



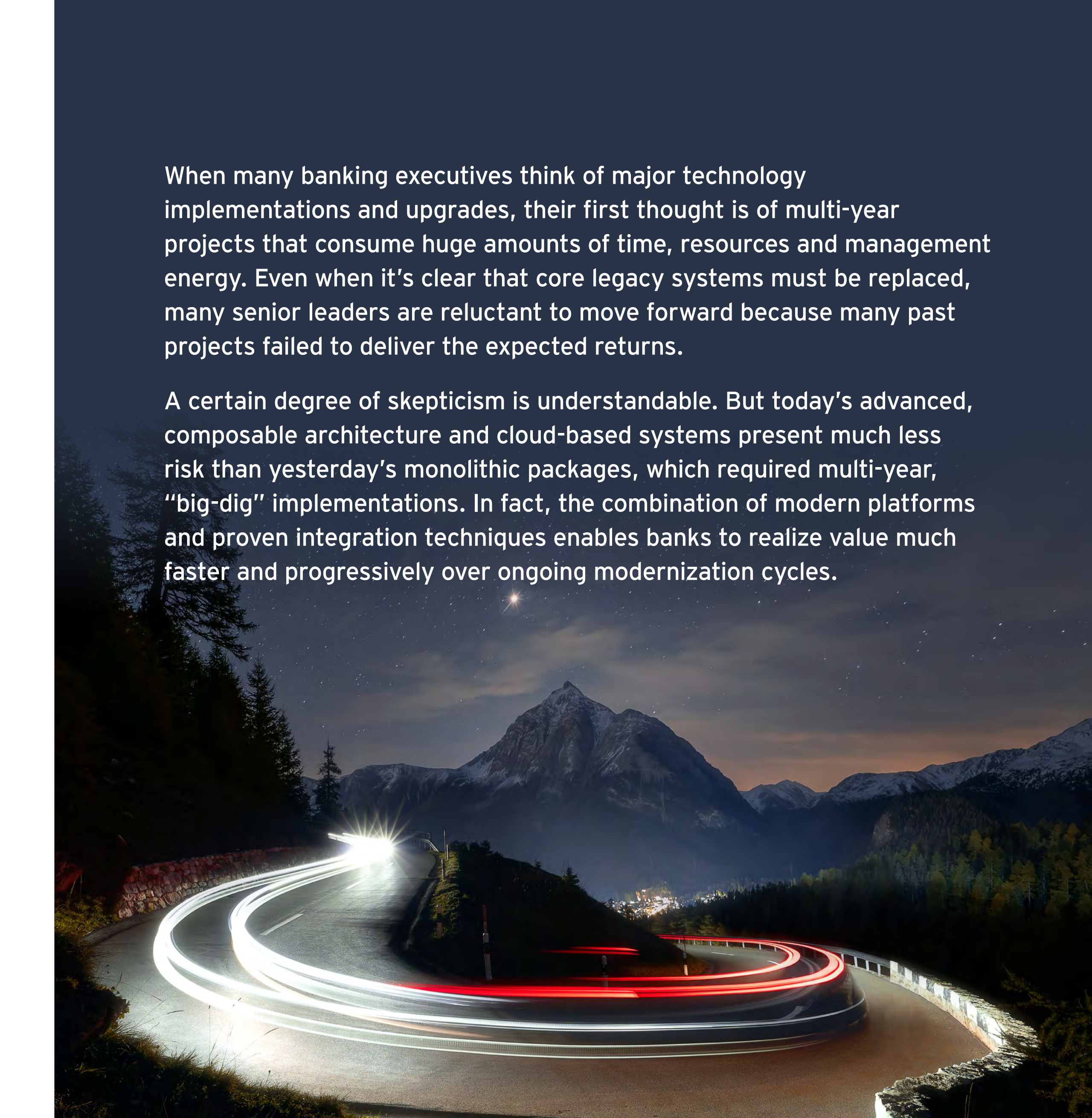
Building a better
working world



New rules of core modernization

How an effective transformation roadmap
drives incremental value and catalyzes
future innovation

May 2024



When many banking executives think of major technology implementations and upgrades, their first thought is of multi-year projects that consume huge amounts of time, resources and management energy. Even when it's clear that core legacy systems must be replaced, many senior leaders are reluctant to move forward because many past projects failed to deliver the expected returns.

A certain degree of skepticism is understandable. But today's advanced, composable architecture and cloud-based systems present much less risk than yesterday's monolithic packages, which required multi-year, "big-dig" implementations. In fact, the combination of modern platforms and proven integration techniques enables banks to realize value much faster and progressively over ongoing modernization cycles.

Why modernize? Why now?

Modernization of core systems is necessary because most banks face a considerable gap between what they want to deliver for their customers and what their legacy systems allow them to deliver. The objectives include personalizing experiences, establishing strong sales and services capabilities across multiple channels, and connecting to existing systems and external partners.

Steadily increasing maintenance costs for legacy systems also contribute to the change imperative. The costs are often hidden – expensive workarounds to support basic functionality, elevated regulatory costs (because of manual data gathering and reporting processes) and increased M&A costs (because integration is so difficult). Banks that put off modernization end up spending more to customize outdated technology even as it falls further behind in its ability to meet market demands.

There are other factors that compel banks to proceed with modernization, including:

- Intensifying competition from FinTechs and neobanks
- Constant technological advancements
- Ongoing regulatory changes
- The prospect of future mergers and acquisitions (M&A)

Collectively, these forces result in significant pressure to update business models and product and service offerings for the era of open banking, embedded finance and partner ecosystems. Similarly, institutions must establish capabilities for straight-through and real-time processing to enable real-time payments.

The talent impacts can't be overlooked either. Institutions will need to fill critical IT skills gaps as the workers with the knowledge and training to support legacy systems age out of the workforce. Also, modernized systems are necessary to attract top technology talent who want to work with the latest platforms and sophisticated toolsets.

While skeptics point to the risk of adopting new core systems, the risks of not modernizing are even greater. Decades-old legacy systems hinder speed and innovation in delivering against shifting market demands and evolving customer behaviors. Further, older technology leaves banks with inflated maintenance costs and prevents them from moving as nimbly as neobanks and other digital competitors. To innovate and compete effectively in the future, banks need core technology that supports real-time processing, smart and secure connectivity, and the ability to scale up quickly.

How banks can move to modernize

So, the question is, what to do differently to generate value sooner and establish a foundation for repeatable innovation in the future? Beyond choosing the right technology, banks

need a clear modernization roadmap with compelling business cases, strong project governance, careful orchestration of multiple technical workstreams and plans to address the human side of change. Engaging the right partner for systems integration is also essential, largely because process rationalization and effective integration holds the key to modernizing the business model.

Core modernization requires considerable investment and multi-dimensional effort. But based on the joint experience of EY to Ernst & Young LLP (EY) and FIS, the returns more than justify the hard work. Our analysis shows that banks can realize 20%-35% gains in operational efficiency (primarily through real-time processing, automation of exception handling and product rationalization). Reductions in post-merger integration costs can be as much as 40%. On the top line, the ability to design and launch new products quickly can unleash significant revenue gains.

These benefits come through standardization, economies of scale by consolidating transaction volumes to fewer processing systems (e.g., for deposits and lending), and engaging fewer partners for deeper discounts. Significantly lower systems maintenance costs are well within reach. Stronger innovation and customer acquisition capabilities can deliver even more impressive financial results.

How important is modernized technology in the intensely competitive banking market?

67%

EY NextWave Consumer Financial Services research found that 67% of customer value leaders regularly acquire or test new tools and platforms,

27%

compared to 27% of also-rans.

Source: EY NextWave Consumer Financial Services.

This paper provides practical advice for achieving those benefits. Specifically, it will:

- ▶ Outline five rules that lead to core modernization success
- ▶ Demonstrate lessons learned from banks that have successfully transformed their core technology platforms in line with their unique business goals
- ▶ Identify the core elements of an effective modernization roadmap
- ▶ Highlight the unique strengths and advantages of the EY-FIS alliance

The tangible and compelling economic benefits for banks that modernize

Customer

Increased revenue from faster development of new products and features

5%-10% overall revenue uplift

30%-90% reduction in trailing 12 months

25%-30% account volume growth

Business

Stronger, regulatory compliant business continuity via increased system availability and self-service capabilities

1%-3% improvement in system availability

95%-99% improvements in mean time to repair (MTTR)

Operations

Efficiency gains via straight-through and real-time processing

20%-35% increase in operational efficiency

IT

Cost savings via decommissioning legacy solutions and standardizing on modern systems

15%-30% decrease in cost per account

12%-15% reduction in lost accounts

Source: EY-FIS market experience and analysis.

Five rules of core modernization success

RULE 01

Design with the future in mind.

Progressive modernization means banks must make tactical technology decisions and investments with a target future state in mind. By taking a future-back approach, banks can determine the capabilities and offerings they need to satisfy customers tomorrow and then define the necessary steps they will need to get there. These considerations are vitally important now, given the need for many banks to evolve their business models and launch new products and services and the increasing importance of open banking, ecosystems and embedded finance. Such innovations align directly to the economics of core system modernization.

The future vision should incorporate the necessary capabilities to support advanced technologies (e.g., generative AI) and enable the business to take advantage of real-time insights. From a technical perspective, that means designing composable architectures and embracing open integration capabilities (e.g., APIs, event streaming) in conjunction with data management and data services layers.

Even if it's difficult to predict how technology will evolve, multi-cloud infrastructure (private and public) that scales quickly and supports easy connectivity will be key to taking advantage of future tech advancements. Further, it provides the flexibility and agility for banks to pivot and adjust as competitive imperatives and customer needs shift over time.

New rules in action

A mid-sized US bank used a future-back model to shift core capabilities into a highly connected, ecosystem view of the business, co-existing and then replacing a monolithic environment. In addition to cloud-ready, API and event-driven integration capabilities, the EY-FIS team identified future products and designed leaner automated processes to support them.



RULE 02

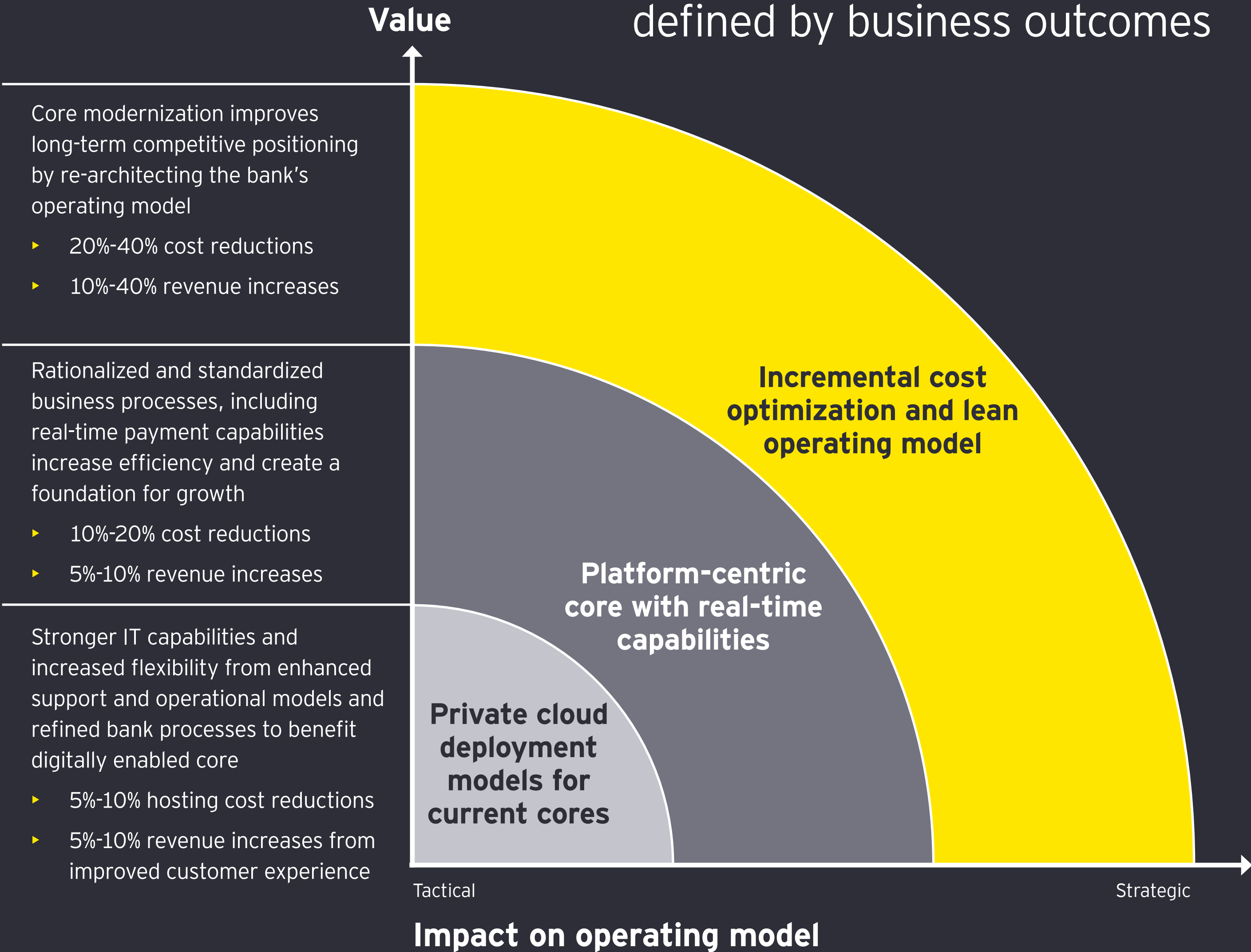
Think tactical short-term value delivery aligned to long-term strategy.

A clear vision for the future doesn't ignore today's economic realities - that is, the need to deliver tangible value as soon as possible and incrementally across each phase of the modernization journey. The good news is that cloud-based software platforms eliminate the need for banks to stand up or maintain infrastructure, thus accelerating the development of scalable software and reducing time to value. That value can take many forms, including lower call center expenses and lower maintenance costs (once legacy technology is retired). Faster product launches - with development timelines reduced from months to weeks - can unleash top-line growth, too.

Ultimately, banks can adopt a two-track process for streamlining and innovating products and services that drive revenue growth while simultaneously reducing total cost of ownership. Consider how:

- ▶ Component architecture enables the modularization of operating models and more flexible solution sourcing options
- ▶ Data access at point of interaction allows for process automation and simplification, reducing service response times

A modernization roadmap defined by business outcomes

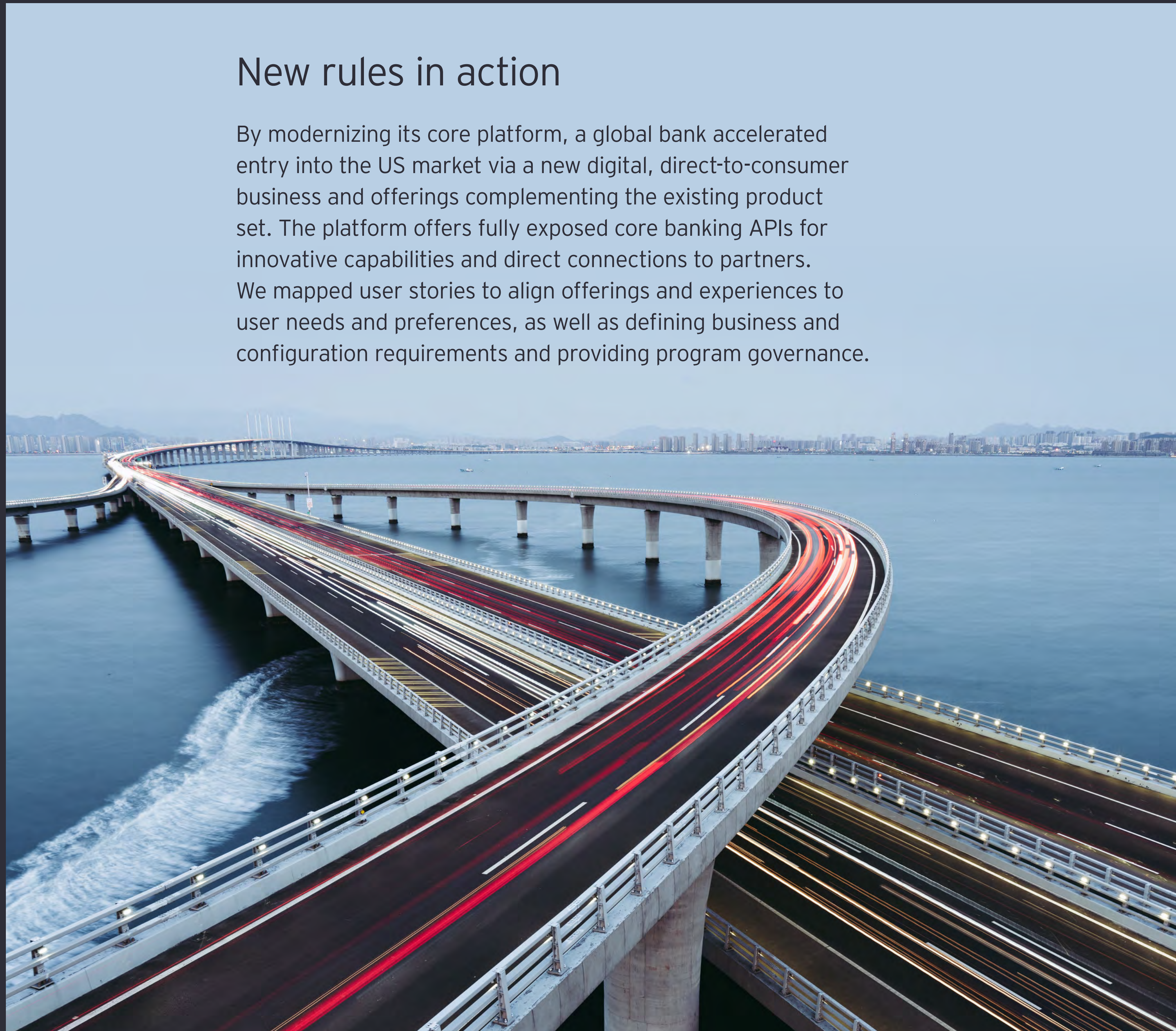


- ▶ Configuration-based and pricing transparency simplifies and standardizes products and processes to reduce operational risk
- ▶ Flexible product characteristics facilitate rapid product innovation and bundling
- ▶ Next-generation architecture promote multi-channel support
- ▶ System scalability and ease of configuration facilitate mergers and rapid growth
- ▶ Support for multiple geographies, currencies and language capabilities can streamline geographic expansion
- ▶ Product and process standardization to minimize redundant resources

There are multiple techniques to generate value sooner. Agile methodologies are designed to produce results more quickly and consistently. Deploying new systems for just one product or market segment at a time and launching MVPs via limited “friends-and-family” releases enable faster testing cycles, prioritize enhancements and promote user adoption. Reusable assets, proven accelerators and strong partnerships also help streamline and de-risk modernization initiatives.

New rules in action

By modernizing its core platform, a global bank accelerated entry into the US market via a new digital, direct-to-consumer business and offerings complementing the existing product set. The platform offers fully exposed core banking APIs for innovative capabilities and direct connections to partners. We mapped user stories to align offerings and experiences to user needs and preferences, as well as defining business and configuration requirements and providing program governance.



RULE 03

Establish guiding principles that enable growth while managing risk.

Every successful tech-enabled transformation adopts guiding principles to serve as a compass to keep the program progressing in line with the initial vision and toward specific milestones. When clearly articulated and collectively agreed, such principles help prevent near-term pressures and shortsighted decisions from compromising long-term objectives. They also help ensure that “getting it done” doesn’t supersede “getting it done right” and that growth targets are compatible with the organizational risk appetite.

Every modernization effort will have its own principles, based on the organization’s unique strategies, customer base and operational footprint. But all should be designed to link specific platform functionality (e.g., support for integrated cross-channel experiences) with specific business goals (e.g., increased customer engagement).

Business and technology principles can – and should – be mutually reinforcing. For instance, the business will prioritize solutions that enable rapid, dynamic responses when market conditions change or competitive threats emerge. In technology terms, the requirements will emphasize modularity based on interchangeable assets and components that are extensible, reusable, maintainable and adaptable, all of which are inherent in the design of advanced technology platforms.



How core modernization delivers business value

Revenue growth and retention

Through improved speed to market, richer customer experiences and revenue retention from tailored, relationship pricing and more precise segmentation.

Improved operational efficiency

Through a highly scalable, cloud-enabled, open banking architecture supporting multiple business needs, global operations and streamlined compliance.

Increased innovation and agility

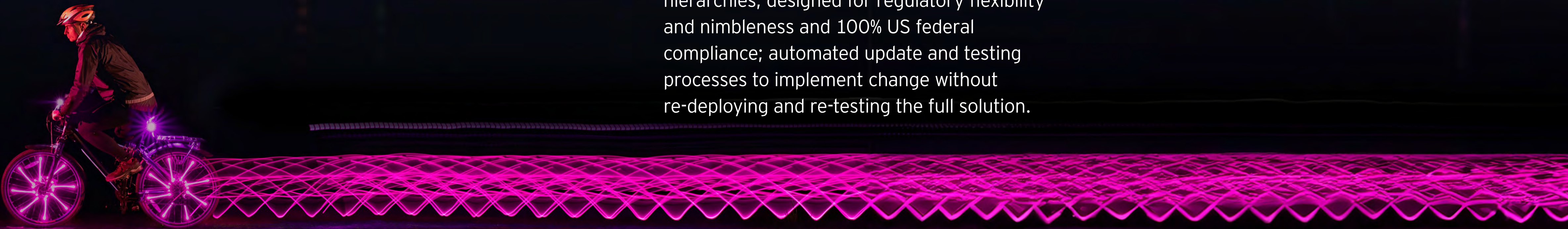
Through rich and extensible functionality, sustainable future-proof solutions, digitally enabled cores, rich API and service inventories, and open accessible real-time integrated core capabilities.

KEY FEATURES

Extensive configuration options; business outcomes-oriented, GUI-based change management, fully exposed APIs for integration/adoption; real-time transaction/event streaming.

Componentized design; multi-tenancy, multi-currency, multi-platform, multi-deployment, multi-accounting, multi-language and multi-time zone support; industry data model and modern code hierarchies; designed for regulatory flexibility and nimbleness and 100% US federal compliance; automated update and testing processes to implement change without re-deploying and re-testing the full solution.

Common processing framework, specialized line-of-business engines; elegant code deployment packaging provisions; FIS Code Connect API Marketplace and Developer Portal.



RULE 04

Select the right adoption model.

While there is no singular prescribed route to achieving successful modernization, there are several validated adoption models, each offering distinct advantages and drawbacks. Banks seeking to stimulate growth through new products or entirely new business models (e.g., standalone digital banks) may gravitate toward adoption models that establish an entirely new core system with minimal integration dependencies on current infrastructure. Conversely, banks aiming to reduce potential disruption to customers might favor an adoption model that involves the two cores – one legacy and one new – working simultaneously in tandem to serve customers during the transition period.

Effective adoption models for core modernization in the banking sector include:

- ▶ Digital bank
- ▶ Side car (also known as side core)
- ▶ Targeted adoption
- ▶ Phased full adoption

Digital bank

Rapid implementation, minimal integration

This model is often used by traditional banks launching direct-to-consumer brands via a complete, independent deployment of new technology that is not integrated with any existing systems or platforms. This approach can be particularly advantageous for digital-only initiatives and brand-new implementations.

Side car

Rapid implementation, moderate integration

New core systems are connected solely to the bank's channels and backend target-state systems (e.g., general ledger, statements), enabling rapid deployment. New products become accessible through and new customers are onboarded onto the new core system. The two cores operate independently alongside each other, with accounts gradually shifting away from the legacy systems over a period of time.

Targeted adoption

Business value focus, moderate integration

In this approach, sometimes called "strangler," specific functional capabilities of the legacy core systems are externalized through new enterprise components (e.g., customer management, product catalog, relationship pricing). These components abstract and expand upon the existing core functionalities. This focused preparatory phase aims to deliver early incremental business and technical value, mitigating risks associated with transitioning from

a monolithic architecture to a new core structure based on microservices and event-driven architecture. Subsequently, the new core platform is introduced, offering new products to both new and existing customers. The two cores coexist independently, with accounts gradually transitioning from the legacy systems to the new core over time.

Phased full adoption

Low risk focus, comprehensive integration

In this strategy, the new core platform and enterprise components are implemented within existing application ecosystems. A complete range of existing and new products operates on the modernized core system. The two core systems operate independently alongside each other, and a gradual transition of accounts from legacy systems is carried out systematically to shorten the coexistence period. While this approach may require increased resources, it can effectively reduce deployment risks by limiting user exposure and providing clear fallback options.

Regardless of the adoption model they choose, banks should aim to mitigate service disruptions, reduce risks associated with account portfolio migrations and ensure data integrity throughout the entire modernization process. The ability to efficiently scale new business models and expedite customer acquisition should be key considerations when evaluating adoption models.

New rules in action

For one bank replacing a core deposit platform, the EY-FIS team mapped the functionality of more than 50 legacy applications to reduce technical debt and simplify regulatory compliance. Additionally, we rationalized more than 2,100 point-to-point integrations among nearly 400 systems to reduce operational costs. The process enabled stronger reporting and analytics capabilities and centralized customer data for multiple products for an improved experience. Choosing the right adoption approach helped the bank maintain business continuity.



RULE 05

Put humans at the center.

Tight budgets often limit investments in organizational change management. But research from EY and Oxford University shows that the so-called soft side of change often delivers the hard, bottom-line results business leaders are looking for. For instance, businesses are 2.6 times more likely to drive successful transformation by putting people at the heart of the change as a critical element of strategic leadership and planning.

Human-centered design can lead to more satisfying customer experiences and help employees understand both why new tech is necessary and how they should use it. New platforms boost customer-centricity through more intuitive product interactions, personalized experiences, timely communications and notifications. Employees can – and should – help design new technologies, which helps improve adoption and advocacy of new systems and tools.

New platforms may also lead banks to seek new talent and access to scarce skills (e.g., data science). Alternative sourcing models can also enable a strategic shift within IT, as relatively low-value activities (e.g., maintenance, back-office processing) are handled by partners or specialty service providers. It's worth remembering that better technology is key to attracting top talent.



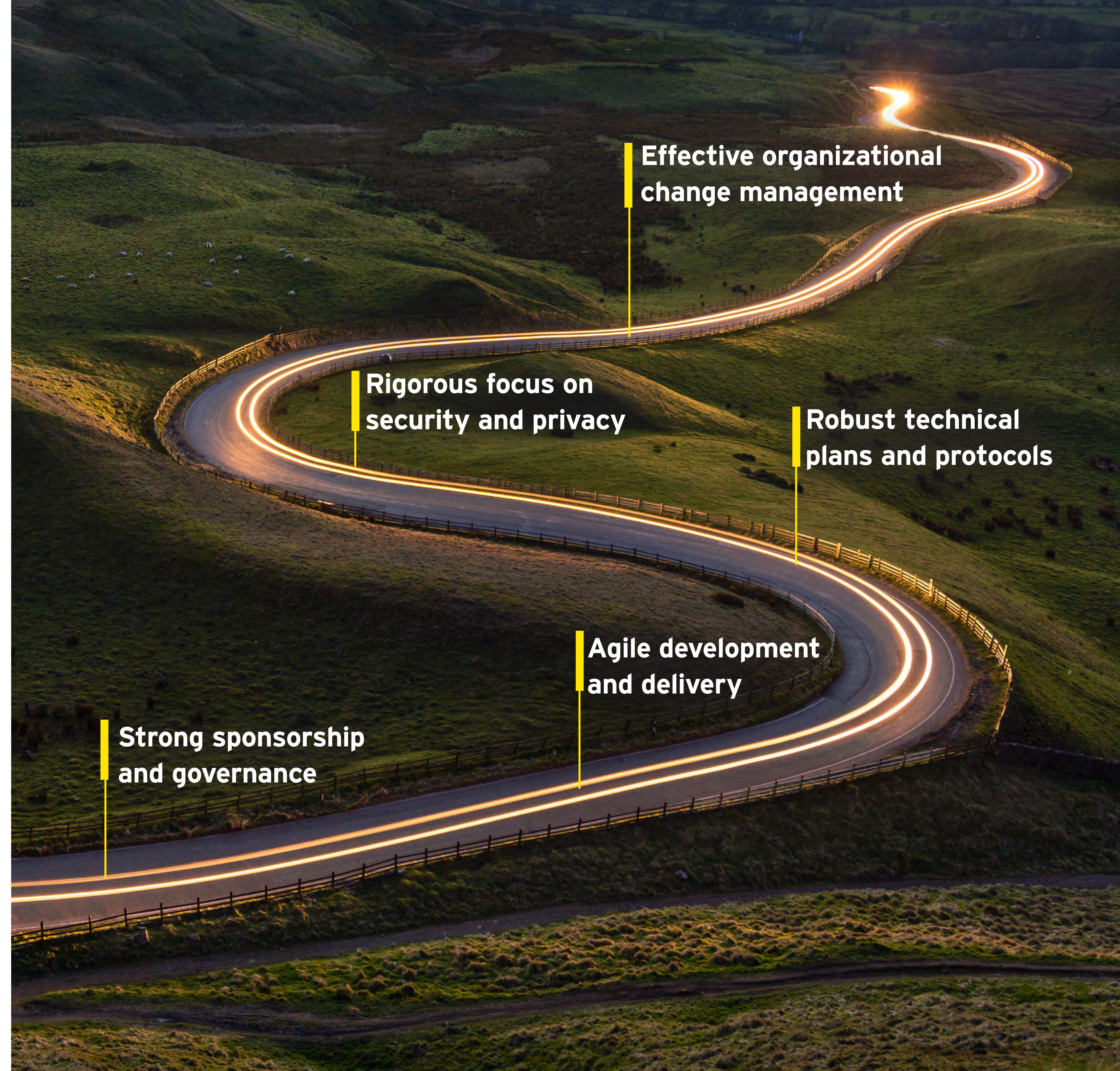
Moving forward: a core modernization roadmap

An integrated roadmap is how EY and FIS execute the five rules of modernization, helping banks to generate optimal returns on investments in advanced technology. We have seen time and again how the following leading practices minimize the risk of cost overruns, delays and other common pitfalls. The key is to thoughtfully orchestrate multiple elements of change, including the areas highlighted below.

For each of these elements, proven program guides, frameworks and accelerators can streamline integration with both internal and external systems and greatly reduce the risk of technical delays. Put another way, they improve the likelihood that the modernization will be delivered on time, on budget and in line with strategic goals.

Strong sponsorship and governance

Strong support from senior leaders sends a message about the importance of core modernization to the business, especially relative to innovation and growth. Active steering committees should be accountable for the business case, both defining the major objectives and tracking progress across major milestones. No core modernization can succeed without a properly resourced and skilled program management office (PMO). PMOs are necessary to coordinate and synchronize multiple workstreams, many of which must run in parallel.



Robust technical plans and protocols

While successful modernization is not exclusively about the technology, there are many critical details to be managed, including:

- Infrastructure design: cloud, on-premise or hybrid in line with performance and scalability needs and targets
- Application architecture: domain-driven design and service catalogs to rationalize the application landscape
- Integration architecture: intelligent core design, APIs and other adapters to enhance data movement, consumption and secure, plug-and-play connectivity
- Development toolsets: automated testing and robust DevOps pipelines enabling CI/CD

Achieving maturity across these four capabilities is necessary to adhere to open banking requirements. More importantly,

it can prepare the organizations to take advantage of the many innovation and growth opportunities associated with open banking, as well as ecosystems and embedded finance.

Agile development and delivery

Agile development methodologies have gained traction because of the need for banks to continuously enhance legacy business processes, products, services and experiences they offer customers. They are particularly well suited to core modernization because they are designed to deliver value consistently and repeatedly across the transformation journey. In banking, however, many institutions use hybrid delivery models. That means business and integration teams must have the skills, tools and resources to operate in environments that combine multiple methodologies.





New rules in action

A retail bank challenged to modernize its deposit platform used an integrated project plan to contextualize issues and gain perspectives on inconsistencies in its program strategy to reprioritize the deployment approach around the original strategic vision and specific business objectives. Standing up a new transformation program office was key to improving transparency and accountability into platform and software release management processes and enhancing governance tracking.

Rigorous focus on security and privacy

The highly sensitive nature of customer data and the industry's high degree of regulatory oversight means security and privacy are the first priorities of modernization initiatives. Cyber and other security protocols may need to extend across cloud and on-premise systems and apply to a range of processes, including account portfolio conversions and data management.

Modern platforms must balance the need for strong identity access management features while still offering customers and other users easy and intuitive experiences. Beyond authentication and authorization processes, security and privacy policies must reflect the requirements for know-your-customer, anti-money laundering and other regulations.

Effective organizational change management

It's well known that employee resistance to new technology has caused many past transformation initiatives to deliver sub-par results. When employees understand why new systems are necessary, how new tech impacts their jobs and are trained to use new tools, returns on technology investments increase significantly. Ideally, end-users can participate in the design of new systems or be involved in testing, within Agile development cycles. Such early engagement can reduce barriers to adoption of new tools.

EY-FIS: the advantages of partnership

The strategic EY-FIS alliance is built on a shared commitment to modernizing and protecting financial systems. The solutions we jointly develop and deliver leverage advanced FIS technology and our deep industry knowledge and diverse capabilities, including ecosystem orchestration and transformative systems integration.

Together, we serve as strategic business and technology advisors for global and regional banks. We help our clients achieve breakthrough performance gains in core banking processes, including account management, payments, lending, wealth and asset management, treasury, insurance, risk and compliance.

- ▶ Global footprint: A global network of EY offices, global development and delivery centers with 66,000+ technology professionals around the globe, enables “follow-the-sun” delivery at scale.
- ▶ Focus on regulatory compliance: FIS technology is designed for continuous and evergreen compliance with US regulatory requirements. We bring broad risk and regulatory knowledge and active, trust-based engagement with regulators to every engagement.



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The EY team combines extensive knowledge of FIS systems with deep expertise in all the areas necessary to generate returns from investments in core modernization – from business architecture design and strong program governance, to accelerated development that shortens time to value.

Rick Foresta

Senior Vice President, Modern Banking Platform Global Leader, FIS

- ▶ AI readiness: Our collective leadership in developing AI tools is helping banks streamline management of core modernization programs, while also providing the flexible technology foundation for future AI innovations.
- ▶ Proven program accelerators: We have developed assets and frameworks for user journey and capability mapping, reference architectures, microservices integration, testing and regulatory alignment – all tailored to FIS systems and platforms.
- ▶ EY Nexus for Banking: Our business transformation platform is optimized for banks seeking to accelerate product innovation, execute their ecosystem strategies and power frictionless customer experiences.

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Advanced platforms like those from FIS enable institutions to create connected value with partners across banking journeys, win with closed-loop data ecosystems and increase their velocity in delivering the experiences that consumers are seeking.

Nikhil Lele

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