



Transforming the legacy payments landscape with cloud technologies



Abstract

Financial institutions are fast beginning to realize that payment transformation initiatives should be underpinned by the modernization of core payment systems. A holistic look at the end-to-end payments value chain—involving identifying ways to simplify or isolate the core system of records to enable innovation and connect to new networks to transform payments—is key to successful payment transformation. However, financial institutions will need to identify and adopt the right transformation approach depending on factors like size of operations, line of business, existing IT footprint, and global presence. This white paper presents a target payment operating model that banks can implement to meet their goals and prevent disintermediation from new entrants. It also presents different approaches, along with the appropriate cloud model, that banks can adopt to shift to the target payment model.

The need for payment transformation

Rapid customer embrace of anytime, anywhere digital payments and emerging trends in technology adoption have brought to the forefront the need for payment transformation in the banking and financial services industry. In addition, new entrants are disrupting the payment landscape by introducing collaborative digital ecosystems that deliver exceptional value to customers, further underscoring the need for payment modernization. Accomplishing this will require financial institutions to focus on innovation and payment regulation in equal measure. To this effect, financial institutions have realized that the key drivers for payment modernization are multi-layered (see Figure 1) and not mutually exclusive in nature.



Bigtechs, fintechs, ecosystems, non-banks and challenger banks

Figure 1: Multi-layered drivers for payments modernization

Customers expect ubiquitous, convenient, frictionless, and real-time payments. Corporate banking customers are also seeking similar innovations ranging from multichannel access, personalization, and seamless, less expensive, digital cross-border payments. Global regulators have brought in a series of initiatives such as payment services directive 2 (PSD2) and open banking that mandate open data sharing and application programming interface (API) frameworks to drive innovation in the way people make and receive payments. Fintechs have launched innovative payment apps that offer insights on spend patterns and available options, and incumbent banks too, will need to follow suit to retain customer mindshare and market position. Achieving this will require rapid digitalization and transformation of payment platforms as well as a shift to cloud models, given the ability of cloud technologies to enable innovation through open and flexible architecture, enrich performance, enhance agility, scale, and availability, as well as drive cost efficiency.

Envisioning the target payment model

Delivering anytime, anywhere frictionless payment experience through an accessible, scalable, and boundaryless environment will require banks to define a next gen payment strategy along with the architecture roadmap. In our view, banks must modernize the existing payment hub by implementing a single holistic payments platform (see Figure 2) supported by a multi-cloud or a hybrid cloud architecture. Such a model will help banks strengthen digital channels, middle office, and back-end systems, and enable integration of API end points. In addition, it will facilitate the evolution of collaborative banking-as-a-service (BaaS) and open banking models to achieve interoperability and seamless integration of banking ecosystems, including channels, partners, vendors, fintechs, and regulators, among others.



Figure 2: Target payment operating model

The rocky path to payment modernization

Large banks have traditionally viewed payments as a cost center rather than a growth generator leading to a management split across retail and corporate banking, resulting in expensive and redundant siloed systems, separate budgets, and fragmented innovation. Previous payment

transformation projects primarily focused on compliance and operations thereby falling short of realizing their core objectives. Legitimate concerns about APIfication, ecosystem leverage, and the fear of being disintermediated by fintechs and bigtechs has been another challenge. Small and midsize banks, on the other hand, neither have the big budgets needed for big ticket transformation projects nor can they afford to be left behind. From a technology standpoint, while banks are increasingly placing more applications on the cloud, security and reliability concerns persist, especially with regard to mission-critical applications.

Overcoming the challenges

Banks are now beginning to realize that payment modernization initiatives are not limited to a onetime fix or merely enhancing customer-facing applications. What is needed is a consistent focus on a continuous transformation approach that recognizes the role of core systems in driving holistic and value-driven payment transformation.

Given that erstwhile transformation models are more conventional in their approach and therefore ineffective, financial institutions must embrace compelling and value-driven modernization practices that better align with business needs and support long-term digital transformation objectives. To achieve this, banks must revisit legacy payment platforms with unsustainable maintenance costs and facilitate innovation at speed.

The critical factor in defining a payment strategy is determining fit-for-purpose models and meeting business expectations in predictable time frames. In our view, banks must adopt one of five distinct payment modernization strategies or a combination (see Figure 3) depending on their existing payments architecture, systems and processes, business objectives, and modernization objectives, to move to the target payment model (see Figure 2).



Vendors (Incumbents)

Payment instructions

Payment formats

interfaces



Complete replacement

Figure 3: Payment modernization strategies

Adapters

ACH

Wire

RTGS

RTP

Cross border Instant

Bank

Connectivity

to clearing and

settlement networks

Each model comes with diverse features and is suitable for different types of financial institutions.

Community (Banks, FIs, industry)

Isolation approach

This approach is more suitable for banks with complex operations and limited time, resources, and risk appetite. Simplifying existing core systems by enhancing the peripheral architecture to support digital channels must be the main focus. These capabilities extracted from the existing core payment systems come with the potential for reuse as general functions across the bank. Examples include payment and relationship pricing, product bundling, and geography-specific regulations that can be either externalized or centralized. Being a short-term strategy, this approach yields limited value since the modernization of the core platform is deferred resulting in risks due to the adoption of bimodal (two-speed) IT. However, this approach lays the foundation for long-term modernization and enhances IT delivery.

Value chain approach

This model envisages a holistic look at the payments value chain from initiation to clearing and settlement and involves a phased transformation approach to enable innovation based on the business objectives. This approach is suitable for large banks and investment institutions looking at end-to-end transformation of business functions to unlock value. Typical use cases include migrating from legacy payment messaging formats to the ISO 20022 global standard which will impact onboarding channels, core systems, payment hubs, and network interfaces in the payment value chain. While this approach enables end-to-end modernization leading to streamlined value chains, the flip side is the need to manage legacy costs until all the core platforms are modernized resulting in limited efficiency gains due to phased deployments.

Progressive modernization

This strategy focuses on a shift to a new core payment system and envisages the coexistence of both new and old payment engines in the short-term. This model envisions building digital valueadded services on the new core followed by gradual migration along with the data. It typically starts with a proof-of-concept or minimum viable product (MVP) to test the feasibility. This approach is challenging in terms of simultaneously maintaining both old and new core payment systems, resulting in increased integration complexity. Banks looking to embrace ecosystem models underpinned by API frameworks to enable the launch of new payment products and services must consider adopting this approach. In addition, large banks with legacy mainframe systems and significant intellectual property and differentiation must consider this approach.

Orchestration approach

Inspired by the coreless bank approach, this model enables plug-and-play by leveraging microservices and API frameworks. Built on a domain-centric, API-driven, componentized cloud native architecture, this model introduces interoperability thereby empowering banks to enable new business services and lays the foundation for open banking. Key use cases include systems of records (SORs) spanning debit and credit accounts and product and pricing systems. This approach is suitable for large global and corporate banks with a diverse IT landscape due to multiple mergers and acquisitions.

Complete replacement

This approach helps banks future-proof their technology by adopting a cloud hosted payment-asa-service model and realize benefits across parameters like time-to-market, scale, performance, availability, resilience, and geographic presence. This model is suitable for small and mid-size banks, with minimal IT footprint, looking to quickly implement multi-product, multi-channel, and multicurrency capabilities. The model helps banks consolidate various payment engines and replace them with a cloud enabled software as a service (SaaS) based unified payments hub. Banks willing to partner with a cloud provider for the payment platform, technology and operations, value-added services, and branding and customer service can opt for this model.

Table 1 gives a quick snapshot of the various models along with the value proposition across different types of banks.

Modernization strategies	Time to value	Complexity	Type of banks	Cloud adoption model
Isolation approach	Low	Low	Large banks	Hybrid or multi-cloud, custom orchestrated solution
Value chain approach	Low	Medium	Corporate, investment institutions	Hybrid or Multi-cloud, platform based, managed services
Progressive modernization	Medium	Medium	Large global banks, corporate banks	Hybrid or Multi-cloud, cloud native bespoke solutions
Orchestration approach	Low	Medium	Large banks, corporate banks	Hybrid cloud, open API based interoperable solution, coreless banking principles
Complete replacement (big-bang or rip and replace)	High	High	Small and medium sized banks, regional and community banks	SaaS based (payment-as- a-service), platform based, managed services

Table 1: Payment modernization strategy for different types of banks

Conclusion

Multi-layered drivers encompassing regulatory, technological, competition, and customer experience are creating an urgent need for payment transformation. Payment transformation initiatives currently underway in many global financial institutions have made it clear that a single modernization strategy will not be able to deliver the desired outcomes. In our view, banks must realize that there is no silver bullet for payment transformation and embrace a continuous transformation approach leveraging core modernization principles and a combination of different models. Needless to say, banks must act quickly to retain relevance, keep pace with fintechs, and avoid disintermediation.

About the author

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Ravi Satyanarayana is a lead solution architect and senior consultant with the banking technology advisory group (BTAG) of TCS' Banking, Financial Services, and Insurance (BFSI) business unit. He has over two decades of IT consulting experience covering cloud transformation spanning technical advisory, cloud strategy, technology and business landscape assessment, and roadmap definition. Ravi specializes in payments, banking ecosystems, platforms, open architecture and is an AWS certified solution architect. Ravi holds a bachelor's degree in Engineering from M.S Ramaiah Institute of Technology, Bengaluru, India.



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