TECH mahindra

WHITEPAPER

Core Modernization for Banks

Transforming the Financial Landscape for a Digital Future

Executive Summary

The financial industry is changing fast. Digital technologies, rising customer expectations, and new regulations are putting pressure on traditional banks. Core modernization is crucial for transforming these systems into agile and efficient ones. This whitepaper explores the strategic importance of core modernization. It outlines various approaches—from gradual upgrades to comprehensive transformations—and discusses key considerations, success factors, and potential challenges. By providing actionable insights, this paper guides banking leaders in navigating the complex journey of core modernization, helping them transform their systems into agile, efficient, and customer-centric platforms.

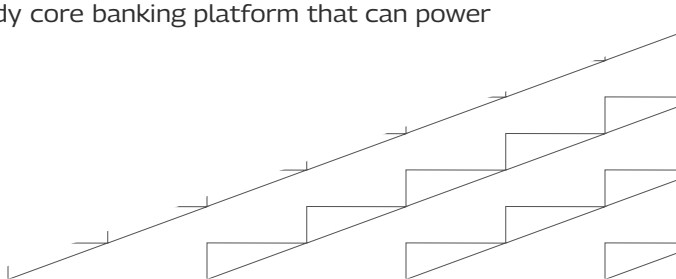
Content

Introduction

In 2025, banks that modernized their core systems reported a 45% boost in operational efficiency and a 30-40% reduction in costs within the first year.1

For years, banks have relied on legacy core systems. These systems manage critical functions like payments, loans, and customer records. They were once stable and reliable, but today, they are becoming a barrier to growth. With changing digital technologies and rising customer expectations, new regulations are putting pressure on traditional banks to adapt and evolve with time. This means replacing or upgrading them with newer, flexible platforms. The goal is to become more agile, reduce costs, and offer better experiences to customers.

As banks chart their modernization journeys, understanding the trade-offs and opportunities associated with each approach is crucial to building a resilient, future-ready core banking platform that can power sustainable growth in a rapidly evolving market.



Core System Modernization: The Urgency

It has been established that legacy systems are hindering banks' efficiency. Core modernization is no longer optional to keep pace with the rapidly evolving financial ecosystem and meet customers' expectations. Here's a deeper look at why modernization is essential:

- High risk and effort to enhance current products and create new products
- Risks of operational failures due to talent atrophy, technology obsolescence, and limited knowledge at the code level
- Lack of real-time capabilities leading to operational inefficiencies and suboptimal customer experience
- Legacy systems are deeply entrenched in complex interdependencies and often lack sufficient documentation, making upgrades a daunting task.
- These systems often lack the agility and flexibility to adapt to new regulatory requirements quickly
- Legacy systems face resiliency challenges due to monolithic architecture, limited recovery capabilities, and dynamic scalability, which can cause them to struggle to add new functionality

Strategic Approaches to Core Modernization

Banks can modernize their core systems by leveraging multiple approaches, based on both tactical and long-term visions. Each bank has different goals, timelines, and risk levels. Choosing the right path depends on where the bank is today and where it wants to go. Here's a breakdown of various approaches to help determine which approach might be best suited for different scenarios:

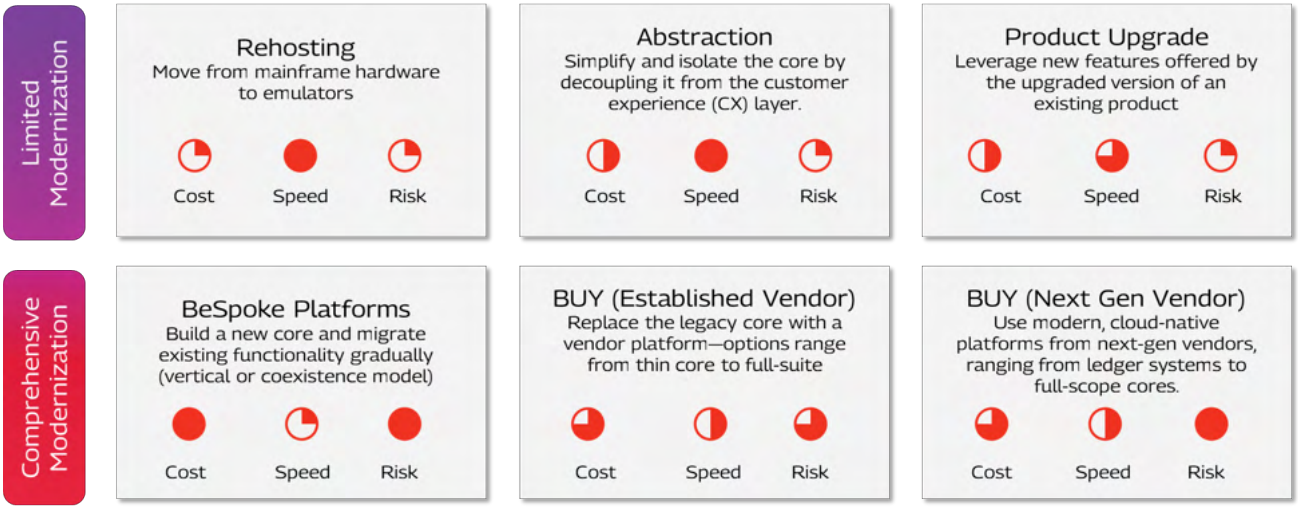


Figure 1: Approaches to Core Modernization

Limited Modernization – Key insights for Decision Making

Rehosting

Applicability
- Ideal when infrastructure contracts are ending.
- Helps reduce mainframe costs.

Limitations
- Best suited for workloads under 400 MIPS.
- Not compatible with complex mainframe packages (e.g., ObjectStar).
- Does not address the shortage of mainframe skills.

Success Factors
- Thorough dependency analysis.
- Efficient workload management for performance and resilience.

Tech Stack
Micro Focus (Rocket), TmaxSoft

Impact

Cost	Risk to Implement	Time to Value
		

Abstraction

Applicability
- Allows component/platform separation in a hybrid environment (e.g., CX layer separation).
- Often used as a first step toward hollowing the core.

Limitations
- Does not reduce legacy system complexity.
- Requires high API maturity for large-scale transformations.

Success Factors
- Clear API strategy that balances reuse and customization.
- Strong governance around security, compliance, and performance.

Tech Stack
API/Microservices, Cloud, BPM

Impact

Cost	Risk to Implement	Time to Value
		

Product Upgrade

Applicability
- When vendors offer upgraded products with new features.
- Needed when support for the existing version is ending.

Limitations
- Vendor lock-in.
- Upgrade pace depends on the vendor's roadmap.

Success Factors
- Vendor maturity and upgrade path.
- Strong vendor relationship.

Prominent Solutions
Temenos, FIS, Finastra

Impact

Cost	Risk to Implement	Time to Value
		

Comprehensive Modernization – Key Insights for Decision Making

Bespoke Platforms

Applicability
- When the organization wants full control of architecture and IP.
- No off-the-shelf product fits requirements.

Limitations
- Longer implementation timelines.
- Higher capital expenditure.
- Requires skilled teams at scale.

Success Factors
- Modular, cloud-native architecture.
- Agile delivery with end-to-end DevSecOps.

Tech Stack
Cloud, API, Microservices, Data, BPM

Impact

Cost	Risk to Implement	Time to Value
		

Buy (Established Vendor)

Applicability
- For enterprises that need proven, high-performance solutions.
- Fits standardized needs.

Limitations
- Limited customization.
- Vendor dependency.
- Less room for differentiation.

Success Factors
- Right product fit for business needs.
- Strong vendor and implementation partnerships.

Prominent Solutions
Temenos, Finacle, FIS, Finastra

Impact

Cost	Risk to Implement	Time to Value
		

Buy (Next-Gen Vendor)

Applicability
- Suitable for banks seeking modern platforms for digital and SaaS models.
- Allows for moderate customizations.

Limitations
- Some platforms are still maturing.
- Vendor stability may vary.

Success Factors
- Product fit with business needs.
- Strong partnerships and clear product roadmaps.

Prominent Solutions
Thought Machine, Mambu, 10x

Impact

Cost	Risk to Implement	Time to Value
		

Key Challenges Faced by Banks Modernizing Their Core Systems

Modernizing core systems is no small feat. Banks often encounter significant challenges that can derail timelines or drive-up costs if not carefully managed.

Cutover risk is one of the biggest concerns. Moving to a new system requires careful consideration and planning. Any downtime or data issues can negatively impact customers and erode trust. Some banks run both old and new systems in parallel for a period. This coexistence period can stretch longer than expected. It increases costs and makes switching to the new platform harder.

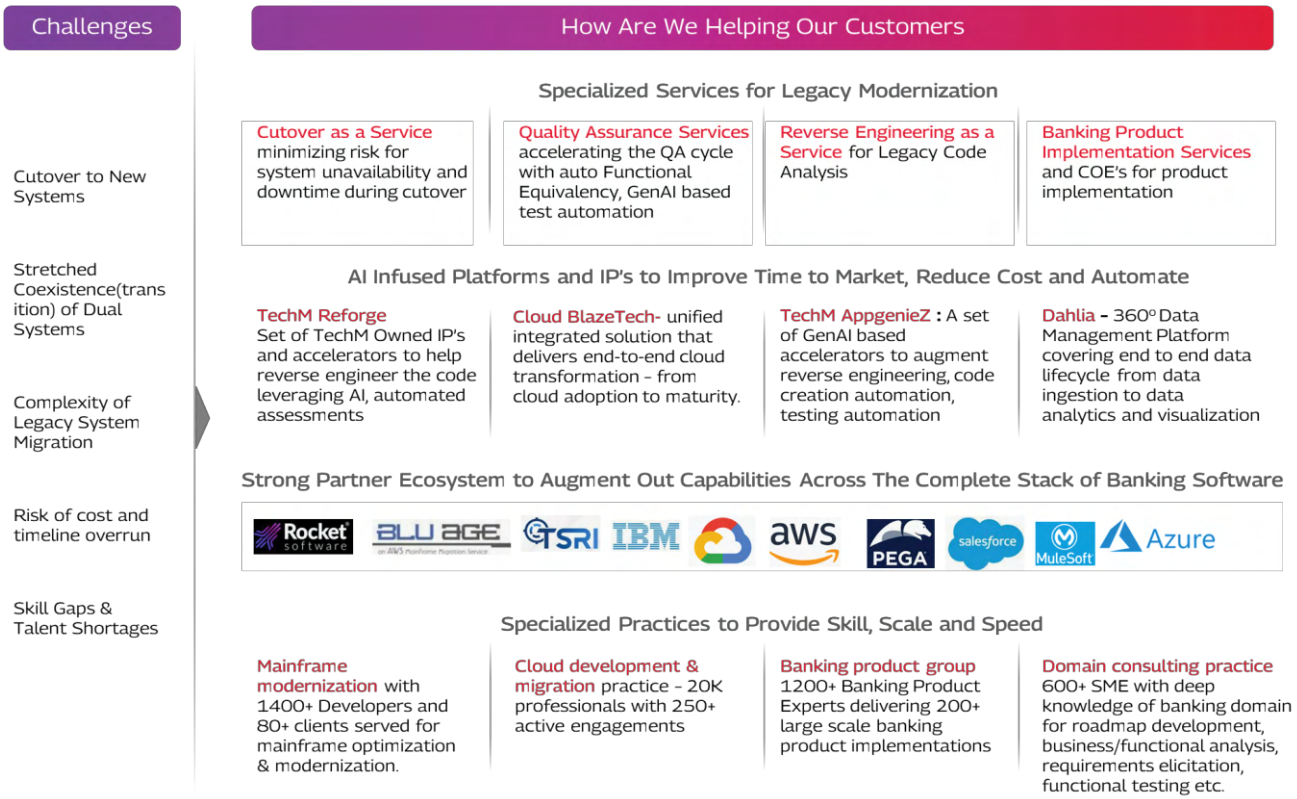
Legacy complexity is another big hurdle. Older systems often have poor documentation and hidden dependencies. This makes upgrades risky and more challenging to plan. Cost and time overruns are common. Modernization is a high-cost effort, and the return on investment often takes time. Delays and unexpected issues can further increase costs.

There is also a talent gap . Few professionals are familiar with both legacy systems and new technologies. This makes it hard to find people who can lead the change. The right strategy, strong partners, and proper planning can overcome these fundamental challenges.

How Tech Mahindra Is Helping Its Clients Navigate Modernization Challenges

Tech Mahindra has developed a specialized set of offerings, AI-powered platforms, IPs, tools, and a strong partner ecosystem to address our clients' challenges by modernizing legacy systems.

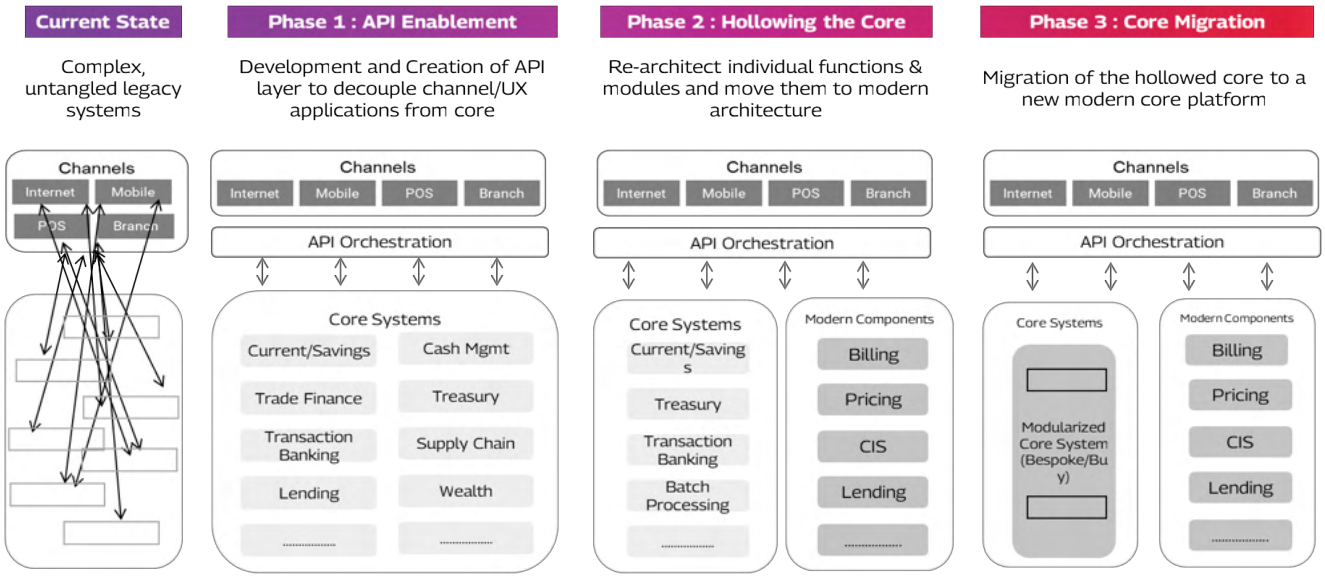
We are helping clients, learning from the experiences and growing our capabilities



Preferred and Practical Approach to Core Modernization

Core Modernization is a strategic transformation that requires careful planning and execution. One of our clients' most-followed structured approaches for effective modernization includes APIfication, hollowing out the core, and replacing residual functionalities with a modern core architecture. This layered phase-wise approach helps the client minimize the risk, ensure business continuity, and enable incremental value realization

Practical, Phase-wise Approach to Modernization (recommended by TechM)



- Each phase will have many steps (projects and programs).
- The phases may overlap
- Exact roadmap will depend on the client context and priorities

Key Case Studies

Several banks have successfully modernized their core systems, demonstrating the potential benefits of this transformation. The following examples show how this transformation can create real business value:

Abstraction: TechM developed 300+ APIs (and underlying microservices) for a large Canadian bank to decouple channels and core platforms. The APIs were designed with reuse in mind across multiple markets, striking a balance between standardization & customization. Pega-based orchestration enabled improved time-to-value for new services and products. Developing allied services such as cloud platform, DevOps, security, event processing, etc.

Comprehensive Modernization: A Global bank (headquartered in the UK) envisioned replacing its legacy payments platforms across 40 markets with a single, configurable, modern system. TechM developed a microservices-based cloud-ready platform for various schemes and ISO 20022, reducing the Turnaround time to less than 15 Seconds for complete payment processing. The event-driven messaging platform increased the cost efficiency and throughput by 70%.

Embracing the Modern Core for Future Success

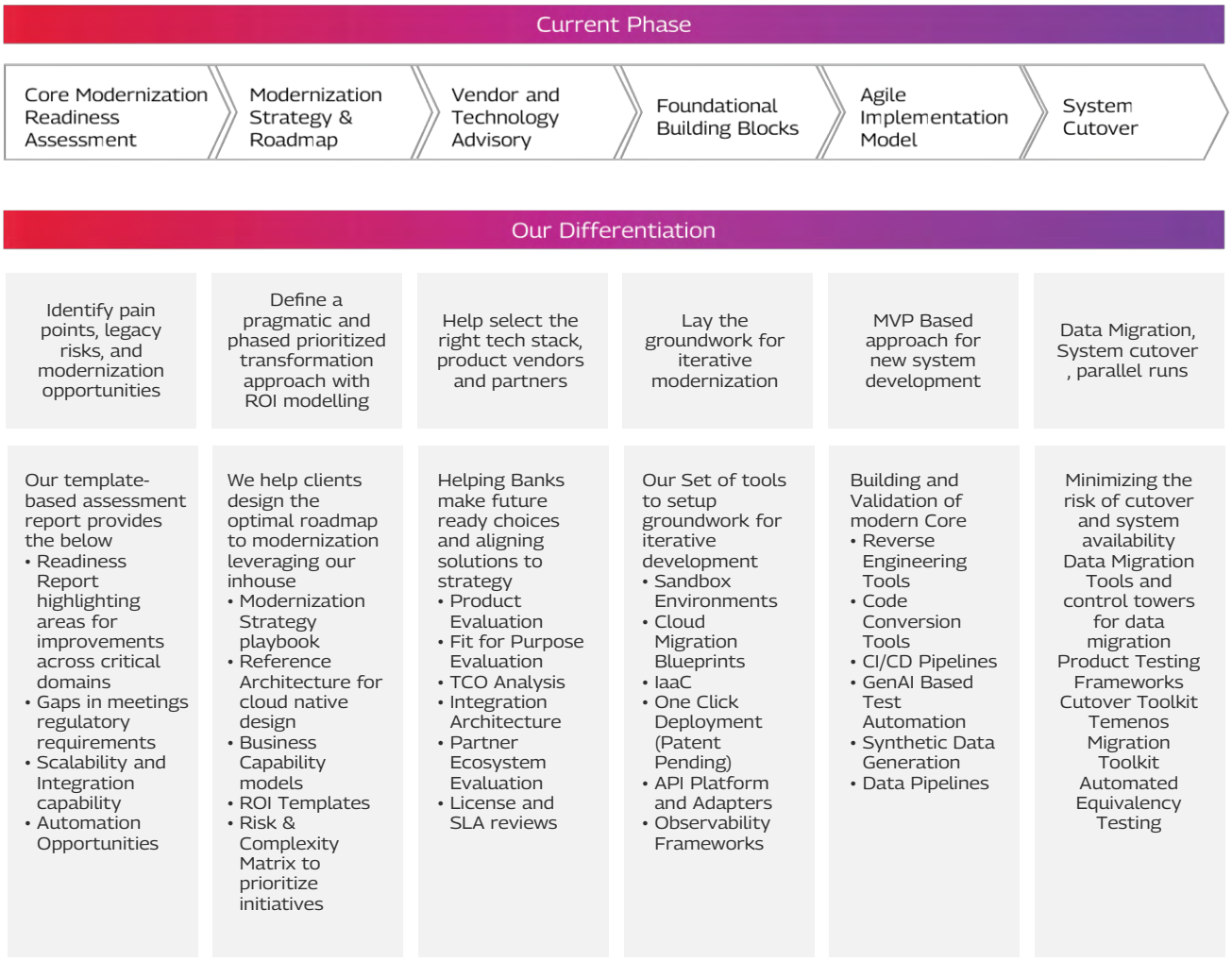
At Tech Mahindra, we help banks establish a robust digital foundation that fosters growth, innovation, and resilience. Our approach starts with understanding where the bank is on its journey. Some banks are exploring options. Others are testing new systems alongside legacy ones. Some have already begun large-scale transformations. We work with each client based on their goals, risk appetite, and timeline.

We focus on reducing complexity and speeding up results. Our tools and frameworks help deliver value quickly while minimizing risk. We guide each step with proven methods, whether through APIs, microservices, or cloud-native platforms.

We also ensure business continuity. Banks can keep serving their customers using a phased approach while modernizing in the background. With experience from global projects and a strong partner ecosystem, we help clients move beyond the limitations of legacy systems. We aim to enable faster innovation, stronger security, and better customer experiences built on a future-ready core.

Accelerate Your Modernization Journey with the Right Partner

Whether you're already on the path to core modernization or just getting started, we can meet you where you are. With the right mix of tools, talent, and experience, Tech Mahindra helps you move faster, deliver value sooner, and reduce transformation risk.



Authors

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Gopal Parasnis heads digital transformation for the BFSI vertical at Tech Mahindra. Gopal has around 25 years of experience in the IT industry and has been part of several large-scale digital transformation initiatives across banking and financial services clients. He has led and advised on several mainframe modernization journeys. He has a deep understanding of the latest industry and technology trends in space.

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Practice Head, Banking & Financial Services

Saurabh is a part of the Digital Transformation Office for BFSI at Tech Mahindra. He has around 20 years of experience in the IT industry and has executed large-scale API transformation projects for global banking clients. He has a deep understanding of the API landscape and technology trends.

Endnotes

Datar, M. (2024, March 11). The complete guide to core banking system modernization in 2025. WAU. https://www.wau.com/post/the-complete-guide-to-core-banking-system-modernization-in-2025

About Tech Mahindra

Tech Mahindra (NSE: TECHM) offers technology consulting and digital solutions to global enterprises across industries, enabling transformative scale at unparalleled speed. With 152,000+ professionals across 90+ countries helping 1100+ clients, Tech Mahindra provides a full spectrum of services including consulting, information technology, enterprise applications, business process services, engineering services, network services, customer experience & design, AI & analytics, and cloud & infrastructure services. It is the first Indian company in the world to have been awarded the Sustainable Markets Initiative's Terra Carta Seal, which recognizes global companies that are actively leading the charge to create a climate and nature-positive future. Tech Mahindra is part of the Mahindra Group, founded in 1945, one of the largest and most admired multinational federation of companies. For more information on how TechM can partner with you to meet your Scale at Speed™ imperatives, please visit https://www.techmahindra.com

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