maintain, and expensive. Many enterprises now seek migration to modern, flexible, cost-effective platforms or Commercial Off-the-shelf (COTS) products. Structured decommissioning of legacy applications, data, and infrastructure has become crucial post-modernization.

This white paper explores strategies and challenges to decommission IBM mainframe workloads. It is written for IT departments, executives, project managers, and end users planning to migrate or modernize legacy workloads to open systems.

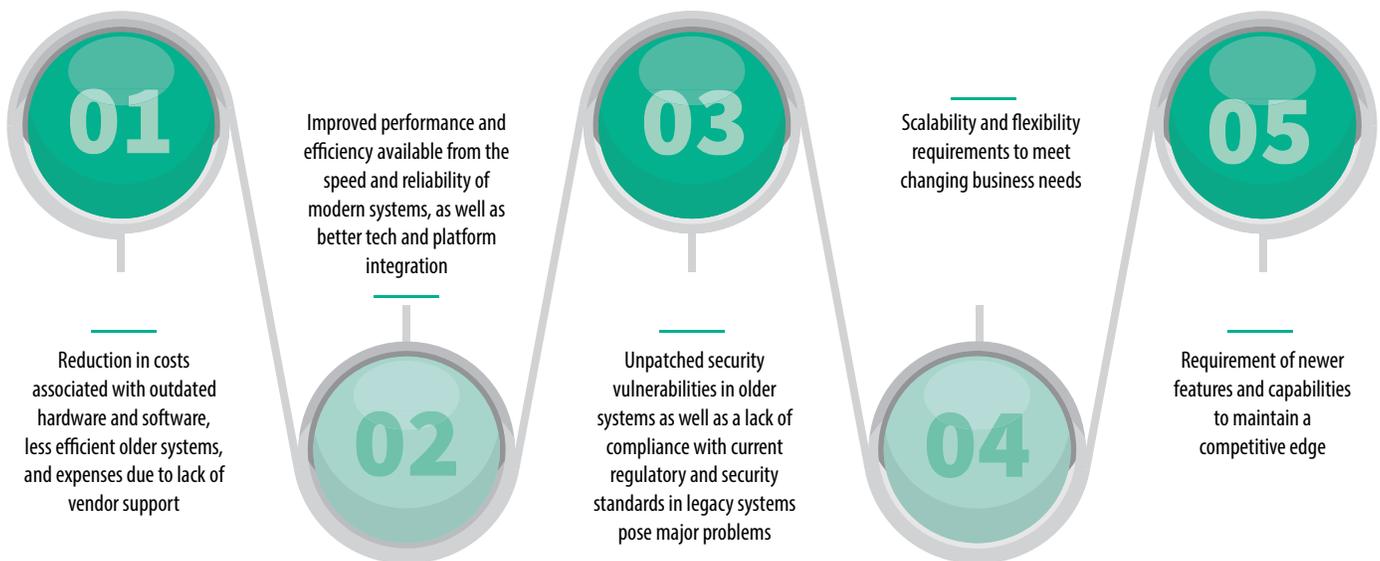
Introduction

IBM Series mainframes have been the cornerstones of enterprise computing for decades, featuring COBOL, JCL, DB2, and CICS. Their reliability, security, and transaction processing capabilities remain critical for large organizations, particularly in banking, insurance, healthcare, and government.

Despite these strengths, enterprises are increasingly seeking transitions to open-source systems and COTS products for greater flexibility, scalability, and lower costs. This shift is driven by challenges running mainframes present today—including technology integration limitations, SME scarcity, slow change implementation, and high licensing and maintenance expenses—making modernization and subsequent decommissioning necessary.

Decommissioning: A Critical Step towards Modernization

Decommissioning legacy systems is a critical step for many enterprises that aim to modernize their IT infrastructure, improve efficiency, and reduce costs:



What it Takes to Succeed from a Management Perspective

There are four key areas on which Project Owners must focus to ensure the decommissioning is successful.

1. Comprehensive Assessment and Planning, requiring

- A thorough inventory of all legacy systems and their dependencies
- Identification of potential risks and creation of mitigation strategies
- Business Impact Analysis and resultant plans, and
- A clear roadmap with timelines, milestones, and resource allocation

2. Stakeholder Engagement and Communication

- Engage all stakeholders, including business leaders, IT teams, and end-users
- Establish a communication plan to keep everyone informed about the process, progress, and benefits

3. Data Migration and Management

- Data Inventory and cataloging of all data that needs to be migrated
- Data Cleansing to remove redundancies and errors
- A detailed Migration Plan to ensure data integrity and continuity
- Selection of the right modern systems that align with business goals and requirements
- Ensure seamless integration with existing systems and processes
- Thorough testing to ensure the new system meets performance, security, and functionality requirements

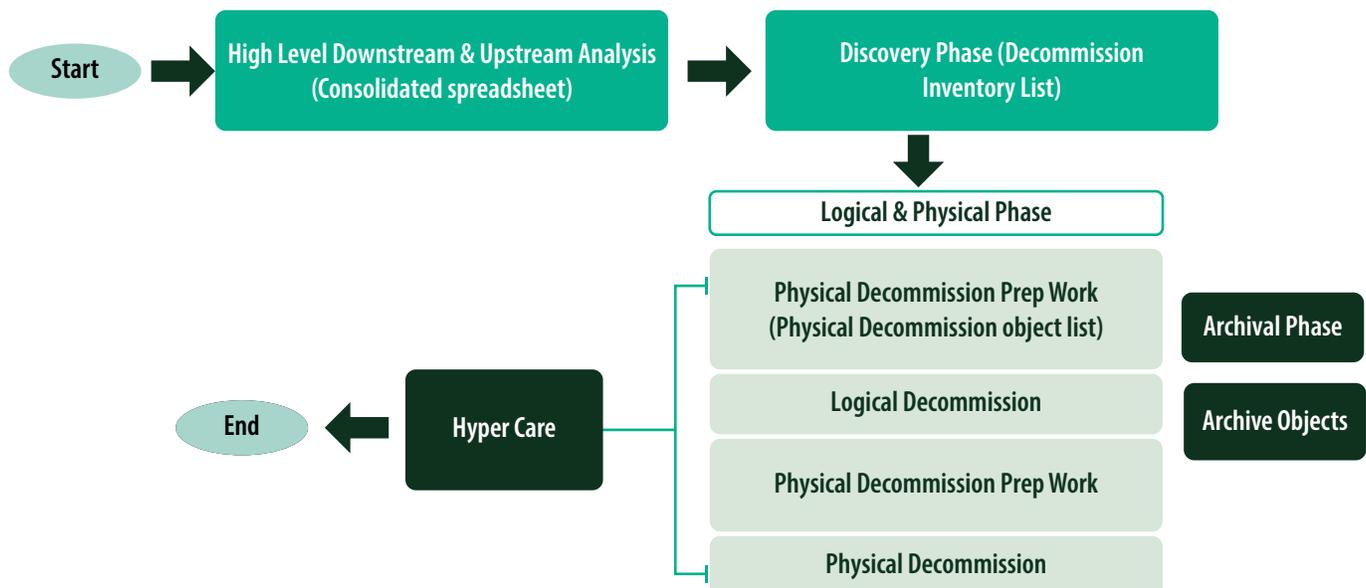
4. Hypercare

- Comprehensive Training Programs for users to ensure they are comfortable and proficient with the new system
- Establish support mechanisms to address issues that arise during and after the transition

Decommissioning in Action from a Technology Perspective

Application Modernization Services need to be designed from both management and technology perspectives. From a technology point of view, decommissioning consists of three interdependent phases, and a smaller fourth phase.

- Analysis: A comprehensive analysis of the systems, interfaces and inventory to understand dependencies and impact
- Logical decommissioning: Conversion of system components into non-functional entities
- Archiving and physical decommissioning: Physical removal of inactive components from the system after archival.
- Post-decommissioning, a Hypercare phase is executed, which involves training and support activities for business continuity.



Graphic 1: Decommissioning Phases

Here's a detailed look at each of the three key phases.

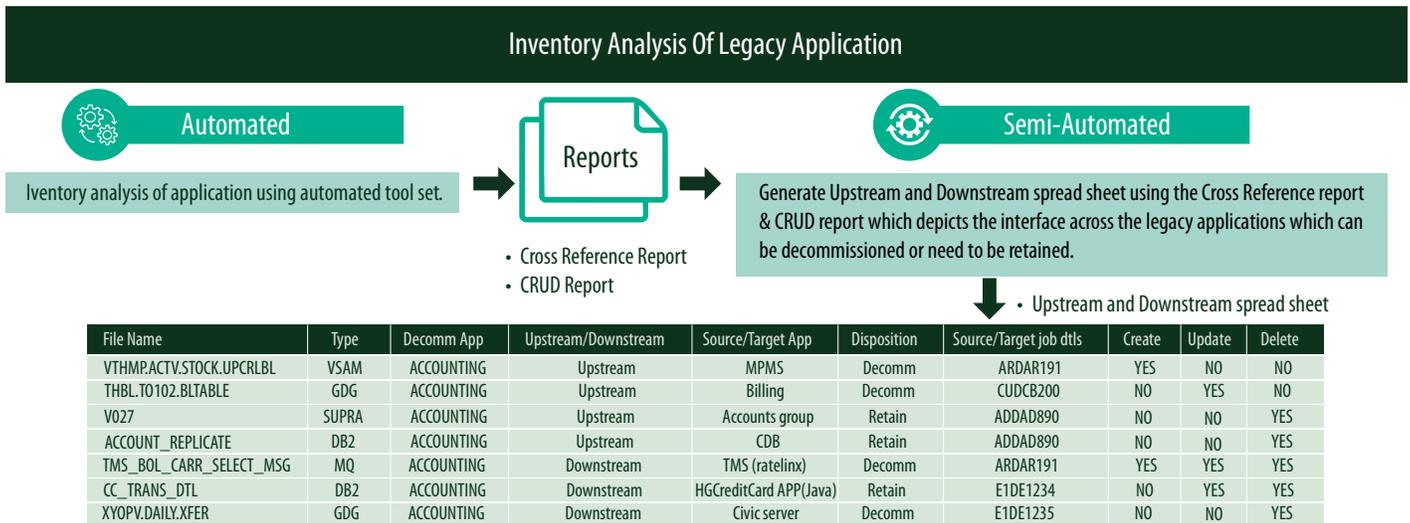
1. Analysis: This is the most critical step in the decommissioning process, as subsequent phases depend on its accuracy. This phase involves a thorough assessment of the target system and its interfaces to identify components that can be safely decommissioned.

The main activities undertaken during analysis include:

- A thorough inventory analysis, including identifying components to be decommissioned via an automated process. This also entails generation of the consequent upstream and downstream reports.

Note that a component can be decommissioned if it is not used as an input for any interfacing system. Any components that may adversely impact an existing system after decommissioning of the target system are deemed unfit for removal.

- If no such dependencies are found, project owners must inform the respective system SMEs about any potential impact, and conduct a mitigation analysis to ensure a smooth transition.



Graphic 2: Inventory Analysis of a Legacy Application during Decommissioning

2. Logical Decommissioning: During this phase, all identified impacted workloads are transitioned into an inactive state, and active services are stopped. Key activities in this phase include:

- Identifying batch jobs for decommissioning
- Determining which services to turn off on respective servers
- Disabling UI links to ensure they are inaccessible.

3. Archival and Physical Decommissioning

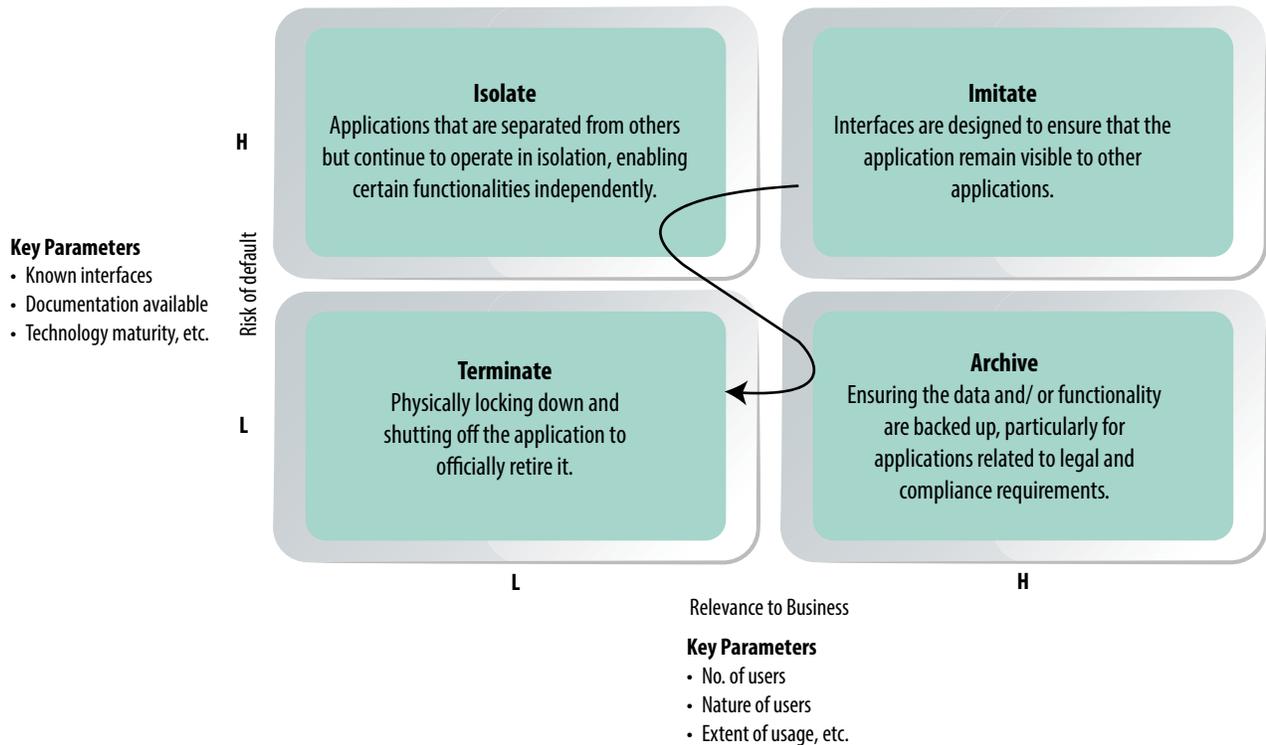
This phase involves two important steps.

- **Archival:** In the archival phase, all components are securely archived in designated archival libraries before proceeding with physical decommission. These may include application components such as program cards and scripts, online components such as transaction listings and CICS programs, and app or database servers. The archival location is determined based on the component type. Components are deleted from the production library only after successful verification of their archival. Programs are copied to the archival library, while files and tables explicitly requested for retention are archived before deletion. Additionally, servers and databases are backed up in accordance with retention policies before being decommissioned.
- **Physical Decommissioning:** Following analysis, inventory updates, and logical decommissioning, the final stage involves physical decommissioning of the files, tables, scripts, servers, code repositories, and programs. All the inactive components are removed from the production environment.

Infosys' Strategic Approach to Decommissioning

At Infosys, decommissioning of legacy systems is a strategic initiative rather than just an IT project. Infosys' strategy involves a detailed assessment of the existing applications through four lenses prior to decommissioning: imitate, isolate, archive, and terminate.

Based on these lenses, applications are positioned in one of four quadrants. Each quadrant has a series of actions to assess the risks of the application versus its relevance to business, within the system to be decommissioned. This assessment includes clearly defined objectives and an action plan to transition applications from one category to the next.

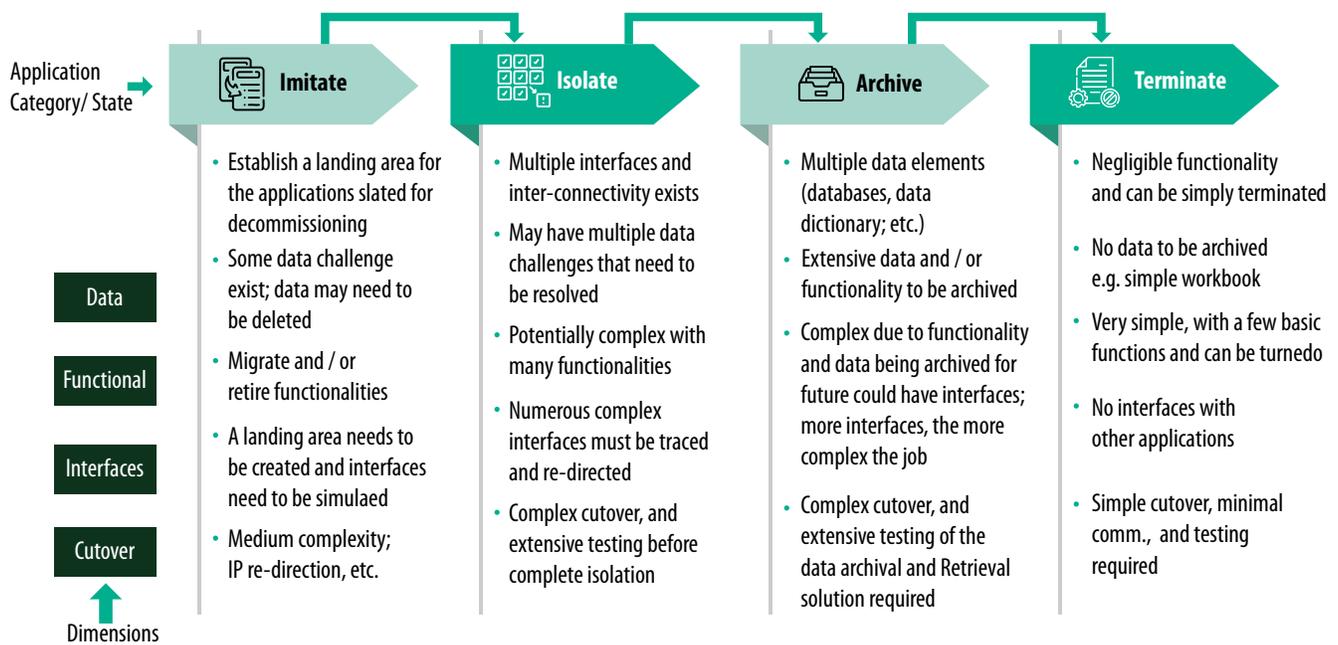


Graphic 3: The Four Lenses to Assess Risk in Applications to be Decommissioned

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Graphic 3: The Four Lenses to Assess Risk in Applications to be Decommissioned

This approach helps the team to directly terminate applications with the lowest risk, while those with the highest risk are gradually shut down with data being archived.

Deep Expertise with Complex Legacy Landscapes

Infosys has developed deep expertise in managing, maintaining, and decommissioning complex legacy landscapes using the ART framework (Accelerate, Renew, Transform) to de-risk programs optimize costs.

Key Infosys differentiators include:

- A “*meet in the middle*” approach that balances business and technology perspectives for maximum transformation benefits
- A *People + Software strategy* combining expert knowledge with tools, reducing effort by 30% through automation
- Deep technology expertise with 30+ tools and 100+ IPs/ accelerators that optimize modernization programs across code conversion, testing, data migration, and knowledge management

Challenges and Mitigation Strategies

As with all technology endeavors, decommissioning comes with its associated challenges. Infosys has developed a mature set of mitigation strategies for these.

Decommission Challenges	Infosys Proposition
<p>Limited knowledge of entire application:</p> <p>Most organizations lack a detailed understanding of legacy applications and batch jobs. There is a lack of system documentation as well. Existing knowledge is often limited to a few SMEs who are part of a shrinking talent pool.</p>	<p>Infosys uses a partner tool-based knowledge engineering approach for knowledge discovery, that minimizes dependencies on SMEs.</p>
<p>Lack of clear business plan:</p> <p>As part of a Brownfield approach, clients may be in the process of enhancing existing platforms simultaneous to legacy migration efforts. Impact and interface analyses may not available for the running legacy applications.</p>	<p>Infosys has developed a business process to integrate with automated tool outputs to generate insights for upstream and downstream analyses of legacy applications. This process organizes information about files and databases into easy-to-read spreadsheets, simplifying analysis.</p>
<p>Unsupported components:</p> <p>A large part of the applications to be decommissioned have various non-supported databases that require manual effort to analyze interfacing applications. This analysis focuses on the Create, Read, Update, Delete (CRUD) operations performed by upstream and downstream applications.</p>	<p>Infosys has developed an open-source solution to analyze DB files from the codebase and to generate CRUD report spreadsheets, thereby saving 80% of manual effort.</p>
<p>Delayed Analysis:</p> <p>Capturing scheduling details such as job predecessors, successors, dependency, dataset trigger jobs, SAP super job chains, time dependency and various agents' details running in legacy scheduler is a challenge.</p>	<p>Infosys built an in-house tool to extract the required information from legacy schedulers for both active and inactive jobs. This tool extracts the required key information such as:</p> <ul style="list-style-type: none"> • Triggered By • Triggered Jobs • Successor Jobs • Dependency • Dataset Triggered Jobs. • Agent Information • Prose <p>This tool is used in validation post logical decommissioning, thereby saving on huge manual effort. This tool is used by clients during the Hypercare step. Accuracy: 90% ~ 95%.</p>
<p>Limited Client SME support due to unavailability of clients</p>	<p>Infosys recommends an approach based on people, processes, and technology, where a smaller number of SMEs leverage migration tools to accelerate the journey to the target state</p>
<p>Fear of change:</p> <p>Legacy decommissioning exercises require strong change management as many internal teams are involved.</p>	<p>Infosys' experience in change management and decommissioning ensures seamless adoption of the new solution while allowing customer teams to focus on their core activities.</p>

Table 1: Challenges and Mitigation Strategies

Conclusion: Well-planned Decommissioning is Essential for Business Continuity

Decommissioning legacy mainframe systems is vital for modernizing IT infrastructure, reducing costs, and enhancing agility. With careful planning, modern technologies, and risk mitigation strategies, enterprises can unlock operational efficiencies and innovation.

A well-executed strategy minimizes disruption while transitioning from outdated mainframes to flexible, scalable, cost-effective platforms. Through structured approaches, professional partnerships, and automated tools, enterprises can successfully navigate decommissioning complexities, creating an agile IT environment that meets evolving market demands and drives long-term success.

About the Author

Abhishek Nigam is a Technology Architect with the Legacy Modernization Practice at Infosys. With over 18 years of experience in mainframe and related technologies, Abhishek has worked on migrating numerous applications to newer platforms. Currently, he helps organizations modernize their legacy application portfolio.

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