

# The New Execution Model for Banking Core Modernization

How banks can reduce transformation risk while accelerating  
real-time, AI-ready operations

# Summary

Core banking modernization has been “in progress” for more than a decade. Yet for many banks, the hardest systems to change remain the ones that matter most: deposits, payments, lending, servicing, risk, compliance, customer data and general ledger integration.

Banks don't lack a modernization agenda. Most already know where they need to go: real-time payments, API-enabled banking, AI-assisted operations, cloud-native scalability, faster product launches, stronger resilience and more responsive regulatory reporting.

The traditional execution model breaks down in banking environments.

Banks cannot modernize like digital natives. They have decades of embedded business logic, product exceptions, merger-driven system duplication, batch dependencies, manual controls, regulatory scrutiny, data lineage requirements and operational processes that cannot simply be paused while technology catches up.

As a result, modernization programs often become slower, larger and riskier than the systems they were meant to replace.

This creates a core modernization trap: **Banks know what needs to change, but the way they attempt to change it introduces too much risk, cost and delay.**

The urgency has not changed. The ability to execute has.

AI can now be applied directly to the modernization lifecycle—automating system understanding, accelerating code transformation, generating documentation, strengthening test coverage and creating a more governed path from legacy systems to modern architectures. That is where our Sapient Slingshot belongs: as the execution engine for banking modernization, not just another planning framework or coding assistant.

It's a fundamentally different way to deliver modernization—faster, more predictable and with materially lower risk.

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# The Banking Modernization Paradox

**Banks need to modernize to support capabilities such as instant payments, open banking, embedded finance, AI-driven operations and personalized customer experiences.**

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Banks face a modernization paradox.

They are under pressure to support real-time banking experiences and data-driven operations—but the systems most in need of modernization are also the systems least tolerant of disruption.

Core banking platforms do not operate in isolation. They sit at the center of complex ecosystems: payments networks, customer channels, risk engines, fraud platforms, product processors, data warehouses, regulatory reporting systems, treasury functions and third-party service providers. A change in one system can create unintended consequences across dozens of downstream processes.

That is why banking modernization is different.

A retailer can redesign a commerce platform around speed and conversion. A bank must modernize around uptime, auditability, operational resilience, data integrity, regulatory compliance and customer trust.

This creates a persistent gap between modernization ambition and modernization execution.

Banks need to modernize to support capabilities such as instant payments, open banking, embedded finance, AI-driven operations and personalized customer experiences. But they must do so while preserving continuity across legacy products, servicing rules, controls, reconciliations, exception handling and compliance obligations.

The result is a familiar pattern: modernization programs start with strategic alignment but slow down when teams must prove what legacy systems actually do, preserve critical business behavior, validate every change and satisfy risk and compliance stakeholders.

The forces of change

The #1 priority for banks is to replace their core banking systems as they fail to meet business needs. The good news is that AI and Generative AI can be used to accelerate modernization and enable continuous innovation.



External:

Align to Customer Expectations

'Digital-first' engagement

Connected offerings

1:1 personalization

Rapidly evolving needs

Internal:

Fracturing Siloes

Slow & fragmented systems

Manual and costly operations

Lack of scalability

Slow change and go-to-market



## Why Traditional Modernization Breaks Down

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### 01 Banks cannot modernize what they cannot fully understand

Legacy banking systems contain decades of embedded logic: product rules, fee calculations, interest accrual methods, payment cutoffs, exception handling, overdraft treatment, servicing workflows, risk rules, posting sequences and regulatory reporting dependencies.

Much of this logic is undocumented. Some of it exists only in code. Some of it exists in manual workarounds. Some of it was inherited through mergers and never fully rationalized.

This creates a major execution barrier. Before a bank can modernize a system, it must answer questions such as:

- What does this application actually do?**
- Which downstream systems depend on it?**
- Which rules are still active, and which are obsolete?**
- Which controls or reports rely on this data?**
- Which product exceptions must be preserved?**
- Where are the operational handoffs, reconciliations and manual overrides?**

Traditional discovery methods are too slow and rely heavily on institutional knowledge. As subject-matter experts retire or move into new roles, banks risk losing the knowledge required to modernize safely.

## 02 Code transformation introduces functional and regulatory risk

Modernizing banking systems is not simply a translation exercise. Teams must preserve business behavior while moving from legacy languages, monoliths and batch processes to modern architectures, APIs, cloud-native services, and event-driven workflows.

Every transformation decision carries risk. A missed rule can affect balances. A misinterpreted dependency can break reconciliation. A poorly mapped data field can affect reporting. A change to payment processing can introduce customer, liquidity, fraud or compliance consequences.

As a result, manual rewrite programs become slow and expensive. Developers must interpret legacy behavior, redesign it for a modern environment and prove that critical functionality has not changed unintentionally.

## 03 Testing and validation become the modernization bottleneck

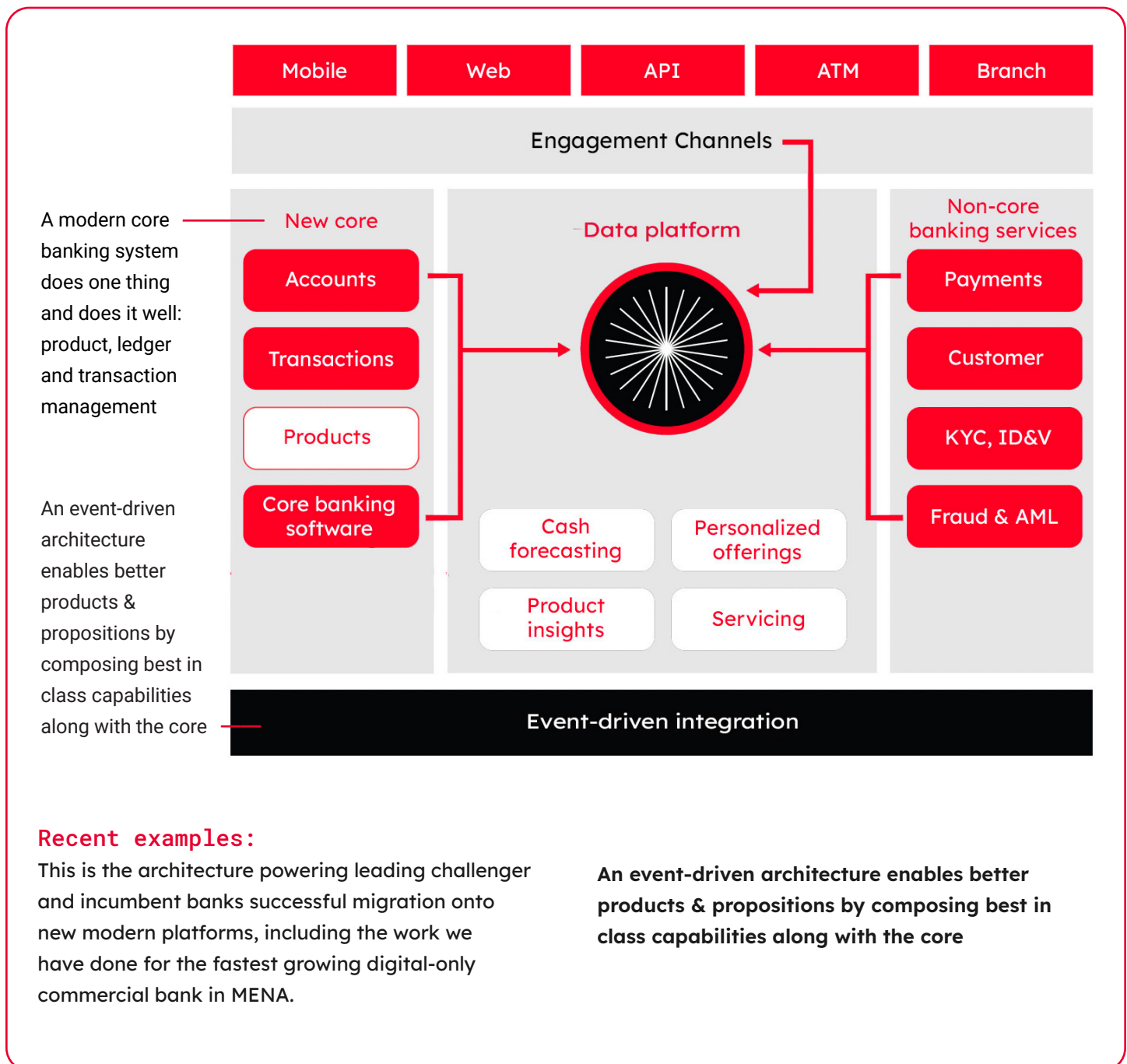
In banking, “close enough” is not acceptable. Modernized systems must produce the right outcome across standard transactions, edge cases, exceptions, historical product variants, regulatory scenarios and downstream integrations.

Traditional testing models depend heavily on manually created test cases, SME review and long validation cycles. Coverage gaps become difficult to detect, especially when legacy behavior is poorly documented.

The result is a testing bottleneck that slows delivery and undermines confidence. Banks may complete development work but remain stuck proving that the new system behaves exactly as required.

# How AI Changes Modernization Execution

The bank of the future puts data at the center, releasing it from the confinement of siloed systems and applications

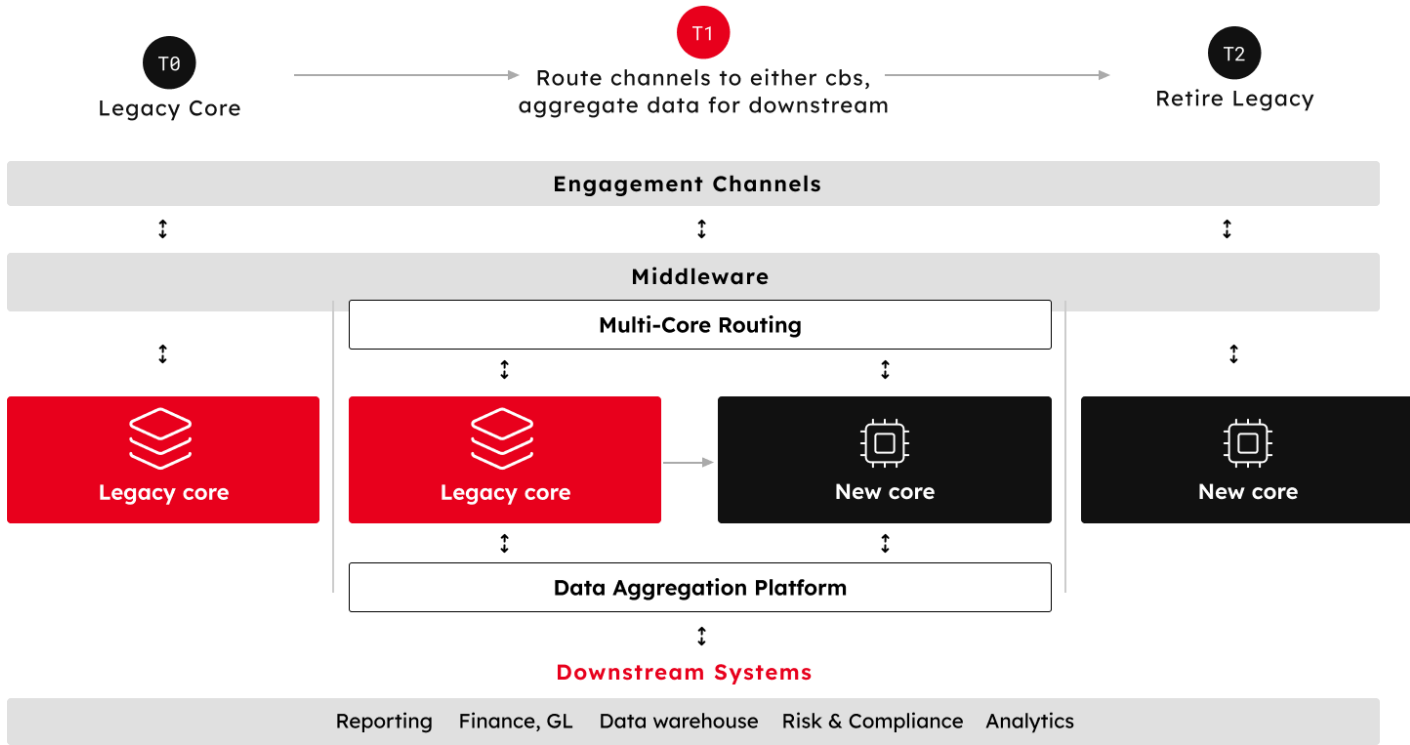


New progressive modernization approaches can de-risk the transition from old onto new platforms

KEY

Legacy Solutions

Strategic Solutions



New technologies and techniques can better enable this progressive transition from old to new platforms. Such approaches significantly de-risk the transition while also enabling earlier value unlocks from the new strategic platforms.

**Recent examples:**  
This pattern is being deployed by our incumbent banking clients globally, including the largest banks in the UK/EMEA, NA and APAC.

## The bank of the future is AI enabled

Our AI solutions not only accelerate modernization, but also reimagine how banks can best serve their customers and operate their business in the future, from automating manual steps in loan origination, to intelligently answering customer queries. The opportunities are endless.

### AI Transformation Roadmap

| Customer & Colleague Experience                                                                                                                                                                                       |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                            |                                                                                                                                                                                                                            |                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Assisted Channels</b><br><b>Intelligent Interaction Hub</b><br>AI-powered agents handle inbound enquiries, guide customers through complex journeys, and provide colleagues with real-time decision support.       | <b>Digital Self-Service</b><br><b>Frictionless Resolution</b><br>AI enables customers to independently resolve queries, manage accounts, and complete tasks through intuitive self-service channels without agent intervention. | <b>New-to-Bank</b><br><b>Seamless Digital Onboarding</b><br>AI accelerates KYC verification, document processing, and account activation, reducing onboarding time while maintaining full compliance standards.            | <b>Ongoing Servicing</b><br><b>Proactive Support Engine</b><br>AI anticipates customer needs, delivers real-time resolution through intelligent routing, and improves service quality continuously through feedback loops. | <b>Personalised Comms</b><br><b>Contextual Engagement</b><br>AI orchestrates tailored, timely communications across all channels, adapting tone and content to each customer's behaviour and lifecycle stage.            |
| Business Lines and Products                                                                                                                                                                                           |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                            |                                                                                                                                                                                                                            |                                                                                                                                                                                                                          |
| <b>Wealth</b><br><b>Intelligent Wealth Advisory</b><br>AI delivers hyper-personalised investment strategies, automates portfolio rebalancing, and surfaces actionable insights for wealth managers and clients alike. | <b>Insurance</b><br><b>Automated Claims Processing</b><br>AI streamlines underwriting, accelerates claims assessment, and detects fraudulent patterns to improve accuracy and reduce operational costs.                         | <b>Private Banking</b><br><b>White-Glove AI Advisory</b><br>AI augments relationship managers with bespoke financial insights, curated product recommendations, and proactive portfolio monitoring for high-value clients. | <b>Retail &amp; SME</b><br><b>Next-Best-Action Engine</b><br>AI identifies the optimal next interaction for each customer, surfacing relevant products, offers, and services at precisely the right moment.                | <b>Corporate</b><br><b>Relationship Manager Co-Pilot</b><br>AI equips relationship managers with real-time financial intelligence, deal structuring support, and automated client reporting across corporate portfolios. |
| Middle Office                                                                                                                                                                                                         |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                            |                                                                                                                                                                                                                            |                                                                                                                                                                                                                          |
| <b>Marketing</b><br><b>Precision Campaign Engine</b><br>AI generates targeted content, optimises channel mix, and measures campaign performance in real time to maximise marketing return on investment.              | <b>Strategy</b><br><b>Competitive Intelligence</b><br>AI synthesises market signals, competitor activity, and macro trends to surface strategic insights that inform leadership decision-making.                                | <b>Macro Research</b><br><b>Scenario Modelling</b><br>AI models economic scenarios and stress-tests portfolios against macroeconomic variables, supporting proactive risk and business planning decisions.                 | <b>Treasury</b><br><b>Cash Flow Intelligence</b><br>AI optimises liquidity positioning, automates cash forecasting, and enhances capital allocation across the organisation's treasury function.                           | <b>Risk</b><br><b>Real-Time Threat Detection</b><br>AI monitors risk exposures continuously, identifies emerging threats, and triggers automated controls to protect the organisation in real time.                      |
| Back Office                                                                                                                                                                                                           |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                            |                                                                                                                                                                                                                            |                                                                                                                                                                                                                          |
| <b>Technology</b><br><b>AI-Powered DevOps</b><br>AI assists engineers with code generation, accelerates testing cycles, and automates infrastructure management to modernise technology operations at scale.          | <b>Operations</b><br><b>Intelligent Process Mining</b><br>AI maps end-to-end operational workflows, identifies inefficiencies, and automates repetitive tasks to improve throughput and reduce processing errors.               | <b>Legal</b><br><b>Document Intelligence</b><br>AI reviews contracts, extracts key clauses, accelerates legal research, and monitors regulatory changes to ensure ongoing compliance across all jurisdictions.             | <b>People</b><br><b>Talent Intelligence</b><br>AI enhances talent acquisition, surfaces workforce insights, and personalises learning pathways to improve employee engagement and retention.                               | <b>Audit</b><br><b>Continuous Control Monitoring</b><br>AI continuously tests financial controls, identifies transaction anomalies, and generates audit-ready reports to strengthen regulatory compliance.               |

# How Slingshot Supports Modernization

## A shift in how modernization is delivered

The introduction of AI into the software development lifecycle is changing how modernization can be executed.

Rather than treating AI as a downstream capability—used for customer engagement or analytics—it is now being applied upstream, directly to the engineering process.

This changes three parts of the modernization process:

### Automated system understanding

AI can analyze legacy codebases at scale, mapping dependencies, identifying business logic and generating structured representations of how systems operate. This reduces reliance on manual discovery and accelerates the early phases of modernization.

### Generating modern architecture from existing systems

Instead of rewriting systems line by line, AI can generate modern code structures based on existing functionality. This includes translating legacy languages, creating microservices and aligning outputs to target architectures.

### Continuous validation throughout modernization

AI-driven testing frameworks can automatically generate and execute test cases, ensuring consistency and coverage throughout the modernization process. This reduces defects and increases confidence in delivery.

Together, these shifts make modernization more consistent, repeatable and scalable.

### Sapient Slingshot: Executing Modernization Differently

If modernization is an execution problem, banks need more than roadmaps, frameworks and coding tools. They need a structured approach that can help teams understand legacy systems, transform them into modern architectures and validate the results with the rigor banking requires.

Slingshot is designed for this shift.

Unlike standalone AI coding assistants, Slingshot brings together enterprise context, specialized SDLC agents, code generation, documentation, testing and validation into a coordinated modernization workflow. The current draft's strongest claim is that Slingshot pairs a persistent enterprise context graph with specialized SDLC agents to deliver accurate, fast, governed software; that should become the centerpiece of the banking argument.

For banks, this matters because modernization requires strong controls. Speed only creates value if teams can explain what changed, prove what was preserved, validate expected behavior, and give risk, compliance and technology leaders confidence in the path forward.

Slingshot helps banks execute modernization through three connected capabilities:

#### Understand

Slingshot analyzes legacy systems to extract business logic, map dependencies, identify system interactions and generate structured specifications. For banks, this can help expose the rules and relationships hidden inside core, payments, lending, servicing and risk platforms.

**Banking impact:** less reliance on limited legacy expertise, faster discovery, stronger traceability and a clearer baseline for risk and compliance review.

#### Build

Slingshot uses AI-driven pipelines to convert legacy functionality into modern architectures, generating production-ready code aligned to cloud-native and API-enabled patterns. For banks, this helps preserve critical business behavior while accelerating movement toward modular, scalable platforms.

**Banking impact:** faster transformation of highly connected systems, reduced manual rewrite effort, and a clearer path to capabilities such as instant payments, digital servicing, open banking APIs and AI-enabled operations.

#### Run

Slingshot automates testing, documentation and optimization so modernized systems are validated, maintainable and ready to scale. For banks, this is where modernization becomes more governable: test coverage, documentation and validation artifacts become part of the execution process rather than an afterthought.

**Banking impact:** greater confidence in releases, lower defect risk, improved auditability and more continuous modernization after initial deployment.

## HOW SLINGSHOT SUPPORTS MODERNIZATION

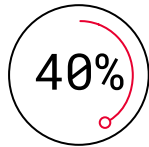
### What Slingshot delivers

Unlike point AI coding assistants, Slingshot pairs a persistent enterprise context graph with hundreds of specialized SDLC agents to modernize and deliver accurate, efficient and governed software.



#### Cost

Up to 50% reduction  
in modernization costs



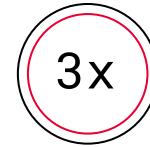
#### Productivity

40% productivity  
gains across  
engineering teams



#### Precision

99% code-to-spec  
accuracy, reducing  
migration risk

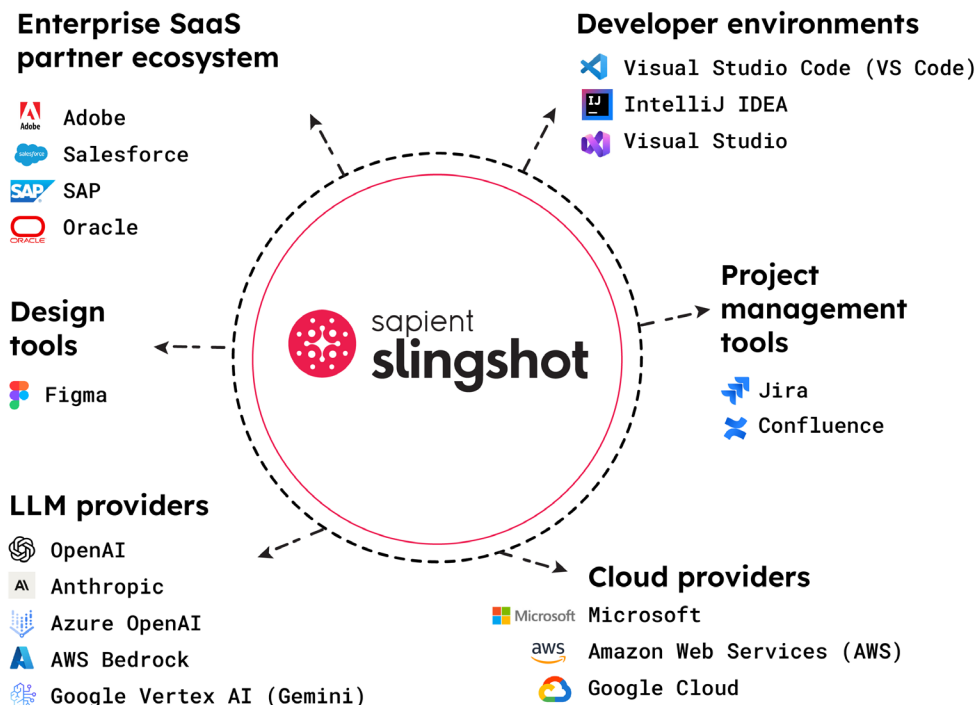


#### Speed

3x faster modernization  
compared to traditional  
approaches

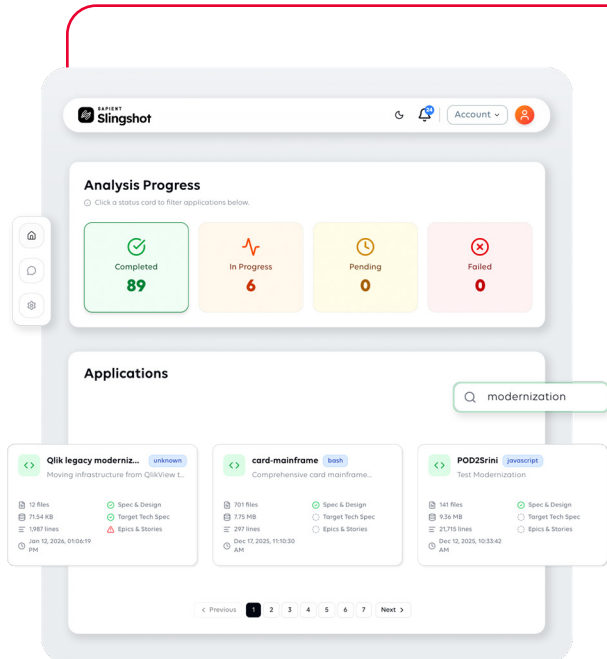
### How Slingshot is deployed

Deploy Slingshot as a secure SaaS in your private cloud, on-premises environment or through a hybrid managed service model. The platform integrates seamlessly with your existing development toolchain and workflows.



### Reframing the Modernization Lifecycle

With AI embedded into execution, the traditional modernization lifecycle can be redefined:



#### Discover

Automatically analyze legacy systems, codebases, dependencies, data flows and embedded business logic.



#### Prove

Generate documentation, specifications, dependency maps and validation artifacts that business, technology, risk and compliance stakeholders can review.



#### Transform

Generate modern code, APIs, services and target-state architecture patterns while preserving required business behavior.



#### Validate

Create and execute test cases across normal flows, exceptions, regulatory scenarios and downstream dependencies.



#### Scale

Deploy incrementally by domain, product, rail, or capability—reducing big-bang risk while continuously improving documentation, code quality and test coverage.

This makes the Slingshot approach more practical for banks **because it emphasizes control alongside speed. It says: move faster because the process is more controlled.**



## Where Banks Can Apply This First

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### **Real-time payments enablement**

Legacy payment environments often depend on batch windows, fragmented payment rails and downstream reconciliation processes. Slingshot can help banks understand existing payment flows, identify dependencies, modernize payment services, generate test coverage and support the move toward 24/7 payment operations.

### **Core deposit modernization**

Deposit systems carry complex product rules, interest calculations, fee logic, posting sequences, statement processes, servicing workflows and compliance requirements. Slingshot can help extract and document embedded logic, accelerate service decomposition and validate modernized functionality against legacy behavior.

### **Lending and servicing transformation**

Loan origination, decisioning, servicing, collections and payoff processes often rely on legacy rules and manual exceptions. Slingshot can help map these rules, generate modern service patterns and improve test coverage across complex customer and regulatory scenarios.

### **Post-merger platform rationalization**

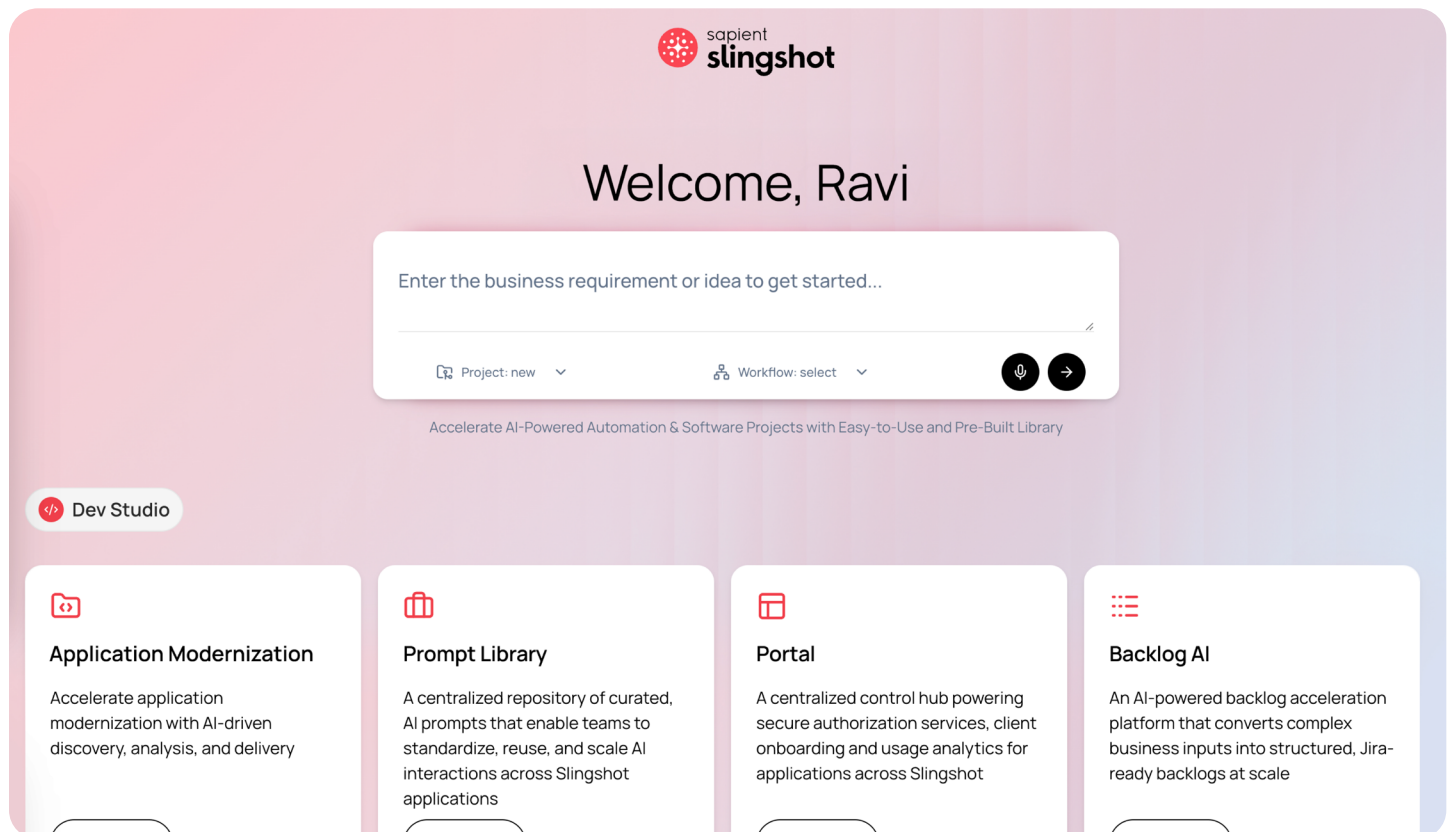
Bank M&A often creates duplicated systems, inconsistent product rules, overlapping data stores and redundant operational processes. The uploaded draft already notes that M&A can create duplicative platforms and systems across the enterprise. Slingshot can help compare legacy estates, identify overlapping functionality, document differences and support incremental consolidation.

## Regulatory reporting and data modernization

Regulatory reporting depends on lineage, data quality, definitions, controls and repeatability. Slingshot's system-understanding and documentation capabilities can help expose how data moves across systems and where modernization could reduce manual reconciliation and reporting risk.

## AI-ready banking operations

Banks want AI-enabled servicing, fraud operations, compliance workflows and employee productivity. But these use cases require trusted systems and governed data. Slingshot can help modernize the underlying platforms and logic needed to make AI adoption easier to implement and manage.



# Global Bank Accelerates Core Modernization with Slingshot on Google Cloud

Turn legacy COBOL into clear, audit-ready specifications with Slingshot—up to 85% less effort and faster delivery.

## Challenge

A leading global retail and commercial bank needed to modernize core banking systems supported by more than 300 critical batch feeds. Decades of business logic were embedded across nearly three million lines of COBOL, making system behavior difficult to understand and modernization difficult to scale.

Traditional code-to-specification efforts relied heavily on manual analysis, requiring teams to spend weeks tracing interconnected programs to validate business rules and assess change impacts. The bank also needed clear traceability between legacy code and future-state designs to support compliance and regulatory review.

## Solution

Using Slingshot on Google Cloud, the bank analyzed nearly three million lines of COBOL and applied Gemini-powered Dynamic Business Rule Extraction (DBRE) to identify and document the business logic embedded within the code.

Slingshot converted legacy programs into structured, reviewable specifications, including business-readable documentation, process flows, field mappings and traceable requirements. The resulting specifications provided a clear link between legacy code, extracted business rules and modernization designs, while generating more than 200 implementation-ready backlog items to accelerate delivery planning.

### Results

The bank gained greater visibility into legacy system behavior, reduced operational and compliance risk, and established a faster, more predictable path to modernization.

**95%**  
specification  
accuracy  
through DBRE

**35 to  
5 days**  
analysis time  
per feed

**70–85%**  
reduction in code-  
to-specification  
effort

**3 million**  
converted into  
verified specifications  
in **8 weeks**

**50%**  
reduction in  
specification-to-  
design effort

**200+**  
implementation-  
ready backlog  
items generated

## Publicis Sapient is here to help

Core modernization will remain a critical priority for banks as they adapt to a digital-first, AI-driven landscape. The challenges associated with legacy systems are well understood, and the need for transformation is not in question.

What has changed is how banks can execute modernization programs.

With Slingshot, banks can shift modernization from a high-risk, manually intensive program to a more automated, governed and repeatable approach.

### **Faster modernization of high-value banking capabilities**

Accelerate delivery across payments, deposits, lending, servicing, data and regulatory workflows.

### **Reduced dependency on scarce legacy expertise**

Capture embedded business logic and system behavior before institutional knowledge disappears.

### **Lower transformation risk**

Improve traceability from legacy logic to modern code, documentation and validation artifacts.

### **Stronger compliance and audit readiness**

Generate documentation and test evidence as part of the modernization workflow.

### **Improved engineering productivity**

Reduce manual discovery, repetitive coding and validation effort across modernization teams.

### **Better support for real-time and AI-driven banking**

Create modern, modular, well-documented systems that can support instant payments, open banking, AI operations and API-enabled products.

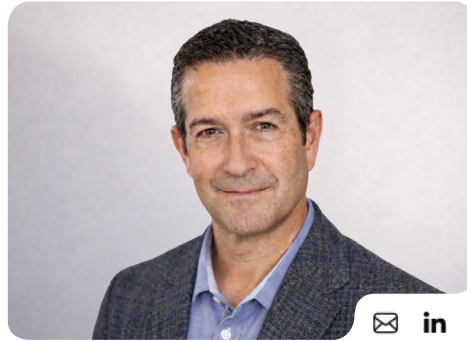
### **Faster delivery of business value**

Move away from multi-year, big-bang transformation toward domain-by-domain modernization with measurable business outcomes.

# Contact Us



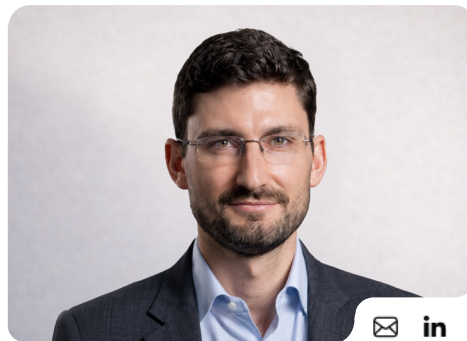
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