



WHITE PAPER

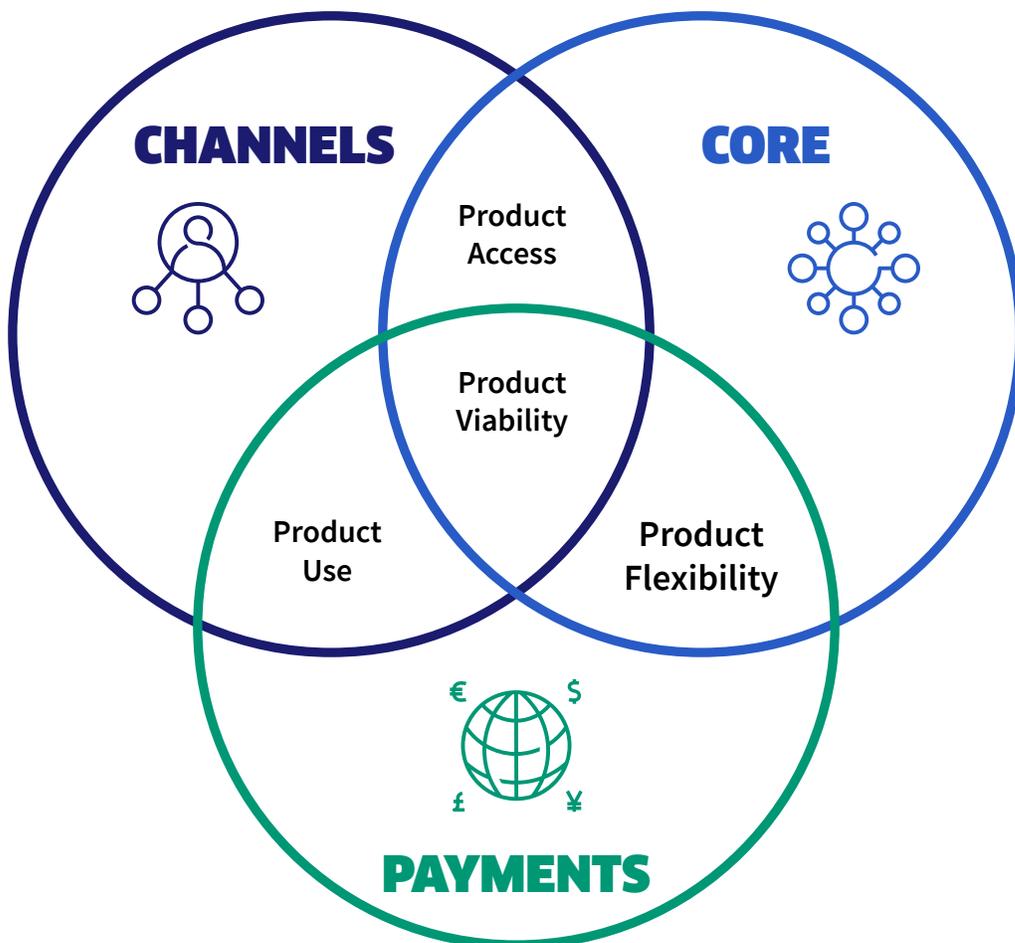
MODERN PAYMENTS FOR MODERN BANKING

Architecting a Modern Platform That
Elevates Banking and Payments

Digital technologies and open banking are changing banking forever.

Banking is not limited to banks anymore – people spend more time banking than before, but seldom visit a bank. Increasingly, we bank using apps and solutions that are provided by third parties rather than by banks. Meanwhile, the global payments industry is also undergoing a revolution: Cash and checks are being used less, digital/mobile wallets are being used more – already accounting for 42 percent of global eCommerce spending in 2019 (24 percent in the U.S.), with adoption increasing worldwide. Smartphones have become the new wallet for many consumers, with market forecasters projecting that more than one billion shoppers will make a digital or mobile wallet payment this year.¹

This ever-evolving and shape-shifting market brings numerous challenges to banks and other financial institutions; it also brings new opportunities for innovations and improvements for banking and payments. We face a pace of change that is already in overdrive, and continually accelerating. To be a market leader, financial institutions need to address, unify and “future-proof” an essential triad of investment and technological advancement aspects: **Core**, **Channels** and **Payments** – and the underlying technical architecture that supports them.



A **modernized payments system** will help banks prepare for and fully participate in the **open banking** ecosystem of the future. We cannot have one without the other. Ultimately, banks need to modernize for the future of a **new normal in financial services** that is designed for openness.

Modernization Goals

CORE



Core banking systems need to support modern, flexible products which suit a varied and diverse market. Banks require the capability to easily create and deploy products with real-time data, accessible via an omnichannel environment, with an option to embed the products in third-party services. Banks must consider how to brand, support up-to-the-moment and augment offerings that are distributed beyond traditional channels. Being able to provide the products, services, advice up-to-the-moment and convenience that customers embrace and value in the market is pinnacle.

CHANNELS



Digital channels enable customers to transact and access products, services up-to-the-moment and information when and where they want. The channels should provide a consistent experience, and enable customers to begin a journey in one channel and seamlessly complete it in another if they choose. Customers demand convenience, and up-to-the-moment real-time balances, information and advice using any device. Security is paramount, so it is essential that the channels have the necessary security safeguards to ensure customer confidence.

PAYMENTS



Customers need the ability to use bank products for purchases, credits, money movement, treasury services and many other purposes. You can have an industry-leading customer experience with a real time, agile core system, but if your customer cannot use modern payments services in real-time as an inherent feature in your financial products, they will look elsewhere. Statistics show that people want payment systems that are low in friction, rich in content, and delivered in context. How you craft and deploy your payments approach will define how your customers will ultimately score your financial institution's product offerings.



Aligning the Bank's Payments Approach and Architecture

The bank's payments strategy must align with the needs of the customers of your core products:

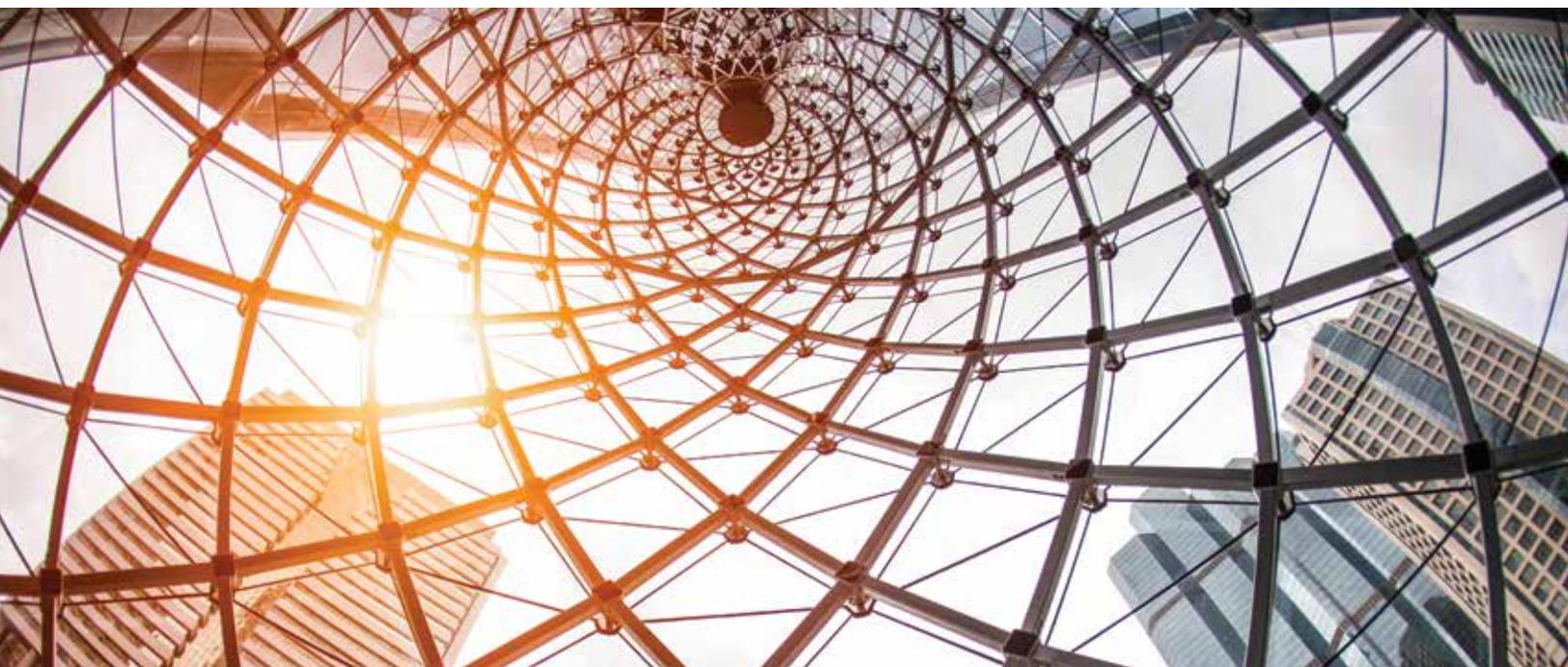
Retail consumer space – Retail purchases, digital payments, P2P, BillPay, scheduled payments, deposit capture

Business space – Payroll, sweeps, positive pay, treasury, cash forecasting, liquidity, integrated payables

The underlying technical architecture platform must also evolve and be modernized to meet the needs of today's market, and tomorrow's.

As with core systems and channels, the bank's payments strategy needs to address:

- **Speed to market.** Tapping into an extensive library of application program interfaces (APIs) expedites speed to market, supports open banking, and enables payments to be delivered where and when they are needed
- **Ease of integration via components and APIs.** Component-based platforms allow individual system components to be upgraded or replaced without affecting other bank functions or data
- **Personalization.** A modern payments platform should facilitate personalization in the channels, and leverage the power of data analytics and artificial intelligence (AI) to enhance the customer experience (which in turn feeds cross-sell and up-sell opportunities)
- **Resiliency and scalability.** Cloud-capable platforms provide unmatched high resiliency, scalability and cost-efficiencies that come with secure cloud delivery, and provide the essentials for the bank to become truly data-driven
- **Regulatory compliance.** With inherently strong security and fraud detection, the solution must help the bank meet complex and changing regulatory requirements and to adopt a RegTech approach to compliance reporting
- **Use of standards.** Standards such as ISO2002² allow for transaction richness and transparency, providing ease of settlement and reconciliation, and ultimately a better consumer experience; standards can also simplify bank processing from an operational perspective – *think of Bank Ops (FTEs) all being able to leverage the same terminology for payments ... Nirvana!*

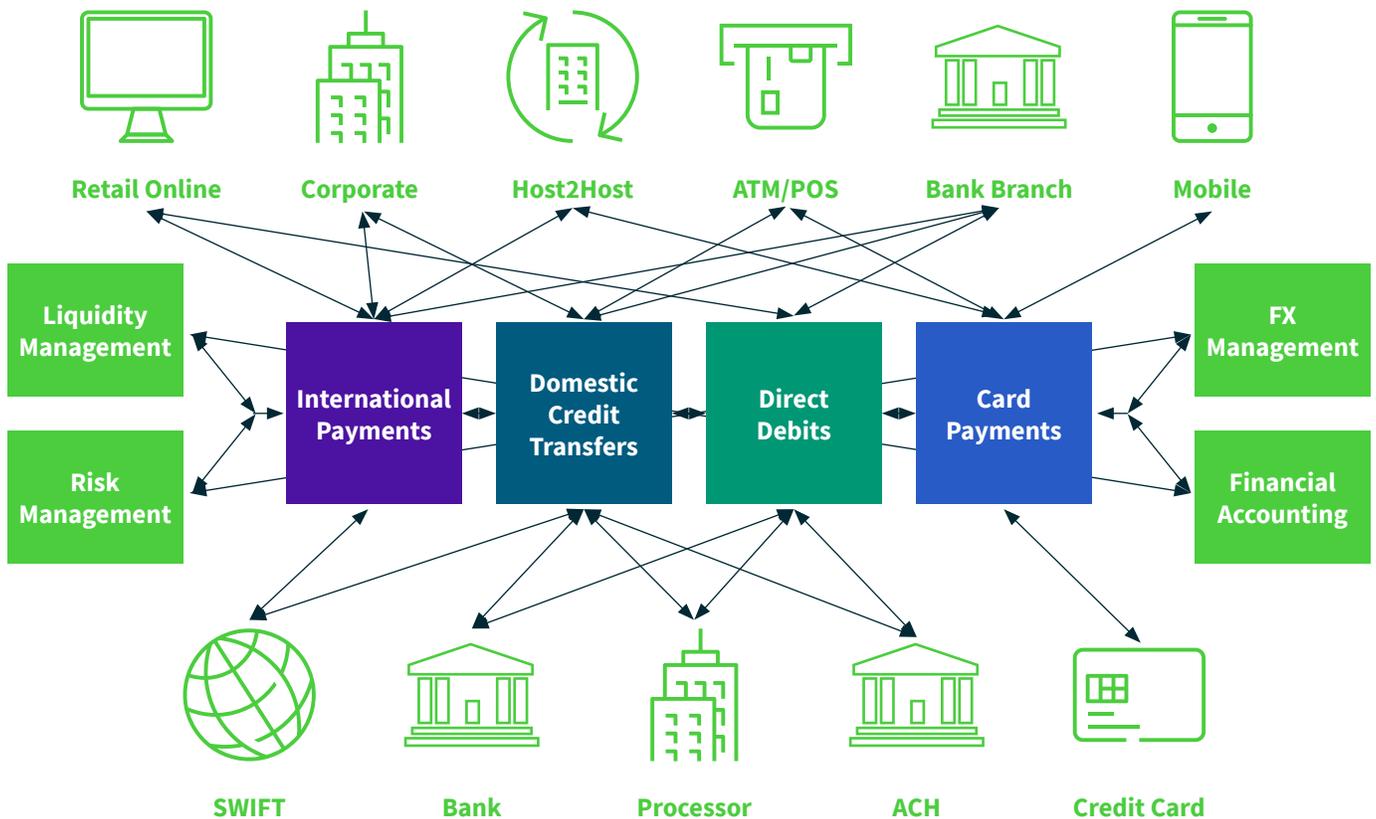


Approaching the Banking and Payments Convergence

The question is how to approach this type of convergence. Traditionally, payments, core and channels have grown in separate silos, while different payment types have their own schemes and compliance requirements. As with legacy core systems, payments solutions have developed in larger, business-laden verticals which required specific interfaces and knowledge to use them in an interoperable fashion.

As an example, the ATM/EFT acquiring space used specific interfaces (NDC+, D912, etc.) and followed highly customized messaging protocols to achieve interaction with the consumer channel. Because of the very specific nature of the channel, specialty Electronic Fund Transfer (EFT) switches were deployed to deal with encryption, authentication and accommodate the 24/7 online processing windows which could not be supported by core systems of the day. As greater flexibility of product ranges and processing for debit, credit, prepaid, commercial and transportation products grew, the need to extend the business logic necessitated the expansion of this siloed functionality. The increased need for fraud detection, Anti Money Laundering (AML), and regulatory compliance further bloated these already unique systems.

The same could be said for non-EFT transactions such as domestic (ACH, Wire, RTP) International (RTGS, SWIFT), debit (networks), credit (card) and other transaction types. The sheer volume of transactions for payroll, trades, and treasury/sweep functions allowed for large vertical platforms with integrated – and in many cases duplicated – business logic that took on a line of business of their own.



In a fiercely competitive business environment where budgets must be managed carefully, functional requirements for features such as fraud detection, regulatory compliance, personalization, pricing/fees and cross-platform product bundling can be cumbersome and costly to manage. Likewise, investments in vertical systems must be coordinated in a decentralized manner which is complicated. This is far from optimal and usually leads to elongated development and deployment cycles, and typically still results in distributed operations and data analytics. In other words, despite the time and expense, the “end product” simply continues to extend the current complicated architecture.

The goals of payments modernization and simplification are not unique to financial institutions. For instance, Subway CIO Mike Macrie recently explained how Subway is partnering with Ayden to provide “automated franchisee on-boarding, a franchisee dashboard that includes easy reconciliation of all payment methods, refunds and terminal fleet management, support for preferred payment methods, and a single data view and shopper insights across all channels and franchisees everywhere.”³ In short, they are reconciling their payment silos to cater to modern digital-age expectations.

As financial institutions grapple with how to make progress on new architecture approaches, market disrupters continue to challenge the trust association with banks and capitalize on new market entrants using nimble technology. Big Tech players such as Apple (with Apple Pay), Amazon (with Amazon Pay), Alibaba (with Alipay’s Zhima) and others continue to gain customer allegiance.⁴ Currently these companies are focused on the front-end; they are changing how payments are captured, but not how they are processed and settled. All of these players have to partner with banks; in order to attract the companies that are providing front-end market disruption, banks need a modern payment processing system.

So, with all the new market entrants and offerings, and the need to modernize your bank’s technology stack, how can your bank reach its modernization goals including “fast payments”? And what does that mean exactly? The 2019 edition of FIS’ annual payments report, *Flavors of Fast*, defines fast payments as follows:

“INTER-BANK, FULLY ELECTRONIC PAYMENT SYSTEMS IN WHICH IRREVOCABLE FUNDS ARE TRANSFERRED FROM ONE BANK ACCOUNT TO ANOTHER, AND WHERE CONFIRMATION BACK TO THE ORIGINATOR AND RECEIVER OF THE PAYMENT IS AVAILABLE IN ONE MINUTE OR LESS.”⁵

Keep in mind that these fast payments will also need to stay in sync with the bank’s modernized core and channels.

To make things even more involved, in addition to figuring out the “How?” there is also the question of “Why?” The business cases being made around the world for faster payments are many-fold.

Example Use Cases

Our digital, modern age demands greater value delivered around payments. Your customers want to know how they can ask for a payment from another party. They want to know how they can track and settle it.

For security purposes, customers want the ability to pay as an alias. They desire and require the need for identity security. Schemes which include aliasing such as Zelle, PayNow and AnyID are the current standards.

Customers need assurance that payment recipients are actually who they claim to be (a matter of verification and authentication). When they make a payment, they want to know that their payment is secure, and once the bank confirms the payment was made the recipient can confirm it as well. This is an age of real-time expectations.

Cross-border payments are a growing trend. The world is becoming smaller and banks need modernized solution and technology stacks that support multi-currency and multi-country capabilities.

In recent years, we have seen a move from traditional channels to digital devices. The adoption of the phone as a payment instrument has seen tremendous growth, and new emergents are on the rise. Your customers may want to send or receive via the Internet of Things (IoT). QR codes are becoming more and more prevalent. In a world of 7.62 billion humans, there are estimated to be over 20 billion IoT devices⁶ (and growing). You will need scale to satisfy that need, and cloud is the only sustainable option.

Meanwhile, customer expectations ride on the rails of consistency. Customers want to have a consistent payments experience in terms of speed, reliability and security. They expect emerging fintech to be readily adopted. Customers assume that your bank will keep up with the disrupters in terms of convenience and affordability. They also expect their banking products to have modern payment services which can compete in the open marketplace.⁷

Social media offers a proven way to reach new customers with the right messages about the right products. Social media and eCommerce are blending, and banks need to consider how they participate in this vibrant new environment.

All of these market needs result in business risk, and opportunity, for you.



Corporate Perspective: The Immediate “Pay to Post” Advantage

When considering a truly modernized financial services platform from core banking to payments, new and previously unforeseen benefits emerge for the customers and for the financial institution. For example, financial service providers will experience a dramatic shift in reconciliation, stand-in balance management and exception handling in an end-to-end, real time payments service flow. Being able to initiate, validate, route, clear, settle post, and inform – all within seconds and seamlessly for the customer – enables the transaction itself to become cheaper, certainly less risky, and improves the client experience.

For larger corporate and institutional clients, the advantages extend further: With an optimized working capital model, eliminated stranded assets and newly available funds for overnight investments offer bottom line benefits to the service provider and their clients. A real time, end-to-end experience, driven from modern banking and modern payments and integrated to modern digital channels is a game changer for the industry. Providers that get there first will establish new brand equity and true differentiation. This seemingly simple and limited application of an end-to-end real-time flow has far reaching implications for the future of financial services, and there are countless more for those moving to innovate now.



Trends and Predictions

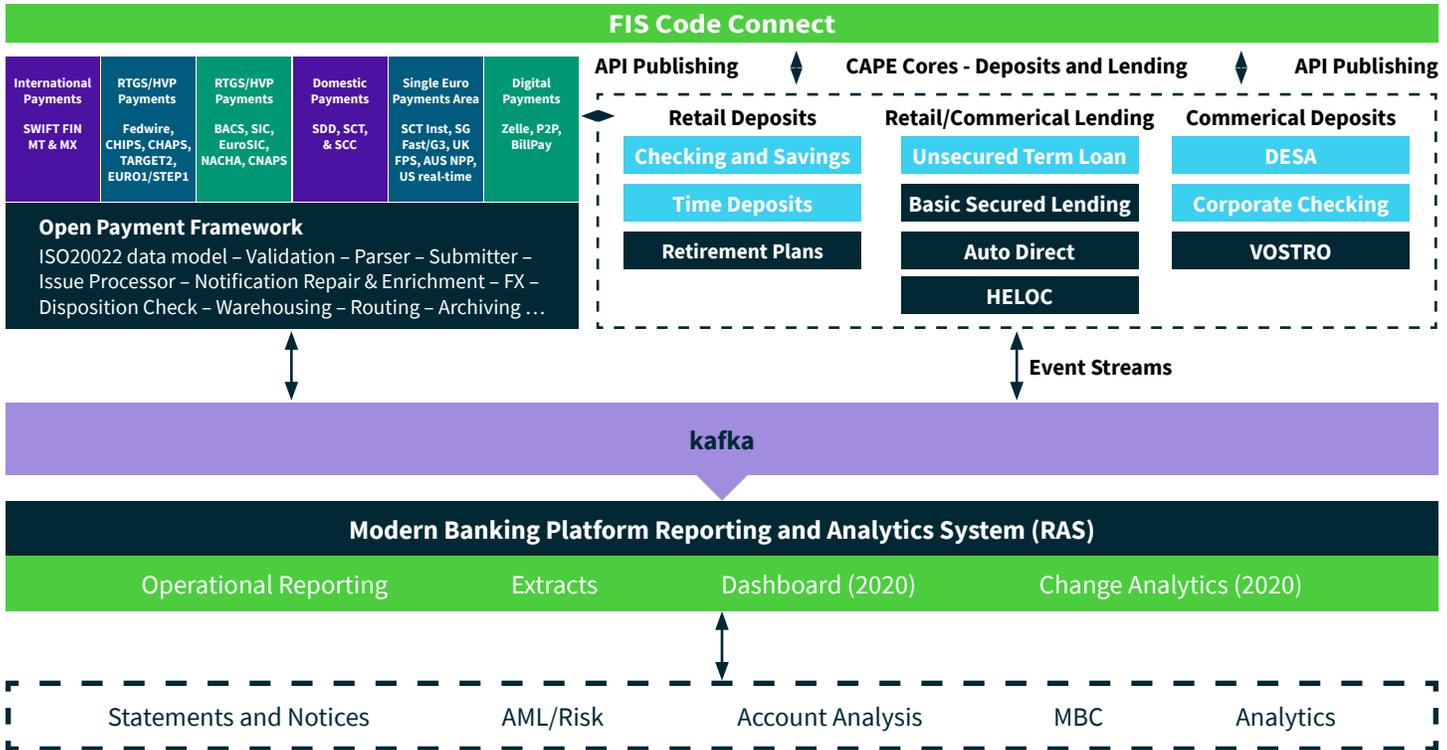
Analysts note the following key trends and predictions:⁸

- By 2025, nearly 15 percent of retail payments revenue globally will be at risk from card displacement by real-time payments, competition from non-banks and digital disruptors, and pricing compression.
- 32 percent of retail bank executives view fintechs as their biggest competitors in terms of revenue migration.
- 54 percent of companies in the Accenture Strategy Competitive Agility Index experienced a material drop in trust and lost out on \$180 billion in revenue.

What's the key takeaway here? **Get moving now.** Your bank does not have the luxury of waiting if you want to hold on to your customers, let alone win new market share. You are already under attack by disrupters, and the time to take action is now.

What Will “Better” Look Like?

In light of the market changes and needs, what does “better” look like in the world of modern banking and payments? As an example, being able to commence a modern banking transformation with an agile, new product offering should be able to leverage new components in your payment modernization. As depicted in the diagram below, a nimble approach harmonizes development on the core segment with a parallel set of payment services to augment your new offerings:



Modernization with Development Harmony

How can a bank get to that better state in the open banking world? The keys to success in the market are componentization and API enablement. Start with a Target Operating Model and reference architecture, and ensure that the “triad” of core, channels, and payments aspects in your target architecture all point to a logical place where your payments journey can match your core and channels approach. As referenced in the FIS white paper *Un-riddling Core Modernization*: “... modernization through componentization can be a much more efficient and beneficial transformation strategy that produces impactful and measured short-term wins, aligned with long term visions”⁹. Therefore, your payments component vision should take into account both your core and channel component goals.

Why are components important?

Componentization separates capabilities, traditionally locked together within the monolithic structure of legacy cores, into separate components that each perform a specific function. A collection of components can be seamlessly integrated, creating a slimmed-down, nimble, flexible core. Each component can be upgraded or replaced individually without disrupting other bank functions or data.

Why Components Are Better for Modern Banking

Componentization allows for targeted or holistic modernization

Component-based Architecture

- Implement change in a cost-effective way without full redeployment and testing
- Allows incremental phases of core modernization while preserving strategic IT investments

Low-risk Transformation

- Componentization protects from the risk associated with the “rip and replace” approach for legacy core upgrades
- Supports your bank’s business objectives right now, and into the future

Quick-to-market Components

- Enrich existing capabilities and add value quickly

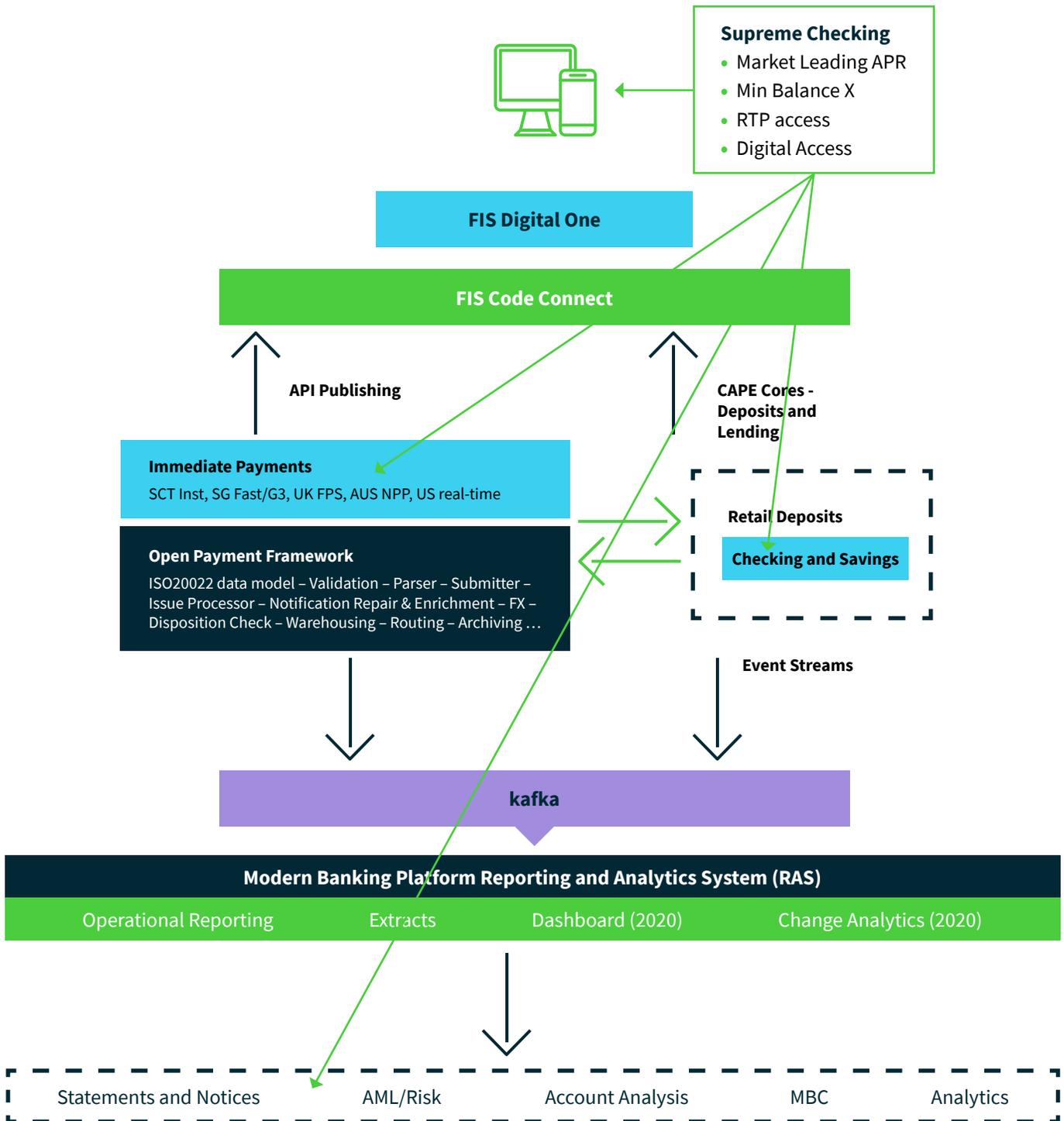
Benefits of Componentization

With a component approach for core and payments, you can allow the bank’s channels to consume new market products as you create and deploy them. Armed with a proper reference architecture, this approach also enables you to retire legacy applications which otherwise would have been orphaned functionality in a modern architecture platform.

As you target necessary capabilities, you can manage gray space and make use of newer components which have similar functionality, managed as part of a much larger picture. For instance, legacy online banking channels typically utilized a “transfer warehouse” which was used to hold scheduled money movement transactions, but outside of the core systems and the payments systems. The instructions could be repeating, and often had targeted payments channels such as internal transfer, ACH or Wire. The data typically could only be accessed by the Online Banking (OLB) channel and in many cases no transaction history was available.

Table stakes for a payments hub in today’s world: A central repository which houses the transactions with API access, full transaction history, optional routing and the capability to be augmented with rulesets, limits, fraud, AML and velocities. In short, this modern “transfer warehouse” makes a reasonable case to utilize an open platform such as the Open Payment Framework (OPF) in a tactical deployment while embarking down the path of a horizontal payment strategy.

The same use case works for a modern core approach that enables a product which requires real-time payment (RTP) capabilities as a bonus to high-value transaction customers. Not only can the channel use the RTP interface and real-time capability of the payment hub, but the core is also able to process the transaction history and completion, thus potentially crediting the account with appropriate fees and charges based on volumes or tiers. The two systems can act in harmony to fulfill a true product capability in both the payment and core accounting realms without having duplicated business logic. See below for an example.



Unified Banking and Payments

By using the appropriate components of modern banking and payments solutions, you can choose a path which allows your bank to achieve its unique short-term, near-term, and longer-term goals. Progress will be driven by business success, and repeated “cycles of improvement” will propel momentum and ensure ongoing support from customers, investors, and other stakeholders. In parallel you will be able to eliminate legacy technology and costly spend, while progressively realizing the bank’s goals of modernization.

With a modern architecture, your bank has a blueprint for the future, without knowing exactly what that future holds. A unified core banking and payments architecture enables the bank to profit from change and participate fully in the new open financial ecosystem while keeping its Core-Channels-Payments triad in perfect balance.

Who can help? FIS.

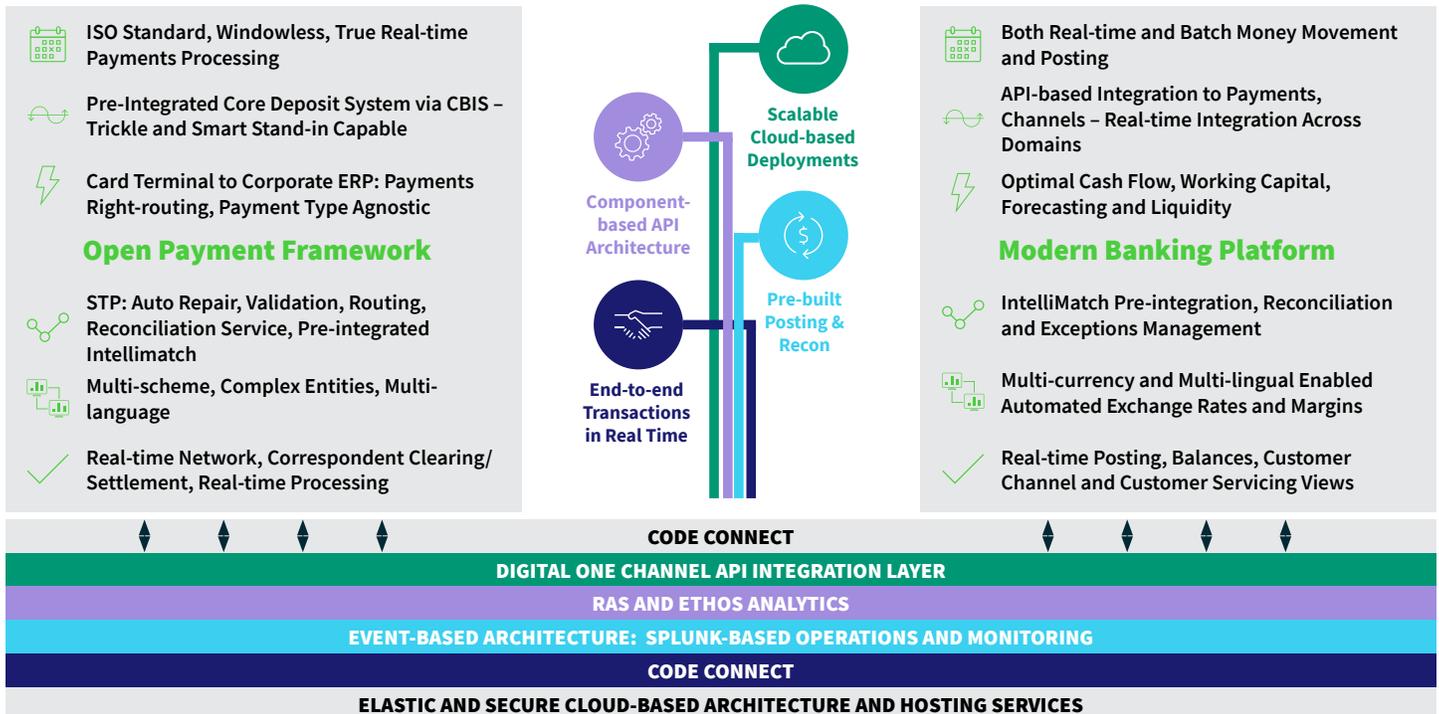
With FIS and our Modern Banking Platform approach, you will have access to cloud-capable solutions designed with API-first functionality that puts you in control. Plug-and-play to build the bank you need today with the flexibility and speed to innovate now and into the future. Lower your costs, reduce IT burden, manage regulatory demands and easily launch new products — with a view to elevating all three components of the investment and technological advancement triad: core, channels, and payments.

PROFITING FROM THE POWER OF FIS ENTERPRISE SOLUTIONS

FIS Open Payments



Modern Banking Platform



Modern Payments + Modern Banking: A Powerful Combination

The FIS Modern Banking Platform approach supports retail and commercial banking with a full depth and breadth of products, payment schemes and digital channels. The platform is designed to seamlessly integrate with other FIS solutions and provide fraud detection, risk management, and regulatory compliance with modern, intuitive user interfaces. With the flexibility of its component architecture, the FIS Modern Banking Platform enables your bank to focus its modernization efforts on areas that address its strategic priorities and offer the highest potential returns.

So, what does “better” look like? *Fast, unified and built to last.*

When FIS Enterprise Payment Meets Modern Banking Platform



Continuous
Processing and
Settlement



Global at
the Core



Leveraging the
FIS Ecosystem



Integrated
Data



On-premise
Hybrid Cloud

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About FIS

FIS is a leading provider of technology solutions for merchants, banks and capital markets firms globally. Our 55,000 people are dedicated to advancing the way the world pays, banks and invests by applying our scale, deep expertise and data-driven insights. We help our clients use technology in innovative ways to solve business-critical challenges and deliver superior experiences for their customers. Headquartered in Jacksonville, Florida, FIS is a Fortune 500® company and is a member of Standard & Poor's 500® Index.

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