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## **Modernizing legacy banking systems**

Practical advice to help  
banks succeed at core and  
application modernization

## **Digital innovations continue to disrupt the marketplace, leaving legacy banking systems decades behind.**

Customers today expect banks to provide the same kinds of breakthrough features and services they routinely receive from companies on the leading edge of digital innovation. But existing core banking systems and applications—after years of underinvestment—have not been optimized to take advantage of new technologies and application-management approaches. As a result, they are simply not capable of supporting the market’s rising expectations, and may soon expose banks to additional risk and liability. What’s more, operation and maintenance of those legacy systems is becoming more difficult and costly thanks to the small and dwindling pool of experts with the technical and institutional knowledge to support core systems developed for a different era.

These powerful market forces have created a clear need for system modernization. Many banks, however, are still reluctant to upgrade their core platforms and apps. One reason is the central position those systems occupy in the overall banking architecture, which makes it likely that any changes to a bank’s core platforms and apps will have a widespread impact throughout its channels and operations. Also, until recently the only available option for system modernization was total replacement, making core banking platform upgrades a “bet the bank” decision.

The good news is that recent technology advances and improved application-management approaches now provide banks with more options for modernization. And that can make the task much less daunting.

**Legacy systems and the talent shortage**

The need for modernization has been accelerated by the growing shortage of legacy talent, which makes it increasingly difficult and expensive for banks to operate and maintain their existing core systems. Critical talent questions include:

- Who will maintain your systems in the future?
- What skill sets will they need?
- How will you retrain and recruit people with those skills?
- How will you capture existing institutional knowledge that is a key source of competitive advantage?

Legacy business and technology experts are retiring in droves, leaving a dangerous vacuum of technical and institutional knowledge. For example, COBOL programmers are rapidly aging out of the workforce, making them increasingly scarce and expensive. So too are long-tenured employees with deep knowledge of a bank’s existing systems (and the embedded

business rules that contribute to the bank’s competitive advantage).

To make matters worse, today’s top technical talent has little desire to work with antiquated systems and platforms, making it hard for banks to attract the experts and innovators necessary to survive and thrive in the age of digital transformation.

Modernization helps address the talent shortage by creating an IT environment that is attractive to younger workers, and by shifting much of the talent burden from your in-house IT department to external IT vendors with adequate resources. Modernization also captures the priceless institutional knowledge that is locked up in your legacy systems—and in the heads of employees who support those systems—and transfers it into more advanced solutions that can propel your business into the future.

**Modernizing legacy systems and applications**

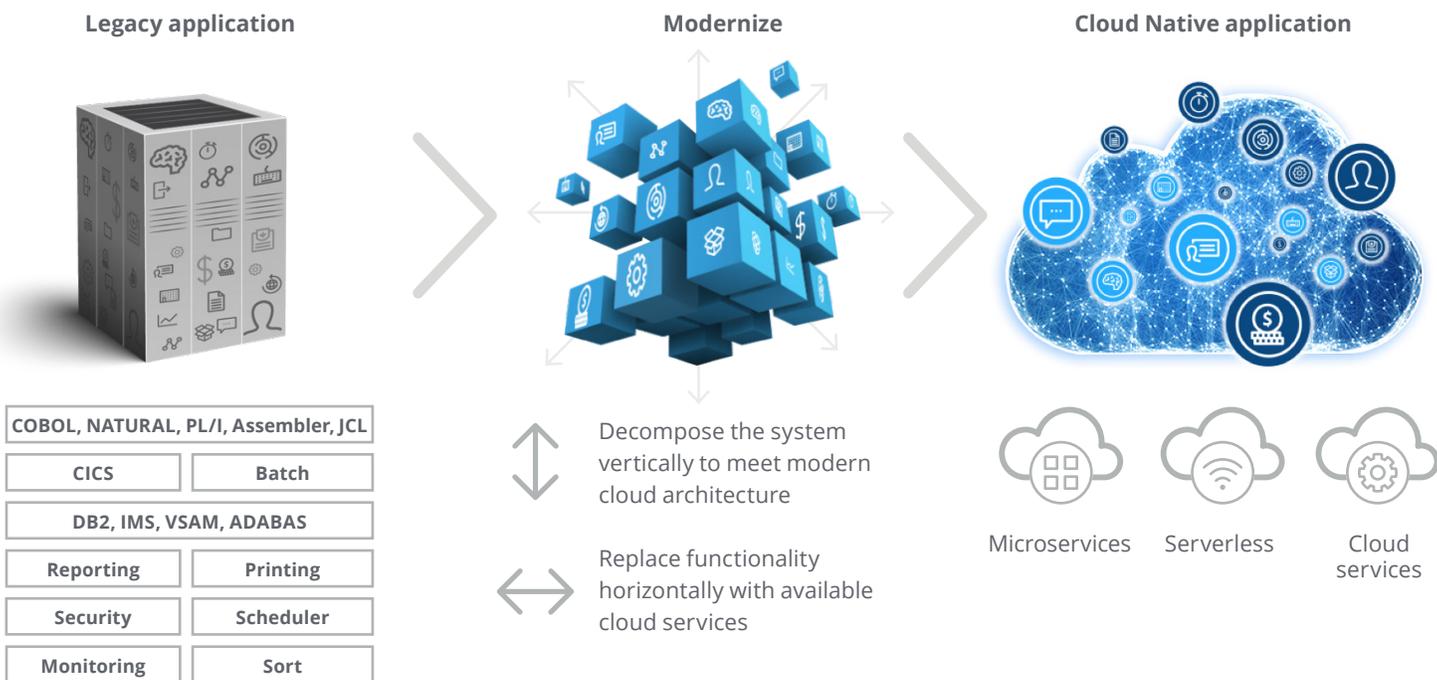
The modernization process typically involves moving from mainframe-based

legacy platforms to solutions built on cloud and other modern digital technologies (figure 1).

As you move from a customized set of legacy mainframe applications to a configurable set of Cloud Native applications, it is essential to preserve the valuable intellectual property in your existing business rules. In-depth, accurate knowledge of business rules can help your organization resolve critical issues that could impede its efforts at application modernization and digital transformation. What’s more, the right modernization approach can build on this knowledge in ways that preserve hidden intellectual property for use in upcoming projects. That can help you generate the maximum business value from your existing and future applications.

With core and app modernization, the IT model shifts from in-house, on-premises legacy systems to modern cloud-based solutions provided by third-party vendors. Also, the approach to IT development shifts from complex customization to simple configuration.

**Figure 1: Legacy modernization**



## Platform options

Banks now have multiple platform options that can enable them to not only modernize their applications, but also infuse new applications and processes with their own business rules through business rules extraction.

Today's core banking platforms fall into three broad categories:



### Legacy platforms.

These “one-stop shop” solutions run on a proprietary or closed platform (often a mainframe system). They tend to be complex to implement and usually have a multi-year, license-based pricing model.



### Service-oriented platforms.

These platforms are designed around a service-oriented architecture (SOA) model and enable real-time processing. They are typically offered as hosted software-as-a-service (SaaS) solutions and generally feature a license- and subscription-based model.



### Cloud Native platforms.

These platforms leverage micro services-based architectures with application programming interfaces (APIs) that provide access to and from other internal and external services. They support real-time processing and—because they are Cloud Native—typically offer a pay-per-use subscription model.

*With this broader array of available technologies, banks now have a range of ways to transform their core capabilities. To determine which option is best for your business, you need to establish a modernization profile based on the sustainability of your existing platform; your appetite for risk; the need to innovate your product and service offerings; your urgency to transform; and the complexity of your data strategy.*

## Modernization benefits

Modernization can produce a wide range of potential benefits, including:

- **Digital competitiveness:** Enables core systems to support the digital features and capabilities required by today's marketplace.
  - **Smarter use of talent:** Reduces reliance on increasingly scarce and expensive legacy specialists (e.g., COBOL programmers) and creates a more attractive technology environment for younger developers.
  - **Better service:** Supports improved service levels, customer satisfaction, and product innovation.
  - **Lower risk:** Reduces regulatory compliance and internal controls risk—particularly for service changes.
  - **Lower costs and improved efficiency:** Reduces service delivery costs, with potential savings early on. Enables optimization of sourcing strategies by capitalizing on commercial platform vendors' expertise and scale economies. Improves user productivity and efficiency, and evaluation of technology options. Modernization also allows banks to
- move from a “customize” to “configure” deployment model that helps eliminate technical debt.
  - **Business value creation:** Improves business process cycle time and deployment of new application functionality to drive performance, growth, and compliance. Enables data insights and cognitive automation that can create new opportunities to serve clients.
  - **Readiness for the future:** Modern languages and modernized platforms will be cheaper and easier to maintain and modify in the future.
  - **Flexibility:** Cloud-based solutions enable strategic flexibility and scalability.
  - **Institutional knowledge capture:** Extracting business rules from legacy systems allows a bank to retain the trove of institutional knowledge that provides competitive advantages. Those rules can then be imported into industry-standard software packages.

**Core system and app modernization can allow a bank to offer the innovative digital features and capabilities that customers now expect. It also enables delivery models that are much more compatible with today's technology and talent environment—models that are streamlined, standardized, and scalable in response to changing market needs.**



## Making it happen

Through our extensive experience helping banks modernize their legacy systems, we have identified several key practices that can boost your chances for success:

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### Be creative about funding

Most banks don't provide much investment funding for legacy modernization, except in crisis situations, so you will need a creative funding model that is very cost efficient (and ideally self-funding). Maintenance of your existing platform can be optimized to generate savings that can be reinvested in the modernization effort.

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### Deliver quick wins

To succeed, your modernization efforts need to generate benefits almost immediately. Many business leaders are understandably reluctant to sign up for a multi-year project since they might be gone before the benefits are delivered. Fortunately, with the right approach it is possible to achieve savings in total cost of ownership early in the modernization process.

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### Focus on business value creation, not just technology replacement

When modernizing your legacy systems and technologies, take advantage of the opportunity to simultaneously improve your business processes and to extract and capture the business rules and institutional knowledge that provide competitive advantages.

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### Automate migration and business rule extraction.

Accelerate your mainframe-to-cloud migration and extraction of business rules by taking advantage of the latest digital tools and automated APIs (application programming interfaces).

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### Migrate without disruption

Carefully choose a modernization approach that minimizes disruption to your business.

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### Focus on business impact, not just technology features and cost

The best technology solutions are agile enough to produce new apps quickly in response to shifting business needs, such as market changes, new regulatory requirements, and rising customer expectations.

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### Focus on total cost of ownership (TCO), not just purchase price

TCO is the truest, most relevant way to measure cost.

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### Don't just delegate modernization to the IT function.

Modernization is a strategic business issue, not a technology issue. If you throw the project over the wall to IT, you will probably end up with updated apps (after waiting two or three years).

**Banks that take the right approach to legacy modernization can make rapid progress on the journey while quickly generating valuable benefits, including reduced total cost of ownership, improved productivity, and digital innovation.**



### Where to start

Although there are several modernization options, any start is a smart choice because anywhere you choose is better than not starting at all. The gap between digital leaders and banks hampered by their legacy systems is growing wider every day. And the challenges, costs, and risks associated with operating and maintaining outdated core systems and applications will only increase the longer you wait.

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