

IDC PlanScape: Core Banking Modernization to Meet Changing Demands

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IDC PLANSCAPE FIGURE

FIGURE 1

IDC PlanScape: Executive Summary of Core Banking Modernization to Meet Changing Demands



Source: IDC, 2021

EXECUTIVE SUMMARY

Digital innovation is disrupting nearly every industry including banking. Customers today expect banks to provide a personalized approach to banking with the same level of customer experience they routinely get from leading-edge retailers, social media, and fintech competitors to traditional institutions. Banks are experiencing customer attrition in areas like lending and payments and will begin losing even core deposit customers unless they can start providing innovative capabilities and services that improve customer experience in this new digital era.

Modernization is also critical to building resiliency, scalability, and efficiency into core systems. Cloud platforms are being adopted by banking institutions worldwide, even for critical workloads like core banking. These modern platforms are scalable, resilient, and cheaper to operate, protecting against disruptions, unexpected surges in demand, and lowering the cost of operation. Most banks' core banking operations have yet to be optimized with new applications and technologies. Rather banks create layers of customization atop legacy systems to add functionality, leaving them subject to risk and liability from aging equipment that cannot support modern capabilities. Updates to legacy systems require experts in outdated programming languages such as COBOL. That talent pool is shrinking, making internal help difficult to find and systems that are costly to maintain.

Even so, many banks are still reluctant to modernize their core platforms and applications because of the risks at stake. Core systems are central to their entire banking architecture, so any snag in the upgrade may cause a shutdown in banking channels or overall operations. Until recently, banks could only conduct a total overhaul replacement to their core using a big bang approach involving setting up a new core side by side with the old core and "cutting over" the bank's database and integration points to the new platform. Today's modern core architectures enable the banks to consider more options to modernize their core banking, including:

- The traditional "big bang" approach
- Establishing a greenfield digital bank with a new core and gradually move customers to the new core
- Progressive transformation of the legacy platform by moving business functionality to the new core based on priorities set by the enterprise.
- Variations of these strategies

Risk is greatest when modernization requires a total replacement in a big bang approach, which is effectively a "bet the bank" approach, no matter how much planning is involved. But for smaller institutions, with simple offerings and systems, the big bang can be a viable approach. For larger and/or more complex environments, banks can opt for a less daunting, incremental approach. A more strategic, incremental plan can take two forms. One way is to establish a digital bank with a new, modern core that runs alongside their legacy core banking systems and progressively move customers from the legacy platform to the modern system. Another is a progressive transformation to core modernization by pulling functionality out of the legacy core, based on business priorities, and moving these functionalities to modern architectures (e.g., microservices in an application programming interface [API]-based environment) over time. While this approach can extend the overall time it takes to completely modernize the core infrastructure, the positive trade-off is a significant reduction of risk.

This IDC PlanScope helps organizations justify investment in core banking modernization, provides insight into different approaches to modernize core banking, and provides process-related advice for these deployments.

"Now is the time for banks to modernize core banking," says Jerry Silva, vice president, IDC Financial Insights' Worldwide Banking Digital Transformation Strategies program. "Between modern technology approaches like microservices and APIs and the use of cloud platforms ensuring scalability and resiliency for the bank's back office, banks would do well to start the journey to core system modernizations without delay."

Most banks around the world rely on aging legacy systems that cannot provide the real-time transactions or personalized services that customers demand more than ever and that they receive from both banking competitors and other industry firms. A modern core is a business enabler using the latest technology to drive better banking experiences with personalized customer engagement and faster response to market changes with new products and services, expanding revenue opportunities for the bank.

WHY IS CORE BANKING MODERNIZATION IMPORTANT?

Many banks' core systems are based on 30- to 40-year-old technology. As customer demands changed over the years, banks accommodated these changes by adding other legacy platforms and customizing them with work-arounds and point-to-point integration to add products and services. Disparate systems also required disparate data platforms, causing difficulty in cross-platform collaboration to serve customers better and creating complexity when problems arose.

That level of increasing complexity has negative effects on adjacent critical functions like compliance, risk, and security. This historically disjointed architecture is harder to protect against the increasing threats of fraud and cyberattacks like ransomware. The shift toward ecommerce and digital engagement with new marketplace platforms accelerated by the COVID-19 pandemic has caused a sharp uptick in fraud that banks need to address while balancing customers' need for frictionless digital experiences.

All of these legacy core systems, with few exceptions, are batched based, meaning that account settlement is done overnight. In itself, the memo post processing that allowed banks to simulate real time was enough to fulfill the needs of yesterday's customer, but today's focus on a real-time and holistic approach to the customer experience is straining the ability of legacy systems using memo posting to respond to market forces.

Taken together, the current state of legacy core platforms, particularly if the bank continues to build on top of this shaky foundation, will quickly add to the enterprise risk to the organization, ultimately forcing a reactive need to modernize.

For these reasons and more, core banking modernization is critical to overcoming the complexity the industry has built over the years that has led to high costs, fragile infrastructures, slow product innovation, and increasing difficulty in finding skills to maintain legacy platforms. The benefits of core banking modernization are clear:

- **Costs:** First and foremost, the bank will benefit from lower costs associated with maintenance, innovation, and operations, particularly in the event of core deployment on cloud.
- **Resiliency:** With aging infrastructure comes loss of resiliency. When problems occur, the skills necessary to resolve those issues on legacy platforms become harder to find and retain. Modern core platforms, particularly those deployed in the cloud, benefit from proven business continuity and resiliency practices.

- **Scalability:** The fixed costs and investment size makes it impossible for banks to scale their core processing up and down drastically in legacy environments and when necessary. Cloud has given the industry the scalability to support large swings in demand as needed — particularly useful in times of disruption.
- **Real time:** Although banks can offer simulated real time through memo posting, the world is driving toward scales of real-time customer experiences that will make it arguably impossible for banks to deliver future expected experiences without moving to "real" real-time capabilities.
- **Agility:** Modern banking platforms are based on hardware and software stacks that are orders of magnitude easier to develop, deploy, and operate than systems of the past.
- **Security:** Modern attack vectors require modern (agile, flexible, AI-based) tools to ensure the protection of the bank's data and operations. It will soon become difficult and/or costly to support modern safeguards on legacy technologies.
- **Compliance:** Modern banking systems approach data from a holistic, enterprise perspective. Adding new functionality to the bank's capabilities doesn't require IT to create yet another data stack to support new products. This means that regulatory compliance, especially from a data perspective, becomes easier to govern and manage.
- **Open banking:** Although still in the stages of looking for opportunities and use cases, it is hard to argue against the possibility that banks will eventually work in collaborative industry ecosystems that blur the lines of services between different organizations but together create seamless experiences for the customer. Modern architectures are necessary to support such ecosystems.
- **Risk:** Finally, as a result of all of the aforementioned benefits, risk in all areas from credit risk to operational risk is improved through modern technologies, including the core system.

It should be said that core banking modernization should not be viewed strictly as an IT project to transform its digital infrastructure for the future on the 3rd Platform. Banks should consider modernization as a new foundation to improve their products and services, innovate "outside the box," find new customers and markets, and create operational efficiencies for the bank and its customers. This makes modernization significantly more valuable from a business perspective.

Banks that delay core banking modernization risk customer attrition to more convenient and ubiquitous "digital first" and embedded banking services, whether from a modernized traditional competitor, a fintech competitor, or a challenger bank that can provide the personalized experience customers now expect. Resiliency will be tested more often, costs will rise as skills become more expensive to find and retain, and overall risk and compliance will be challenged.

WHAT IS CORE BANKING MODERNIZATION?

Core banking refers to back-office processing of the customer's financial needs such as deposit accounts, payments, loan origination and servicing, product pricing, interest calculations, and general ledger. Customer, account, and product data typically resides in the core data architecture as well. Many core systems go back 30 years or so from their original design, many of those being heavily customized in the intervening years. This is a simple definition of what is a complex collection of functionality and technologies that vary from bank to bank.

IDC defines core modernization to mean the creation of a modern, digital architecture in which business functionalities are supported by modern development and deployment paradigms. To be sure, this does not imply that, at the end of the day, all components of the legacy platform are replaced

or removed. The overall architecture could, and perhaps should, allow for some aspects of legacy platforms to participate (again, using modern interfaces like open API) in the overall digital infrastructure.

The next generation of core banking systems requires cloud-native, open banking platforms to achieve the agility and scalability needed to respond to changing market demands. Workloads like digital lending origination, for example, can be split up into discrete microservices, running in a container environment, that are scalable in the cloud. Each discrete service communicates through application programming interfaces. If a problem or change is needed in one microservice, it is isolated for a quicker fix while the rest of the system keeps running. Independent and scalable use of microservices enables more frequent deployment.

While making the case for modernizing the core platform becomes easier every year, executing on a modernization initiative is not trivial or without risk. In times past, the only approach to modernization was a "big bang" strategy that had the bank standing up a modern platform next to the old one and picking a weekend over which the data, including customer data, would be transferred to the new system. The bank would flip the switch to turn the new system on and hoped it worked without problems. This approach would fail often enough to create a stigma on core modernization that persuaded many banks to keep applying patches to the legacy platform instead.

So, how can banks modernize core banking without risking a critical operational disruption? Today, banks have more options than to simply cut over their entire operations at once in a big bang approach. IDC identifies three major options for core banking modernization: progressive transformation, building a greenfield digital bank, or the big bang approach — and hybrid models consisting of more than one of these approaches. The best approach for each bank will depend upon the size of the bank, complexity of existing environment, cost, and the risk appetite of the specific bank.

Options for Core Banking Modernization

Progressive Transformation

Progressive transformation is the movement of specific business functionality from legacy platforms to modern platforms slowly over time. This approach allows banks to identify key business functions that are the highest priority to modernize. A bank can take an application and reinvent the customer journey by breaking it down into designated tasks to rebuild iteratively as microservices that can share resources, deploy those in a modern infrastructure (mainframe, server cloud, etc.), and decommission the workloads in the legacy platform.

This incremental approach requires an ongoing commitment and investment and may take 5 to 10 years or longer to complete, allowing the banks to build their architecture around the most important customer journeys while reducing the overall risk of core modernization. This approach works only as long as the legacy system remains viable. In this approach, core banking modernization is an ongoing activity, progressively "hollowing out" the core by adding modern, microservices-based architecture around the legacy systems to continually refresh core capabilities. This approach represents a distributed cost model and minimizes risk exposure while modernizing a bank's core business capabilities over time.

Interestingly, this approach lends itself to a hybrid modernization strategy wherein there may come a point in time when some workloads, general ledger perhaps, remains on the legacy platform due to performance, risk, or resiliency characteristics, for an extended period after most other functionality has been modernized.

Greenfield Digital Bank

Another option for a bank to modernize its legacy systems is to establish a greenfield digital bank as a standalone unit that leverages a new modern core with cloud-native technology for real-time transactions, typically under a new brand. The digital bank operates independently from the bank's core business, serving a separate customer base. The new core will offer cloud-native capabilities that legacy systems cannot provide, enabling the bank to test new products and services.

Once proven stable and successful, the bank can slowly migrate more functionality and its traditional customer base over to the new core. (The "new" brand created could be retired at that point or kept.) This greenfield bank strategy is a faster approach to modernization, instantly transforming into a digital bank. Yet it is more costly and riskier than progressive transformation, though certainly less expensive than a full core conversion with less risk of disruption to normal business operations. A notable success story is Goldman Sachs' launch of the company's Marcus digital bank, well positioned as a tech-savvy digital-first brand whose retail deposits reached \$97 billion in 2020.

Big Bang Conversion

A full core replacement to a modern cloud-native platform in a big bang conversion is a bank's riskiest option. However, for smaller, less complex banks, this is still a viable option to consider. In many of these cases, the core is provided to the bank by a managed services partner that assumes a large part of the responsibility for core modernization. In some cases, "core pre-modernization" could also be applied to a bank running a core banking system that is several versions behind the latest iteration. This pre-modernization could be mandatory to address procedural or systemic requirements as a half-step before the legacy core is replaced. The benefit of a big bang approach is that the total cost of modernization is more certain than in a longer-term progressive approach. The new core is entirely functional after the cutover, and, if a managed services provider is involved, is being supported by a firm with long tenure and experience in this kind of modernization approach.

Another scenario in which a bank may decide to use a big bang approach is the institution with a homegrown core banking system that acutely suffers from all of the disadvantages and limitations of aforementioned legacy core platforms.

Larger banks rarely opt to conduct a transformation of this magnitude because the risk of disruption is too severe. Occasionally, banks may be forced to implement a big bang cutover within a specific line of business (like lending) to retire their legacy systems and urgently migrate to a new platform for regulatory issues or other reasons. In any case, a big bang conversion requires a good deal of planning beforehand to minimize the risk of disruption and curtail any foreseen snags in the process.

Simple Complexity

In all of these cases, the resulting core architecture may not, and probably will not, look anything like the outgoing or remaining legacy platform. While simplifying many aspects of core system operations, the transformation to microservices and containers, using APIs to interconnect, often forces institutions to modernizing other nontechnology aspects of their operations to align with the new digital infrastructure. Container management, cloud management, security, development operations, data governance, operational risk, and other skills required by modern infrastructures may not currently exist at the bank.

WHO ARE THE KEY STAKEHOLDERS?

As core banking forms the heart of a bank's operations, nearly every leadership role at the institution is affected by or has influence over core banking initiatives. Table 1 depicts the most common roles involved in a core banking modernization project and the benefits they expect from it.

TABLE 1

Key Stakeholders in Core Banking Modernization

Role	Responsibility	Benefit
CEO/board	Overall health and resilience of the institution	Low-risk solution that can yield greater agility and responsiveness to meet changing customer demands and operational efficiency that leads to growth and profitability
CIO	Hardware and software infrastructure for core banking and partner integration	Greater resilience, reliable system without system degradation, scalability at a lower cost of operation, access to innovative functionality, easy to integrate, lower maintenance, and labor costs
COO	Ensures banking operations run smoothly and are resilient to meet institutional needs	Greater operational efficiency, reliability, and less downtime
CFO	Overall financial health of the institution	Low system cost and total cost of operation, operational efficiency, minimizes cost overruns
Chief risk officer	Minimizes organizational risk of breaches and litigation and ensures privacy and compliance	Easier to ensure compliance, governance, more robust data security, and fraud protection; minimizes cyberthreats and privacy issues; prefers known, reliable vendor with solid reputation and experience (as opposed to a new start-up that may not be sustainable)
Line of business	Oversees consumer and business products and services	Supports innovative functionalities; improves customer experience; faster response to customer needs by bringing new products to market quicker; easier to integrate with external partners to serve new customers and markets, increase customer engagement, and grow more profitable business

Source: IDC, 2021

HOW CAN MY ORGANIZATION TAKE ADVANTAGE OF CORE BANKING MODERNIZATION?

Banks today must recognize that they can no longer afford to delay core banking modernization if they want to survive in this new digital era. Banks face increasing competition from technology companies and challenger banks offering new digital banking services and embedded financial services to customers more conveniently and intuitively than ever before. Banks' efforts to roll out new digital strategies to meet customer expectations are crippled by an overreliance on monolithic legacy systems that are not designed to process real-time transactions or access enterprisewide data that is left siloed by disparate, incompatible systems. The gap between digital leaders and banks is widening every day. The challenges, costs, and risks of running and maintaining outdated core systems will only become more daunting. Further:

- **Start now:** It is imperative to start now. The first step is to understand your bank's situation. What is the level of urgency for core banking modernization? How much risk can the bank tolerate? What is its appetite for experimentation? Which type of approach is most palatable to the organization? What business functions are most impacted negatively by the bank's legacy platform? And which business functionalities would benefit most from modern digital infrastructures?
- **Determine the core banking modernization strategy:** Evaluate your current core banking system landscape and work with C-suite, IT, and line-of-business leaders. Assess the types of new products and services the bank will need to meet customer expectations. Align your business priorities and operating model accordingly. Identify potential areas to automate and where analytics can improve productivity or enhance customer experience. Assess the sustainability of your core banking operation, its strengths and weaknesses, and the banks' IT talent pool and the banks' ability to support the project. Consider each approach to modernization and suitability for your organization. Outline the goals required from the modernization, and prioritize the areas in most critical need. An early win can prove value for a larger initiative. Reinforce that this modernization is a strategic business issue, not strictly an IT upgrade.
- **Rigorously assess and choose partners:** One of the potential challenges of choosing a partner is that multiple partners may be required to create a modern core environment. Choose partners with deep banking experience in their areas, and evaluate not only the vendors responsible for their component but also on how well those partners will work together. Focus on the business impact, not just technology features and cost. Assess their ability to help improve business processes, create business value, and develop innovative digital strategies with new products and services to meet market demands.

ADVICE FOR TECHNOLOGY BUYERS

Core system modernization is being driven by a number of customer trends influenced not only by the financial services industry but by retail, government, big tech, and others. In a sense, the need to modernize is as much a way to compete and collaborate with these firms as it is to improve the bank's own products and customer experiences.

It will also be driven by some common technology themes essential to driving digital transformation initiatives throughout the financial services industry:

- Native cloud deployment

- Microservices and containers
- Open API/open banking platforms
- AI-enabled analytics
- Real-time transactions

These technologies and initiatives will form the basis of core banking system modernization designed to support greater innovation and agility to meet changing market expectations for banks to grow and thrive. Whichever approach the bank takes in its modernization journey, whether it be a full-scale big bang cutover, establishment of a greenfield digital bank, or progressive transformation, the financial institution will need to upskill its staff in automation efforts, orchestration of the modernization initiatives, while adding an extra layer of security, compliance, and governance.

RELATED RESEARCH

- *IDC FutureScape: Worldwide Financial Services and Payments 2022 Predictions* (IDC #US48299721, October 2021)
- *IDC FutureScape: Worldwide Future of Digital Infrastructure 2022 Predictions* (IDC #US47441321, October 2021)
- *Banking on the Cloud: Results from the 2021 CloudPath Survey* (IDC #US46526221, August 2021)

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